



# Orphan Espresso Smol Manual Coffee Grinder

We highly encourage you to NOT take the grinder apart until you truly understand the mechanism...maybe not even then!

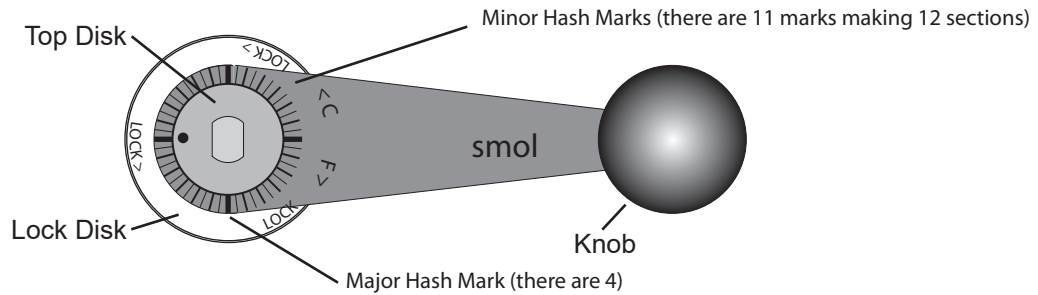
Manuals, Videos & Schematic can be found at:

<https://www.orphanespresso.com/smol-manual-coffee-grinder-info-page>

In the box you will find the grinder body in the zipper bag, and the handle under the cardboard flap at the bottom of the box. Inside the catch cup you will find the knob, and a small strip of self-adhesive dots. Don't lose your dots, you will use them in the future. The first thing you need to do is install the handle, then set up the grinder adjustment system.

To install the handle, remove the Top Disk, then install the handle on the axle, and reinstall the Top Disk.

NOTE: When you install the Top Disk be careful to not cross thread it. It is a normal right hand thread, and if you start the disk, and feel ANY resistance, it is cross threaded (which will damage the threads). If that is the case, turn the the disk SLOWLY counter clockwise until you feel a little 'click' - this indicates the start of the thread, and it should now turn smoothly, and spin down against the handle. The disk should easily & freely spin down with one finger.



## Initial Setup:

Turn the Lock Disk clockwise until it naturally stops - do not force, or over tighten.

Turn the Top Disk clockwise, down against the handle, until the Reference Dot aligns with the Major Hash Mark at the grinder end of the handle.

Move the Lock Disk in the Lock Direction up against the handle. Make sure both the Lock Disk and the Top Disk are tight.

The above illustration shows the grind adjustment set at zero.

If the indicator dot is 180 degrees off, with the Dot on the Knob side of the handle, just reset the handle 180 degrees and repeat the above sequence.

At Zero the handle should move freely and the burr will possibly have small rub sounds (remember - you are at the Zero setting - sound is normal)

## Adjusting the Grind:

Look at the top of the grinder, so you can see the directional indicators and hash marks.

When making changes in the Coarse direction you need only to loosen the Lock Disk slightly, and turn the Top Disk in the C direction to your desired setting, then tighten the Lock Disk upward against the handle.

Fine Direction changes: loosen the Lock Disk, move it down, then change the Top Disk position in the F direction and tighten the Lock Disk upward against the handle.

All 3 parts - Top Disk, Handle, and Lock Disk will turn, when you are grinding, as one unit.

One revolution of the Top Disk is 500 microns Vertical Burr Movement (VBM), 2 revolutions is 1000 microns VBM, Etc.

The Major Hash Marks are 1/4 of a revolution of the Top Disk on the axle thread. They represent a VBM of 0, 125, 250, 375, & 500 microns.

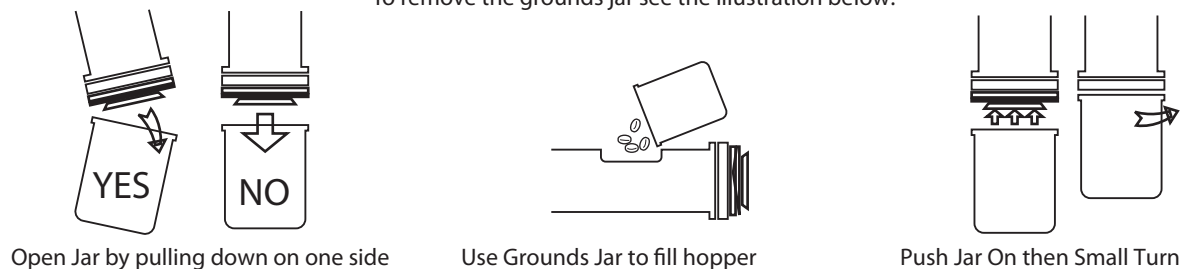
The small Hash Marks are approximately 10 microns VBM (actual is 10.415 microns)

As you can see, some math is involved!

