

# Barista Manual 1.0

## “Espresso Prep, Mechanics, and Speed”

### Free Excerpt

The following pages are samples from the Gimme! Coffee *Barista Manual* and are available for free download at [gimmecoffee.com](http://gimmecoffee.com).

### Full Version

Complete copies of *Barista Manual 1.0* can be ordered at:

- ▶ [gimmecoffee.com](http://gimmecoffee.com)
- ▶ 1.877.446.6325

The full version includes:

- ▶ 120+ pages of crisp professional printing
- ▶ 60 images including 28 color photos
- ▶ Original diagrams and illustrations
- ▶ Forms for cupping, training, and more
- ▶ Checklists for prep and maintenance
- ▶ Wide margins for obsessive note-takers
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### Why the 1.0?

*Barista Manual 1.0* isn't our final word on the vast subject of specialty coffee preparation. We're always learning from fellow professionals and enthusiasts, and we're already looking forward to future versions. Please send your feedback:

- ▶ [feedback@gimmecoffee.com](mailto:feedback@gimmecoffee.com)
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### 3.3 Espresso Preparation

Espresso is not a kind of bean or grind; it is the name for a process. In the simplest possible terms, espresso is coffee brewed under pressure. In technical Gimme! terms, espresso is water at about 200°F pushed through 21 grams of finely ground coffee at 120 pounds per square inch of pressure (equivalent to 9 atmospheres) for 28 to 35 seconds to produce a triple ristretto shot, between 1.5 and 2 ounces of liquid, consisting almost entirely of crema, a polyphasic colloidal foam that begins to settle immediately.

As the shot pulls, the streams will be the consistency of warm honey, dripping at first but coalescing into a steady stream of deep red-brown crema and only turning a lighter brown towards the very end. The finished shot is deep red-brown and golden all at once, with a mirror-finish crema and darker mottling sprinkled over the top.

Brewing coffee by this method allows many of the more delicate and volatile flavors, aromatics, and oils in the bean to be extracted into the cup. Standard drip brewing relies on gravity to extract flavor from the bean and exposes only those flavor oils just under the surface of the grounds to the brewing water. Espresso brewing forces water into the interior cell wall of the tightly packed grounds, extracting by pressure what gravity alone can't: emulsified oils, sugars and lipids that give espresso the intense and complex flavor profile for which it is renowned.

In the early nineteenth century, Italian inventors began working on a machine that could achieve a perfect coffee extraction, one cup at a time. Gradually, inventors developed the technology necessary to pressurize water and pass it through coffee for true espresso. The first espresso machine to create crema was the 1948 Gaggia lever machine, and it came after a century of experimentation. Since then, espresso machines have been tweaked and refined to create an ever-more-perfect cup of coffee. Machines today offer a wide range of high-tech solutions for excellent and reliable espresso extraction. However, although technology makes espresso possible, it is still as much an art as a science.

Some customers will tend to view espresso as the fastest vehicle available for caffeine delivery, but true enjoyment of excellent espresso is an aesthetic and Epicurean experience on par with fine wines and five-star dining. The shot is intense, flavorful, thick, complex and drinkable from start to finish. Pulling the perfect shot of espresso consists of four central elements: grinding, dosing, tamping and the pour. Skill and precision are crucial at each stage in order to produce the perfect shot of espresso, and Gimme! baristas, along with cultivating their own palates and taste for excellent espresso, are constantly pursuing the "God Shot," the shot of espresso that leaves all others in the dust.

Any bartender will tell you the success of a bar is dependent upon that bar's ability to establish a base of regulars. The same holds true for espresso bars. When people come into our shop for the first time, we want to provide them with a drink so extraordinary

that they forget about any other coffee shop between their house and their job. Nobody else on that route will pour them a rosetta on top of their macchiato. Nobody else will pay attention to every minute detail the way we do. It's the exacting attention to detail that produces a perfect drink, and it's perfect drinks that will keep them coming back.

