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## Diagrams

1. Power Switch (on/off as of 2021)
2. Power Indicator Light
3. Heating Indicator Light (amber as of 2021)
4. Water Reservoir
5. Cup Warming Tray
6. Pump (brew) Pressure Gauge
7. E61 Group Head
8. Brew Lever
9. Drip Tray
10. Single Portafilter
11. Double Portafilter
12. Cleaning Brush
13. Backflush Disc
14. Coffee Tamper/Scoop



New Indicator lights & on/off switch (2021)

## Introduction

Thank you for your business! You are going to love your new Carola espresso machine. It combines classic beauty, value, and great performance for making the best espressos you've ever tasted! These instructions include tips that will help bring out the Barista that's hidden within! Enjoy your new machine!

## First Time Set Up

Before using your machine, test your water for hardness using the provided test strips. Fill a glass with cold tap water; dip the tip of the test strip into the water for one second, then pull the strip out of the water and hold it horizontally for fifteen seconds. After fifteen seconds, compare the color of the strip to the chart on the side of the package to determine how many grains of hardness is in your tap water. Three grains or less of hardness is acceptable to be used in the machine.

**Note:** Should your water's hardness level exceed three grains, then it is strongly recommended that an in tank softener be used or a different source of water that has been tested for hardness. Some bottled water can be extremely hard and should always be tested before using. Using a Brita or PUR style pitcher or faucet filter **DOES NOT** remove any hardness from the water and should only be used in the machine if your water source is under 3 grains of hardness. Using hard water in the machine will affect its performance and may cause damage to the machine which is not covered under warranty. Open the hinged reservoir door on the top of the machine and remove the water reservoir. Rinse the water reservoir out and fill with cold softened water and then install it back into the machine being careful not to spill any water inside the machine. Be sure that silicone lines are sitting on the bottom of the reservoir. To make sure boiler is completely filled before continuing set up, please follow these first time set up directions:

**\*\***Before plugging the machine in, verify that the brew lever is in the down position. Also make sure the power switch is in the "off" position, and the drip tray is in place. Plug the machine into the outlet; flip the switch to the "on" position. Raise the brew lever for 30 seconds. During this time the heating indicator light will illuminate and the machine will start to heat up. Shut down main power for 4-5 minutes allowing heating element to rest. Repeat 2 to 3 times until water comes out of the group head. At this point your boiler should be full and now you can allow your machine to fully heat. **\*\***

## Failure to follow the steps can result in damage to your heating element.

When heating you will hear some gurgling noises, this is normal. After filling the boiler insert the portafilter (loosely) into the group head so it heats up with the machine. The machine should reach temperature in approximately 15 minutes, but to make delicious espresso with thick rich crema it is necessary to allow the machine to heat for 30-45 minutes with the portafilter kept in the grouphead.

\* The electrical outlet must be a 3 prong 120V grounded outlet. **No adaptors or extension cords should be used.** A timer may be used to turn the machine on and off, but it must be a 3 prong grounded timer rated for 15 amps. A GFCI outlet is recommended but is not necessary.

## Before Each Use

Fill the reservoir with cold softened water.

Place whichever portafilter you intend to use into the group head and then flip the power switch.

Lift Brew lever until water comes out to ensure boiler is completely full.

Let the machine warm up for 30-45 minutes for optimal performance.

## Normal Operation

### Gauge

The gauge is for your pump (brew) pressure. When sitting idle the gauge is reading trapped pressure and may vary. To get an accurate pump pressure reading install the backflush disc in the portafilter and lock it into the grouphead and raise the brew lever. After a few seconds the pressure should rise to about 9-10 bar. When you make espresso the pressure will be slightly less which is normal. This can be helpful in setting your grind. If your pressure is 9-10 bar with the backflush disc, but when you make espresso it is less than 8 bar then you need to go finer with your grind which will create more resistance to raise the pressure. Should you need to adjust the pump pressure please refer to the maintenance section of the owner's manual.