To begin, loosen the Top Disk, then move the Top Disk in the C Direction (CCW) 2 revolutions while holding the handle still. Monitor the dot and the hash marks on the handle to count the revolutions. Tighten the Lock Disk CCW up against the handle.

At the 1000 micron setting, turn the handle clockwise and grind 5 or 10 grams of coffee to lubricate the burrs. Always turn the handle Clockwise when grinding.

To remove the grounds jar see the illustration below:



## Re-Setting Zero after Break In Period:

After a period of grinding coffee, called breaking in, grinding in, settling, bedding in, etc., the burrs will fit together much better and your zero will have moved in the finer direction. We are not talking about grinding just a few beans, but rather a few pounds or kilos of coffee beans...

So, to maintain an accurate VBM the zero on the grinder will need to be recalibrated. Keep in mind - you don't actually HAVE to do this - it's optional. On our Smol, after about 3 pounds of coffee our zero setting had changed to about 3 marks below the original new-burr zero, and since one mark is about 10 microns of VBM we found it much simpler to recalibrate rather than remember the offset forever.

In the Smol, our definition of 'Zero' is when the cone burr will turn freely, with minimal blade touching, and there is no burr gap. There may be sound, depending on the burr, and level of break in.

To check your zero set the Top Disk at the zero mark, and tighten the Locking Disk up against the handle.

Perform the following tests:

1. Handle Drop Test: Hold the grinder horizontally, and the handle should fall freely with no drag.
2. Pull Test: Hold the body of the grinder in one hand and grasp the handle near the Top Disk and pull up - there should be little to no movement up/down of the Handle/Axle/Burr assembly.

After, or during break in you may find the Handle Drop Test will pass, but the Pull Test will have more movement up/down, and this indicates the zero has changed.

Hold the handle still, loosen the Locking Disk, and move the Top Disk clockwise (in the F direction) one or two marks. Tighten the Locking Disk. Perform the Handle Drop Test and the Pull Test. If the handle drops freely, and there is no movement on the Pull Test, you are by definition, at zero.

You can continue this fine tuning if you wish, until the burr begins to drag - that is 'below zero', so back off one or two marks, narrowing the position, until you reach a setting that you feel confident is zero - it passes the two tests. Now peel off the sticker dot, clean with some alcohol, and apply a new dot sticker positioned as in the above illustration. It's easiest to use a toothpick or pointy item to move the dot once you lift one edge of it up off the paper strip.

In practice, we ground 2 Kilograms of beans over a period of about a month and the zero had moved 3 marks in the F direction, and re-zeroed, and replaced the dot. In the following 6 months of daily use the zero has moved 1 mark indicating that after a reasonable break in period recalibration is minimally necessary or relevant.

This process will be best to follow AFTER the burr has broken in, at least somewhat...

### CLEANING THE GRINDER:

Taking the grinder all apart for cleaning is not something we recommend. There is no retention, and therefore no grinds exchange, and no reason to take the grinder all apart - this only increases the chance of damaging the grinder, messing up the alignment, etc. For cleaning just use a brush (a clean toothbrush works well) to brush stray grinds off the face of the grinder burr carrier. Occasionally the grinds jar can benefit from hand washing with dishsoap & water.

DO NOT PLACE ANY PART OF THIS GRINDER IN THE DISHWASHER.

### TIPS AND PRACTICAL CONSIDERATIONS:

We've used our Smol Grinder daily for over 6 months, mostly for espresso. We can offer the following insights:

- Once the handle and disks have been installed there is very little reason to ever take the handle off. The grinder, with handle, will fit nicely in the cloth travel bag - please use it. If you need to take the handle off, please use care when starting the threads of the Disks on the axle.
- When changing the grind setting you may find that the Handle is an easy tool for leverage - hold the Locking Disk Still with one hand and move the handle slightly to Unlock, then continue by moving the Locking Disk & Top Disks as you need.
- It's easy to keep track of the grind setting on the 0.5mm thread - the numbers can become second nature over time.
- Due to the solid Acetal Knob, when standing the grinder on a counter it can feel a little unsteady. Unless you have a stand, we recommend laying the grinder down on it's side until you get accustomed to it. (We do sell a Smol Stand separately on our website)
- Due to the size & format of this grinder usage is best in a 2 handed bicycle movement - base supported grinding can be done, but with the Smol it's not as convenient a method as it is with our larger format grinders.
- Silicone bands can be removed if you prefer the feel of metal, and have grippy hands! The bands are tight, but will stretch on/off.
- The stainless steel jar is quite strong, and can resist downward bonking on a surface to clear the grounds from the burr - we use a padded surface (usually a towel) 6 months of this and our grinder jar has no marks or dents.

## Approximate Brew Settings:

There are so many different methods, and parameters in brewing coffee, but on the Smol, espresso is between 375 - 500 VBM. Fine Filter - about 1000 VBM. VBM is a powerful number, and the thumbnail is that burr gap is about 60% of VBM on a cone burr so you can do the math when you're dialing in your method.

# Orphan Espresso