

# *The Barista Express*<sup>™</sup> Troubleshooting

## Poor Results due to Temperature Factors

- **The Portafilter and Filter** – When the espresso is brewed, the temperature of the liquid coming out of the machine, before it hits the coffee, is around 200°F (generally between 195°F and 205°F). While some heat loss is expected and even desired to get the espresso to a comfortable drinking temperature, too much can alter the flavor of the coffee. If the espresso is cooled too much during brewing, the flavor can be sharper or a bit bitter. To help in preventing this, we recommend that the portafilter, with the metal filter inserted, be locked into the brew head with no coffee in it and a single shot be run through it. This will heat up the metal to a temperature much closer to the water brewing temperature and prevent that sour flavor. Once the water is through, remove the portafilter, dry it thoroughly, and add in the coffee to begin the shot.
- **The Cup** – Once the water leaves the portafilter, it is falling down and into the cup. If the cup is cold it can greatly reduce the temperature of the espresso prior to drinking. Between 160°F and 180°F is considered a comfortable drinking temperature. However, the hot espresso entering a cup that is significantly lower in temperature than the water brewing temperature of around 200°F can cause the liquid to drop below that comfortable level. This can cause the espresso to taste off and not be at all appetizing. We recommend that when the portafilter is being pre-heated with a single shot with no coffee, the water falls into the cup to be used for the drink. Let the water stay in the cup, heating it, until immediately before extracting the shot.
- **Other Temperatures** – If the cup has been warmed as well as the portafilter and filter, please note that it is also vitally important to descale the espresso machine. Mineral deposits can build up along the thermocoil heater and prevent the full transfer of heat to the water. We recommend that, with regular once a day use, the espresso machine be descaled every 2 to 3 months. If hard water is being used or the espresso machine is being used more often, the time can be lessened to every 1 to 2 months between descalings.

## Poor Results from Coffee Factors

- **The Roast** – The darker the roast, the glossier the surface of the beans will be. This means that the oils have been roasted to the surface and these will need to be used fairly quickly to prevent evaporation of the oils. Letting glossy beans wait in unsealed containers will dry them out and, when brewed, will produce a result that is lacking in the normal, rich crema.
- **Freshness of Grind** – Pre-ground coffee will also allow more of the oils to evaporate before they can be used. The results of using pre-ground espresso that has a roasted on date that is very much in the past is that the espresso will be lacking the full crema, may be less aromatic, and may come out watery, thin. Keeping pre-ground espresso in an airtight container and making sure that it is finely ground to provide the most surface area for the water to pull out the remaining oils can help with these issues for pre-ground espresso.

- **Coarseness** – The grind of the coffee is very important. Twenty coffee beans ground on a very coarse setting will take up more room than twenty beans ground on an incredibly fine setting. If darker, oilier beans are used, the grind will need to be fine to make sure that the highest amount of oils are utilized during extraction. Milder roasts will not need to be as fine in order to get the same quantities of oil and flavor intensity. If the beans are older, the grind, again, will need to be a bit finer in order to make sure the most oils possible are extracted. However, too fine of a grind can cause the water to only drip out during extraction, making the espresso taste a bit burnt. Too coarse and the water will flow out too quickly, leaving the espresso weak.
- **Tamping Depth** – The tamping of the grounds is the next coffee factor. Depending on the coarseness of the grind being used, more or less coffee may need to be added to the portafilter. A general guide is that, once tamped, the coffee grounds should be about 1/8th of an inch below the top edge of the portafilter. For a visual, that's about this long . It should be roughly this low to allow the coffee to be close enough to where the water comes out so that a good pressure seal can be created easily but far enough away that the grounds are not pressing up into the shower head that the water is coming out of, effectively blocking them. The tamp of the grounds should force the grounds down that 1/8th of an inch below the top edge of the portafilter. If the coffee is pressed too far down, the water will just flow through it quickly. If it is too close to the shower head, it will barely drip out.
- **Tamping Pressure** – Tamping pressure is also a factor in the extraction. Packing down the grounds as hard as possible will not allow enough room for the water to flow through. Not packing down the grounds tight enough will produce weak results as the water will flow through too quickly. The general idea is to put around 30 lbs of pressure on the grounds when tamping. Getting the entire section of ground coffee compressed with just a tamp is impossible, however, 30 lbs of pressure will compact the upper portion enough to force the water to around 9 bars of pressure to get the fluid through the grounds. While the upper portion provides the initial resistance to make good crema, it's the slightly looser grounds at the bottom that keep the flavor pressure up. Once water hits the grounds, they expand and while the upper portion is the initial resistance, once the bottom portion expands with moisture, it, too, provides similar resistance and pressure. 30 lbs will compact the upper section of grounds to make the rich aromatic crema generally sought.