### Lights

On the front of the machine there are 2 indicator lights. The green power light will illuminate when the machine is on. The red heating light will illuminate every time the heater comes on and will cycle on and off to maintain temperature.

### Switches

There is one switch on the front of the machine. When switched "on" the machine will automatically fill and begin heating. Please be conscience of this on first time set up and refer to directions stated above.

## Normal Operation, Continued

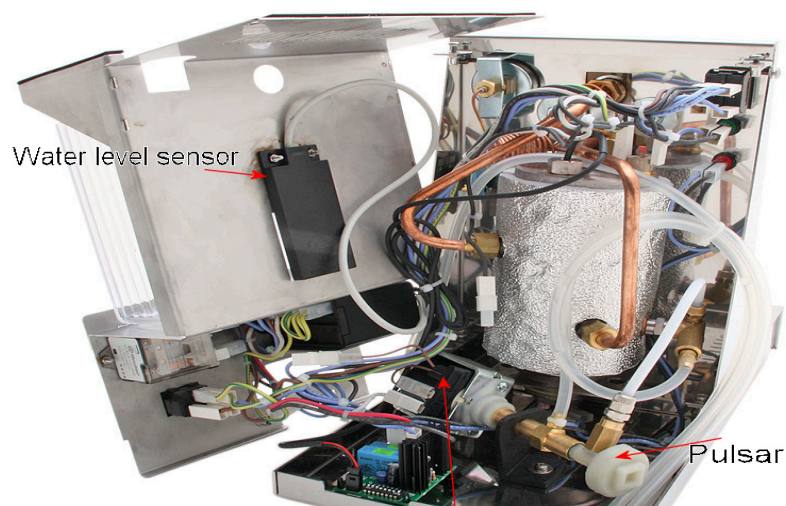
### Pump

The machine is equipped with a 52W vibratory pump. Vibratory pumps can be loud by nature and their tone may change during the course of a shot which is normal.

The pump (brew) pressure is regulated by the expansion valve. To learn how to set the pump pressure please, refer to the maintenance section of the owner's manual.

The pump is equipped with a klixon thermal fuse. Should the pump run for an extended period of time the klixon will kill power to the pump until it has cooled off.

The vibratory pump is also equipped with a pulsar. The main function for this device is to aid in the quieting of the pump



## Water Reservoir

The water reservoir can be accessed by lifting the top off the machine. We recommend that the reservoir be removed prior to filling to prevent the spilling of water inside the machine which can cause damage to sensitive electrical components. Should water accidentally get spilled inside the machine then immediately turn the power switch to the off position and unplug machine from electrical outlet. Do not plug the machine back in until it has had at least 1 full day to dry out. If it does not operate after that time then unplug the machine and refer to the troubleshooting section of the owner's manual.

The reservoir should be cleaned at least once a week with mild dish detergent and rinsed thoroughly before use. **DO NOT PUT IN DISHWASHER!!!**

Depending on your water quality it may be necessary to periodically sanitize the reservoir or if you are using hard water and have a mineral build up inside. White vinegar can be used to sanitize and will also remove the mineral deposits that can accumulate. Fill the reservoir with white vinegar and then let it sit for an hour and then rinse and clean the reservoir thoroughly. If the reservoir still has a vinegar taste or odor you can mix some baking soda and water in the reservoir to remove the taste and odor and then clean it as you normally would.

## Brewing Espresso

Let's begin by stating that there are three main variables of preparing great espresso.

1. Quantity of ground coffee
2. Tamping
3. The grind

### Quantity of ground coffee

Loosely fill the basket slightly mounding over the top. Then lightly run your finger arched across the basket from left to right, right to left, front to back, and then lay your finger flat on the basket and go from back to front to remove any excess coffee. This technique helps fill any voids in the basket to help achieve an even extraction.