### 3.3.1 Shot Preparation Sequence

Espresso preparation requires a careful, consistent routine of grinding, dosing, distributing, tamping, and extraction. Excellent baristas hone their skills and micro-manage for consistency. The ultimate purpose of the shot prep procedure is to create a puck of espresso grounds which is smooth, level, and of uniform density. This forces the water to extract flavors at a slow, even rate from the entire puck, rather than blasting its way through the path of least resistance.

#### Here is the sequence of events in every shot:

1. Pre-heat the cup (for ceramic).
2. Start grinder (grind only enough for one shot).
3. Remove portafilter and dry with clean rag.
4. Wait until grind is finished to begin dosing.
5. Dose all coffee into portafilter basket.
6. Dose by cupping fingers and pulling dosing lever with whole arm, rather than by pulling from wrist. Pull softly to minimize noise and wear on springs.
7. Tap the portafilter up two times on grinder forks to fine-tune the dose. It is crucial to do this consistently from shot to shot.
8. Use the cross-distribution technique to level grounds into the knockbox. Using a flat finger, sweep grounds lightly just to the north edge of the portafilter, then south, then back to center. Next, push the pile west, then east, then back to center. Sweep leftover grounds (if dosing correctly, only about 1 grams) into knockbox.
9. Lightly compress coffee with 5 lbs of even pressure.
10. Lightly tap the base of the portafilter with the butt of the tamper.
11. Compress the grounds evenly with 30-50 lbs of pressure.
12. Polish the grounds by twisting tamper 360 degrees.
13. Remove tamper carefully.
14. Clean off excess grounds from perimeter of basket and portafilter cleats.
15. Activate the grouphead for a few seconds to purge standing water and stabilize the temperature—let it run just until it goes clear and starts to flow smoothly (no more than 2 seconds).

16. Gently insert portafilter tight into grouphead. Slamming the portafilter into the grouphead will damage the gasket and crack your carefully prepared puck.
17. Start shot with manual button and time with a timer.
18. Elevate and place the cup under the portafilter.
19. Brewing time for a triple ristretto shot is between 28-35 seconds.
20. Pre-infusion time should be between 6-10 seconds. Every machine has its own specific sweet spot to aim for.
21. Start of drip will mark the end of pre-infusion time, and stream should be steady 3-4 seconds after the drip starts.
22. When the stream begins to lighten in color, the shot is done. Serve it immediately.
23. Pound the puck out of the portafilter into the knockbox.
24. Purge the grouphead, rinsing the portafilter in the stream of water.
25. Replace the portafilter in the grouphead.

### 3.3.2 Grinding

Before we even get started, it's important that the hopper is always kept full. Our grinders rely on gravity to ensure that beans are fed into the grinding burrs at a constant rate, and if the bean level gets too low, the beans will begin to bounce off the burrs in a sort of popcorn effect, resulting in more air and less coffee grounds in the portafilter, and producing a lower quality shot. Keep the hopper at least two-thirds full at all times so the grinder grinds and doses consistently.

Grind setting is one of the first factors that can alter the quality of the shot. If the coffee is ground too coarsely, it will be too easy for water to pass through the grounds, the shot will come out too quickly and not all of the flavors in the bean will be extracted. If the coffee is ground too finely, it will choke the machine, barely allowing water to pass through and over-extracting the grounds to produce a bitter shot of espresso. The adjustment collar is notched, and each notch will alter the time of the pour by about ten seconds. The barista should always use both hands when adjusting the grind and should rarely adjust more than one notch at a time. After changing the grind setting, it's important to grind a bit of coffee on the new setting and empty the dosing chamber to be sure that any coffee ground on the old setting has been cleared. It's not unusual for a barista to adjust the grind ten or more times on a shift, particularly when the machine is warming up in the morning. A coarser grind will produce a faster, longer pour and a finer grind will produce a slower, shorter pour.

