

Baratza Grinders

I have been asked to rate and review the entire line of Baratza grinders with a critical eye. I've put the grinders through a variety of tests, and come up with an experimental scoring system (subject to review and changes) to properly gauge these grinders.

This document's purpose is to detail the capabilities of the Baratza Grinder range, to give you a blueprint on how to test the grinders for your own use, and to provide a grading mechanism for telling customers which grinders are best suited for various tasks.

I've tried to make these tests as simple as possible to reproduce. In addition, we've kept all testing material to those things typically found in most homes, including basic scales, sieves, sugar, salt, pepper (for size comparisons), and relied a lot on common touch.

Microns are talked a lot, but keep in mind the human eye can see something 40 microns wide (unaided), and that is also the width of a human hair - use that as a baseline.

Photographs showing grind sizes in comparison to other items are provided to help determine correct grind particle sizes for various grinding needs.

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The Baratza Grinder Lineup

Baratza currently offers five grinders that provide a range of pricing and abilities. They include:



Baratza Maestro Grinder: The company's entry level grinder, featuring conical burrs, a mechanical on/off switch and a removable bins hopper (can be used with Baratza's portaholder). Capable of moka grind to press pot grind (and pressurized portafilter espresso grinding.)



Baratza Maestro Plus Grinder: Very similar to the Maestro, this grinder includes a 60 second timer switch and a second way to grind via front-mounted microswitch. It also has a weightier base made out of brushed metal. Capable of moka grind to press pot grind (and pressurized portafilter espresso grinding.)



Baratza Virtuoso Grinder: Features a different burrset from the Maestro line, and much more detailed features, including a soft-press microswitch up front, more brushed metal detailing and more selections on the grind. Baratza's lowest-priced grinder capable of true espresso grinding.



Baratza Virtuoso Preciso: While similar to appearance with the Virtuoso, this grinder has a unique burrset that can grind up to 2g/sec in some applications. It also features a secondary "micro" grind selection allowing much finer grind particle size control.



Baratza Vario: Developed in conjunction with Mahlkonig, this top of the line grinder has detailed electronic controls, a macro and micro adjustment cam system for grind size, and programmable memories for different grinding times. It has its own portaholder bin, which is included in the box along with the standard grinds bin. NB I did an initial adjustment on the Vario to modify the grind a bit coarser.

Testing & Types

Grinding for various types of coffee brewing methods is demanding, and usually the finer you go, the more crucial the control is over particle sizes, amount of fines, and more.

Particle sizes of as little as 225 microns are needed for espresso. For press pot, up to 1300 microns; for drip, around 700-800 microns.

Most testers cannot evaluate the particle sizes via specific measurements, as specialized tools (calibrated sieves, for eg) are required to do so. A more common way to evaluate grind sizes is visually and by feel, so we're including notes on what to feel for smaller particle sizes. For some main types of grind sizes, I include some macro photography comparing grind particles to other household items.

Keep in mind, the human eye can see something as small as 40 microns wide, unaided. That also happens to be the width of a human hair. Use that as a baseline.

A scoring system has been set up to give these grinders simple evaluations with which consumers can be properly educated.

Grind output has been scored on three criteria: overall evenness of grind, amount of visible fines, and repeatability (ie, going up and down on the grind selection dial, and finding your old grinding setting). Each score is worth 5 points.

The types of grinds evaluated include:

Turkish Grind: typically the finest grind used in any coffee brewing. Comparable to talc powder or icing sugar.

Espresso Grind: used for pump-driven espresso machines without pressurized portafilters or filter baskets. Comparable to fine ground table salt - perhaps even finer.

Moka / Pressurized Espresso Grind: used for stovetop mokus, pressurized filter basket (or portafilter) espresso, and steam driven espresso machines. Comparable to table salt, perhaps a bit coarser.

Fine Drip: comparable to refined sugar in texture, perhaps a bit finer. Used for pourover, auto drip, siphon when cloth and some paper filters are used.

Normal Drip: comparable to refined sugar in texture. Used with most paper filter brewing methods.

Coarse Drip: comparable to hand-ground pepper, coarse salt, and a bit coarser than refined sugar.

Press Pot: comparable to coarse ground pepper or salt, or Demerara sugar.