### Tamping

After filling the basket with coffee then use your tamper to apply 30lbs of pressure evenly on the coffee bed. Then without applying any pressure lightly twist the tamper on the bed of coffee to "polish" the loose grounds on top. Then lock the portafilter firmly into the group head and then raise the brew lever to start the extraction. When it has reached the desired level, lower the brew lever to stop the shot. It is very important to tamp consistently with the same pressure each time or your shot quality and timing will vary.

## Brewing Espresso- Continued

### The grind

Adjust your grind so that when you activate the pump, the flow of coffee coming out of the portafilter spout looks like the tapered tail of a mouse. It should take approximately 25 seconds for a 2 oz. double shot. If your shot is coming out quickly, the grind needs to be adjusted finer, if your shot is coming out too slowly or not at all, the grind should be adjusted coarser. The grind particle size should look in between powder and salt. Not as fine as powder, but not as coarse as salt. Getting the right grind is crucial to making delicious espresso with a thick rich crema on top.

### Consistency

The quantity of ground coffee and tamping pressure should always be the same. Using more or less coffee or tamping lighter or harder will greatly affect the outcome and timing of the shot. If the shots are not coming out properly then the only variable that should be changed is the grind.

**Cleaning Tip:** Get into the habit of disposing of the spent grounds immediately after brewing espresso. After disposing of the grounds, return the portafilter to the group head and raise the brew lever for a few seconds to rinse away excess oils and loose grounds. By regularly following this procedure, you will greatly reduce the tar-like buildup on the shower screen that occurs if you allow coffee oils to dry and bake on the hot group. A cleaning brush has also been included to clean the group screen and gasket.

## Setting Coffee Brew Temperature

The Carola Evo is equipped with a PID. The coffee brewing temperatures are adjusted by using the up/down buttons.



A PID controller uses the latest technology to provide a more stable and accurate brewing temperature to bring out the best taste characteristics of the coffee you're using. It also gives you the ability to easily change the brewing temperature to match different coffee blends and experiment with the tastes brought out at various temperatures and parameters.

**Shot Timer** - The PID has an integrated timer for your shot duration. When the timer is activated the counter begins to increase and is displayed on the PID.

The PID has been configured for optimum performance and should not require any adjustments other than the temperature. The default temperature should be set around 200 degrees F, but can easily be changed to match your coffee.

The temperature shown on the display may vary from the set temperature while heating or pulling a shot. This is completely normal. As long as the machine has adequate time to heat up than the temperature hitting the coffee will be consistent with the set temperature despite the variance shown on the display.

### Changing Brew Temperature

With the machine on press and release the left button. When the display reads "PrG" press and release the up right button to display the set temperature. Use the left and right buttons to change to the desired temperature. After a few seconds the PID will revert back to normal operation.

*Recommended temperature is between 198-205 F*

### Advanced PID Settings

These instructions will allow the user to change the temperature from Fahrenheit to Celsius as well as other advanced settings. It is not recommended to change the advanced settings unless the user has a thorough understanding of how a PID controller operates.

- To change the advanced settings, with the machine turned off hold down both arrow keys and then turn the main power switch on. When F.03 appears on the display then release the arrow keys.
- Press the up arrow key to select and change the existing setting.
- After changing a setting you must wait a few seconds for the display to revert back and then you can press the down arrow key to cycle to the next setting.
- To save the new settings turn the machine off and then back on again.
- The PID calculation algorithm involves three separate constant parameters, the proportional, integral, and derivative values. These values can be interpreted in terms of time: P depends on the present error, I on the accumulation of past errors, and D is a prediction of future errors based on the current rate of change. These 3 settings work together to determine when and how to apply power to the heating element.
- The PID controller allows for a more precise temperature control than a traditional thermostat or pressure stat controlled system. It also enables you to quickly and easily change the brew temperature to match your personal tastes.
- The offset is the difference between the temperature drop from when the water leaves the coffee boiler and then hits the coffee. This setting has been calibrated using a Scafe device and should not be changed.