Aim to keep your shots within a narrow range of extraction time, rather than waiting until they're well out of range to make an adjustment. Learn to adjust the grinder frequently, but

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produce the amazed response we're looking for from our customers. The skills necessary to produce latte art take a while to pick up, and are dependent firstly on the barista's ability to make perfectly textured milk, and secondly on his or her ability to manipulate that milk during the pour. Here are the basic steps towards pouring a perfect latte art, but remember, the actual process is delicate and difficult. Don't get discouraged.

### 3.5.1 Mechanics of the Pour

Latte art looks two-dimensional, but it is actually an art form in three dimensions. When you create it, you are using gravity and the principles of fluid mechanics to control the way the milk and espresso combine throughout the whole cup, not just on the surface.

There are three distinct stages of the pour. In the first, you sink the milk and foam under the espresso. In the second, you create a white dot that breaks the surface tension of the crema. In the third, you create the design that sits on top of the drink.

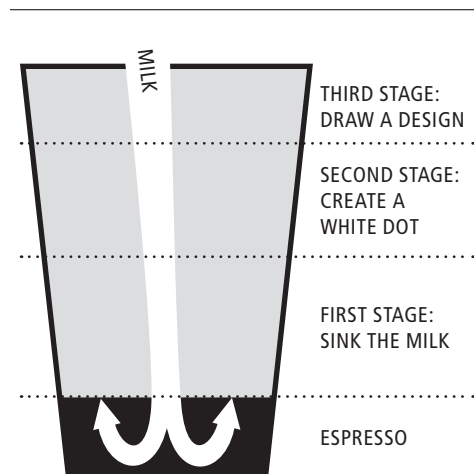


Fig. 23. Stages of the latte art pour.

When you texture the milk, you create a temporary suspension of liquid milk and microfoam bubbles. As soon as the vortex stops, that suspension starts to settle—the liquid milk is heavier and wants to sink to the bottom, and the microfoam bubbles are lighter and want to rise to the top. Swirling the pitcher keeps them in suspension long enough to pour.

#### The First Stage

In the first stage of the pour—from the moment you start pouring to the moment when the surface of the drink has come about halfway up the cup—you are trying to slip the milk and microfoam in under the espresso, raising the crema to form a dark background for your design. The espresso shot itself is covered in a cap of crema which has surface tension. If you pour slowly and smoothly, you can get the milk to slip in under the cap without breaking that tension.

In this stage, you are trying to sink both the liquid milk and the microfoam under the surface of the crema. Holding the pitcher at least four inches above the surface of the drink will give the milk the velocity it needs to sink rather than float. However, when the stream of milk hits the bottom of the cup, it churns back up. If you pour your drink into a clear cup, you can see the milk churning upward when it hits the bottom.

Depending on the speed and smoothness of your pour, the churning can be smooth (if you pour slowly and steadily) or turbulent (if you pour quickly or jaggedly). A turbulent crown will break through the crema cap and suck it down. So, to sink the milk and microfoam without breaking through the dark background, you need to pour very smoothly and steadily with the tip of your pitcher remaining about four inches from the surface of the drink.

### The Second Stage

In the second stage of the pour—between halfway and two-thirds of the way up the cup—you need to break the surface tension of the crema to make room for your design. You do this by getting a little white dot of foam to bubble up from underneath the crema and break the surface.

To maximize your chances of forming a white dot, bring the tip of your pitcher as close to the pour surface as possible, and pour a dollop of milk in. This white dot will spread out around the design and make room for it. During this stage, the milk and microfoam separate. The liquid milk sinks, but since the tip of the pitcher has come closer to the surface of the drink, the microfoam no longer has enough velocity to sink to the bottom. Instead, it churns up just below the surface and breaks through. If you pour into a clear cup, you can see the point at which the milk and microfoam separate. Once the surface tension has broken, you can lay down a thin stream of microfoam to create a design.

### The Third Stage

In the third stage of the pour—between two-thirds of the way and full—you need to bring the tip of the pitcher as close as possible to the surface of the drink to float the foam, and thin the stream to give yourself more time to achieve the design.