## Poor Results from Frothing

- **Non-Fat Milk** – When frothing milk, the lower the fat content, the 'bigger' the foam. The results will be a lot of foam with larger bubbles in it. Non-fat milk is best at this. Due to a lack of fats, the liquid is able to create and maintain larger fluffier froth/bubbles. If the goal is 'microfoam', the smaller-bubbles, more silky textured foam then fat is needed. If the froth is not the consistency that is desired, using a higher fat content milk is suggested.
- **Low-Fat Milk** – The higher the fat content of the milk, the higher the temperature will need to be in order to create the foam. Low-Fat or 2% Milk is a mixture of the silky fat enhanced milk and the bubblier non-fat milk. It will take longer to get the quality and

volume that is intended with a higher fat content but the results will be closer to the silky texture

- **Whole Milk** – Whole Milk is about 4% fat content and will take a higher temperature and longer heating/frothing time in order to reach the resulting silky foam. The volume of the milk will increase as the steam is added but it will take a bit of time before that silky textured foam results.

### **Lack of Steam**

- If the steam wand is not producing steam or not enough steam, it's important to make sure that the heating light is not lit while turning on the steam.
- Make sure that the steam wand tip is not clogged. Using the needle end of the cleaning tool, slide the needle into the hole at the tip of the steam wand, breaking through any clog that may be there. Once done, turn on the steam and allow it to run for 10 seconds.
- To prevent the steam wand from being clogged, after each use, turn the steam on and allow it to run for 10 seconds, steaming into the drip tray to clear any milk that may be inside the tip from the last frothing done.
- It is important to note that when the steam is initially started each time, a small amount of water will drip out. The water that remains in the steam wand after steaming will cool and condense back from steam into water and this will be forced out before the steam comes out.
- When descaling the espresso machine, make sure to run some of the solution through the steam wand. Since steam and water do come out of the wand, it, too, will have mineral deposits and the descaling will help in preventing clogs.

### **Poor Results from the Grinder**

The grinder on the Barista Express™ is the first step to making a great shot of espresso. Sometimes, however, that first step can be a bit awkward. If the resulting grinds are not what were expected, there can be some fixes put in place to help. If the grinder is not producing any grinds or very few, the following should be checked:

- Clean the bean hopper. – When espresso beans are ground into smaller particles, they create.. well smaller particles. All burr grinders have nooks and crannies that are necessary for the movement of the parts in the machine. However, they can attract those small particles and cause clogs. Those particles can get up into the base of the bean hopper, causing the beans to stick together and stick to the hopper itself; not allowing any beans to fall through to the burrs to be ground. Empty the hopper and wipe it with a damp cloth, drying thoroughly afterwards.
- Clean the burrs. – Those same smaller particulates can get into tight spaces on the burrs and create the same type of clogs, only this time internally. Also, oilier beans tend to cause a lot of clogs. Because the oils are on the surface and that is what first comes in contact with the burrs, they tend to attract little bits and pieces of the beans faster, clogging more frequently. Remove any beans from the bean hopper and remove the bean hopper. Using the provided cleaning brush, brush at the particles on the top of the outer

burr, removing the larger ones. The best and most thorough way of cleaning the burrs at home is to get a vacuum with a hose attachment and vacuum up any particles on the top of the outer burr. This can be done alternating between the cleaning brush and vacuum to make sure that all particles are loosened and removed. This is just one burr, though. Grip the ring on the top of the outer burr and turn counter clockwise to loosen, then remove the outer burr. Repeat the brushing and vacuuming on the inner burr. This one can not be removed but the stiff bristles of the cleaning brush and the suction from the vacuum will get the majority if not all of the loose particles out. Replace the outer burr and bean hopper and try running the beans again.

- Cleaning the coffee chute. – The coffee chute gets just as many bean pieces and oily bean build ups as the rest of the grinder so it is very important to clean this thoroughly. Slide the cleaning brush from the bottom of the chute up into the grinder, moving it around and pushing it in and out. Once this is done, try running the grinder empty for a few seconds to remove any grinds that might still be loose inside.

## **Important to note for cleaning**

- It is important to note that the grinder should be thoroughly cleaned every time the bean type is changed or the residual flavors may color the new beans taste. This is true when running different roasts, different brands, or even different flavors (such as vanilla flavored or hazelnut flavored coffees though these are not recommended for espresso or for this machine.) Thoroughly clean the grinder then run just a few beans of the new batch through, this will help push out any remaining grounds.
- There are some suggestions that processing uncooked white rice through the grinder will assist with cleaning. This is somewhat true. However, please remember, when white rice is being run through a grinder to help remove small ground up particles that may be stuck in hard to reach places, what is actually being done...is grinding up a hard food item into small particles and running it through the burr grinder. The exact thing that is being cleaned. The rice can attract oils and is smaller than the espresso beans but the same function that created the bean particles will create the rice particles. White rice can be used but it is suggested that it be used sparingly at best.

## **The importance of water**

Using the right water is essential to achieving the best flavor from coffee and making sure the machine operates without interruption. We do not recommend using highly filtered or demineralized water such as reverse osmosis, ultra filtered, demineralized or zero-filtered waters. The machine is not designed to operate with these kinds of filtered water as there is too little or no mineral content which is required for the sensors within the machine to operate. These types of waters can also alter the taste of the coffee from what one would normally expect.

If these types of waters must be used, we recommend adding in a small bottle (6oz) of spring or tap water when filling the water tank to provide the minimal content of minerals required for the machine to operate without hassle.