ADVANCED SETTINGS	DISPLAY	DEFAULT SETTINGS	
Fahrenheit Or Celsius Mode	F.03	F	C
Proportional Value	P	1.5	3
Integral Value	I	0	.05
Derivative Value	D	1.5	2
Offset (temperature between boiler and group)	F.04	18	12

## Maintenance

Backflushing is a vital maintenance procedure you must follow to help keep your machine running flawlessly for years to come. There are two types of backflushing; one with plain water, and the other with espresso machine cleaner.

Plain water backflushing should be done at least once a week, however if you are so inclined, feel free to backflush with plain water as often as you like. It won't harm the machine and keeps the shower screen clean. To backflush, you use the portafilter's backflush disc. To remove your single or double portafilter basket, use the blank portafilter insert. Turn it upside down and use its edge to pry the basket out of one of your portafilters. (If you always make double espressos, you may choose to keep the blank portafilter insert in your other portafilter so you always have one ready.) Next, place the blank insert into the portafilter and slap it hard with the palm of your hand to secure it into the portafilter.

To perform a plain water backflush, place the portafilter into the group head. Then raise the brew lever all the way up for 15 seconds, and then lower it. Water will forcefully discharge out of the bottom of the group into the drip tray; this is normal. Repeat three to five times.

Backflushing with espresso machine cleaner is the same procedure as above with a few minor differences. The first difference is backflushing with espresso machine cleaner only needs to be done approximately once a month or every 35-50 espressos. We don't recommend backflushing with cleaner more often than once every three weeks since overuse will remove oils that lubricate the brew lever and valves.

To begin, place 1/4 of a teaspoon of espresso machine cleaner into the backflush disc in the portafilter and then lock the portafilter into the grouphead. Now follow the same procedure as above until the cleaner is dissolved and the water runs clear (about 5-10 flushes). Remove the portafilter from the group and rinse thoroughly. Then take a damp cloth and wipe the underside of the group. After you have finished this procedure, we recommend you pull a shot of espresso and dispose of it to cure the group. You're finished and ready for another month of espresso.



## Setting Pump Pressure

To set the pump pressure, install your back flush disc into your portafilter and lock it into the group head.

Remove the top cup warming tray to expose the expansion valve adjustment screw (shown in photo below).

Raise the brew lever and then wait a few seconds for the pressure to rise, which is normal on a vibratory pump. After the pressure has risen, use a flat blade screwdriver to turn the expansion valve adjustment screw. Turning clockwise will increase the pressure, counter clockwise to decrease the pressure.

The recommended setting with the back flush in is about 9-10 bar. When you make espresso the pressure will be slightly less because there is no longer 100% resistance as there was with the blank disc engaged. If after adjusting the pressure higher or lower you're seeing it displayed far more or far less you will need to adjust your grind accordingly.



## Group Gasket And Shower Screen Replacement

The group gasket is a black rubber or blue silicone gasket. This makes the seal between the portafilter and the group head. We recommend replacing the gasket on a yearly basis which will make the replacement procedure much easier. The Carola uses an E61 8.5mm gasket. They can be purchased from our website at the link below:

<https://www.chriscoffee.com/Group-Gaskets-p/groupgasketg.htm>

Replacing the group gasket requires the removal of the shower screen as well so we also recommend replacing the shower screen at the same time. The E61 shower screen can be purchased from our website at the link below:

<https://www.chriscoffee.com/Group-Shower-Screens-p/groupshowerg.htm>

If water is leaking around the portafilter while brewing then the group gasket should be replaced.

Before replacing the group gasket and shower screen the machine should be turned off and cooled down so that the grouphead is cool to the touch.

## Carola Evo Eco Timer

The Carola Evo now has a built in Eco timer. This gives the machine the ability to turn off the heating circuit when the machine sits Idle when not in use for the set time. The timer has a range of a minimum 10 minutes to a maximum of 240 minutes (4 Hours).