The design itself is made by controlling the flow and movement of the stream, so that the microfoam is laid down on the surface in an attractive pattern. Because you are pushing milk into the design, it will continue to spread out as you pour. At any point during this



Fig. 24. The first stage: sink the milk.



Fig. 25. The second stage: create a white dot.



Fig. 26. The third stage: draw a design.

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## 3.7 Workflow

Perfect drink preparation is a worthy goal—but in a café situation, you need more than just a fine drink to make a stellar coffee experience. The best baristas are masters not only of the perfect shot, but also of speed, customer service, and other contextual skills. For a barista, these workflow skills make the difference between a solid B and an A++. Read on for tips from our master baristas—and pick the brains of the pros you know to learn more.

### 3.7.1 Speed on the Bar

Drink preparation becomes a thousand times more challenging when it's performed at top speed, but that's where you've got to be if you want to be able to handle a rush of caffeine-deprived customers. If you're working with a maximum of suave and a minimum of unnecessary movements, you might even achieve that heavenly groove known as “the dance of the barista.” Use these tips to get on the right track.

#### Stay calm.

- ▶ Plan ahead—knowing your next step will keep everything running smoothly.
- ▶ Focus on the task you're doing as you're doing it—don't sacrifice quality for speed.
- ▶ Make contact with the customers (“Your drink is third in line,” “Thanks for your patience,” etc.). Tell them they're not forgotten; don't let them take a wrong drink.

#### Work clean.

- ▶ Brush away grounds from the grinder station after every couple of shots rather than waiting for a huge pile to clean up.
- ▶ Keep milk pitchers organized so you can grab the right one without searching.
- ▶ Keep the countertop uncluttered—extra cups are especially confusing to have around.
- ▶ Use your down-time to restock, wash dishes and pitchers, and organize your area.

#### Work with your register person.

- ▶ Especially in a rush, every cup should be labeled.
- ▶ Anticipate your regular customers—you can start the drink before they even walk in the door. Let the register person know so they don't take the order twice.
- ▶ Keep your ears open for orders. You can have drinks ready by the time they've paid.
- ▶ If you have a dedicated bar-back, they can set up and steam milk while you focus exclusively on shots and drinks without milk in them.
- ▶ Say orders out loud and double-check when you're uncertain.

**Prep milk for speed.**

- ▶ Always set up milk first.
- ▶ Combine milk pitchers whenever possible (two caps, a cap and a macchiato, etc.).
- ▶ Set up your pitchers right next to the cups they go with.
- ▶ Set up syrups either in the pitcher or in the bottom of the cup.
- ▶ Avoid milk waste by using the smallest pitcher possible and pouring exactly the amount of milk you need. This also saves clean-up time.

**Make two shots at a time.**

- ▶ Always set up your milk before beginning your shots.
- ▶ To prep two drinks at once:
  - After setting up milk, set up shot one and pull it immediately.
  - Next, set up shot two and pull it immediately.
  - Texture your first pitcher, then set it down and texture the second pitcher.
  - Polish the first pitcher and pour it into the first shot.
  - Then polish the second pitcher and pour it into the second shot. If you've combined pitchers, this process goes even faster.
- ▶ Start the shot first, then set up the cup during the pre-infusion.
- ▶ If there is a simple drink (Americano, espresso, cappuccino, etc.) and a complicated drink (frozen drink, quad shot, etc.) on the bar, start the complicated drink first and fit the simple drink in the middle.

**What not to do.**

- ▶ Do not grind more than one shot at a time.
- ▶ Do not put a portafilter down on the counter or let it sit out of the grouphead for too long (it cools down and compromises the shot).
- ▶ Do not let a loaded portafilter wait in the grouphead (it burns the espresso).
- ▶ Do not stand waiting for a shot to be finished. In those few seconds, you can prep a milk pitcher or a cup, set up another shot, or clean your area.

**3.7.2 Customer Interaction**

A barista spends countless hours mastering the art and craft of drink preparation—because coffee is, of course, the reason that people come to a café. But customers are also