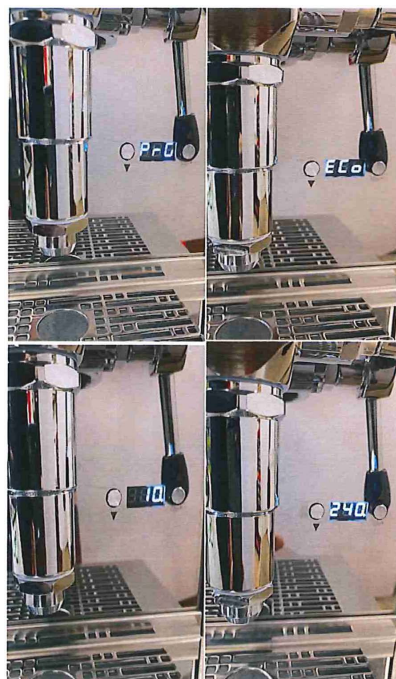
Start with the machine on in position 2.

Press the left button (Down Arrow) the display will read Prg .

Press the left button (Down Arrow) again the display will read ECO

Press the right button (Up Arrow) the display will read off by default. Continue to press the right button the timer will count in 10 minute increments up to 240 minutes. To decrease the time press the left arrow until desired time. After you select the desired time after 2-3 seconds the display will change to Eco press the left arrow to exit and save settings.

After the heating circuit turns off, to wake the machine to resume heating simply lift the brew lever. The red light will turn on indicating the heat circuit is on.



## Group Gasket and Screen Removal

There are two ways to remove the group gasket and shower screen depending on how old they are. If you replace the group gasket on a yearly basis then the first method shown is recommended. If the gasket is older and dried out then the second method shown will be necessary.

### Method 1

In the picture to the right shows an indent that goes around the perimeter of the screen. Insert either a flat blade screwdriver or a spoon into the indent and then carefully pry the gasket and screen down. You may have to do this on a few spots to remove them more easily.



### Method 2

If the gasket and screen will not come out using the previous method then you will need a scratch awl or ice pick to remove them.

Using the scratch awl or ice pick, deeply pierce the gasket and then pry it down. If the gasket is old and dried out then it will be more difficult to remove and will come out in pieces. Repeat until all remnants of the old gasket are removed.



## **Cleaning The Group**

Before installing the new gasket and screen it is very important to clean the group head. Make up a solution of hot water and backflushing cleanser. Using the provided cleaning brush and cleanser, clean the group head and be sure the groove that the gasket sits in is completely free of any residual gasket material and coffee grounds or the new gasket will not seat properly.

## **Group Gasket And Screen Installation**

### **Step 1**

With the writing or beveled side of the gasket facing up insert the screen into the gasket as shown to the right. To make installation easier, use a little bit of food grade lubricant around the perimeter of the gasket.



### **Step 2**

Remove the insert basket from one of your portafilters and then insert the screen and gasket into the portafilter as shown to the right.



## Group Gasket And Screen Installation- continued

### Step 3

With the gasket and screen in the portafilter, press the portafilter into the group head as shown. Apply equal upward pressure on the portafilter so the gasket goes in evenly. Once the gasket is up far enough then lock the portafilter into the group head and turn as far right as possible. Then remove the portafilter and re-install the insert basket and then work the gasket up further into the grouphead using the portafilter with the basket installed. If you are having trouble then remove the portafilter and press the screen up further by hand and then try using the portafilter again.



**Maintenance Tip:** Replacing the gasket on a yearly basis will make the replacement procedure much easier. There are also benefits to having a new gasket. It will provide a better seal for a better espresso extraction and it also enables you to be able to remove the shower screen without ruining the gasket to provide for better cleaning which will result in better tasting shots.

### Descaling

Chris' Coffee Service does not recommend descaling by the end user.

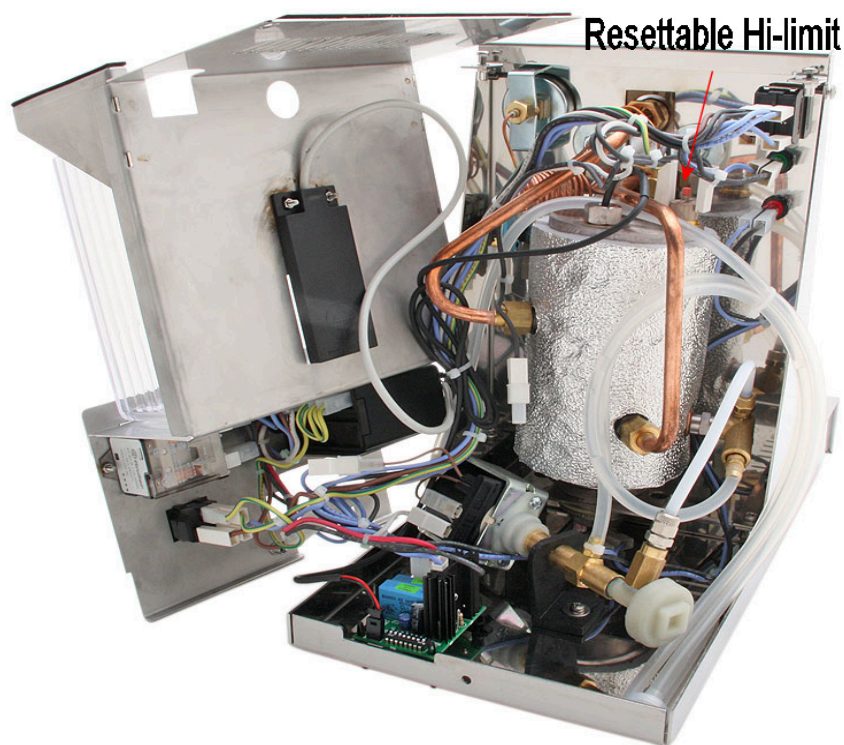
Often times home descaling can cause more problems than it solves. Various home descaling agents can react to the minerals and foam over ruining electrical components. If the solution is too strong it can cause the chrome plating inside the group to flake off and get in the coffee or if it's too weak it can dislodge minerals and cause a blockage. **For liability/warranty reasons we strongly discourage descaling and will not provide any instructions on the process.** Please seek a qualified service technician to properly descale your machine.

## Troubleshooting – Continued

### Not Heating

Verify the machine is plugged into the outlet and the outlet has power. Also check the power cord and make sure it is properly installed into the back of the machine. Verify the power switch is in the on position.

Check the resettable hi-limit switch on the boiler to see if it is tripped. Unplug the machine from the outlet and remove the outer body panels. Locate the resettable hi-limit switch on top of the boiler shown in the picture to the upper right. Press the small center button down firmly to reset. Re-install the outer body panels and then plug the machine back in and turn the power switch to the “on” position. Wait 15 minutes for the machine to heat up. Make sure the water reservoir is filled with water and is fully seated as far down into the machine as it can go.



## Troubleshooting

### **Espresso Coming Out Too Slow Or Not At All**

Install the backflush disc into your portafilter and then lock it into the group head. Raise the brew lever to check the pump pressure. Recommended setting with the backflush disc is 9 -10 bar. Adjust the pump pressure if necessary. Please refer to the maintenance section of the owner's manual for instructions.

If pump pressure is good then try adjusting the grinder to a coarser setting.

Make sure the longer silicone water line in the reservoir is at the bottom of the reservoir below the water level.

Make sure the screen on the end of the silicone water line in the reservoir is not clogged with debris.

Be sure the insert basket is not over filled with coffee and you are tamping with no more than 30lbs of pressure.

### **Espresso Coming Out Too Fast**

Install the backflush disc into your portafilter and then lock it into the group head. Raise the brew lever to check the pump pressure. Recommended setting with the backflush disc is 9 -10 bar. Adjust the pump pressure if necessary. Please refer to the maintenance section of the owner's manual for instructions.

If pump pressure is good then try adjusting grinder to a finer setting.

Be sure the insert basket is filled with the proper amount of coffee and you are tamping with 30lbs of pressure.