The grind is very important to proper extraction in various types of brewing methods. Some grinders are more capable than others. Using an improper grind will result in over (or under) extraction, or in the case of espresso, too fast (or stalled) espresso pulls.

Grind Size & Accuracy



Grind Size and Accuracy Testing

Turkish Grind

The Turkish (or ibrik) grind is the finest grind used in coffee brewing. It is essentially a powder, comparable to talc powder or icing sugar.

This grind can be tested with a fingerprint groove test. Take a sample of the grind and rub it gently between your fingers. Most of the grind particles should stick between the grooves of your fingers, and the coffee's texture should be powdery.

This is a very difficult grind for most electric grinders to achieve, as the burrs must pretty much be touching (when empty) and be very consistent in their rotational mode. Micron size is as low as 100 microns or less.

I tested three of Baratza's grinders for this setting (Maestro cannot do this grind). The following are the scores and settings to achieve this grind.



Turkish grind, compared to icing sugar. At this small particle size, both the coffee and sugar tend to clump.

Grinder	Setting	Evenness Score ¹	Visible Fines ²	Repeatability ³
Maestro	N/A	N/A	N/A	N/A
Virtuoso	5	4	4	3
Preciso	Macro: 5, Micro F	4	5	3
Vario	Macro: 1, Micro: 2	5	5	4

Espresso Grind

For espresso grind particle sizes (around 200-250 microns on average), the simplest test I know is the fingerprint groove test.

Take a sample of the grind and rub it gently between your fingers. If brown residue sticks within the grooves of your fingerprint but the coffee still has some granular texture (like extra fine sand), the coffee is fine enough (or even too fine) for espresso brewing.

Visually, espresso grind compares well to fine table salt. It may be slightly smaller in granular size, but to touch they are very similar.

I tested three of Baratza's grinders for this setting (Maestro cannot do this grind). The following are the scores and settings to achieve this grind. Vario numbers reflect a modified grinder.



Espresso grind is very similar in texture to final table salt. The granules may be slightly smaller than salt, but feel similar to the hand.

Grinder	Setting	Evenness Score ¹	Visible Fines ²	Repeatability ³
Maestro	N/A	N/A	N/A	N/A
Virtuoso	11	3	2	2
Preciso	Macro: 9, Micro G	3	4	2
Vario	Macro: 1, Micro: 12	4	4	4

1. Evenness was examined visually and with a 1:1 macro photograph; samples were from a 25g grind sample. Higher score = more even.

2. Visible Fines were examined three ways: visually, with a 1:1 macro photograph and through a calibrated sieve: Higher score = less fines.

3. Repeatability test was done by changing the grind setting from normal drip to the specified setting, and comparing results. Higher score = more repeatable.

Grind Size and Accuracy Testing

Pressurized Espresso

The pressurized espresso grind is in between true espresso and moka pot grind.

The finger rubbing test used with espresso grinding should leave a bit of brown between the fingerprint grooves, but feel more granular to the touch. This grind compares to table salt as well, though it should be a tad coarser to touch.

This grind is suitable for pressurized filter baskets and/or pressurized portafilters because these brewing devices force additional extraction.

I tested four of Baratza's grinders for this setting. The following are the grinder's scores and settings to achieve this grind.

Please note, this test reflects the Baratza Vario's results AFTER I did a modification to the grinder (as outlined in the grinder's manual) to make the overall range of grinds a bit coarser.

Grinder	Setting	Evenness Score ¹	Visible Fines ²	Repeatability ³
Maestro	1	2	2	4
Virtuoso	13	3	3	2
Preciso	Macro: 12, Micro F	3	3	3
Vario	Macro: 2, Micro: 20	4	4	4

Moka Pot

A moka grind is usually finer than drip, but not as fine as espresso.

The finger rubbing test should only leave minimal traces of brown between the grooves of your fingerprint, and that is from any smaller fines in the grind, not the entire grind.

This grind is used in stovetop espresso brewers, steam driven espresso machines, the Krups Moka Brew and can be used in the Aeropress, when using paper filters (hard to press though).

I tested four of Baratza's grinders for this setting. The following are the grinder's scores and settings to achieve this grind.

Please note, this test reflects the Baratza Vario's results AFTER I did a modification to the grinder (as outlined in the grinder's manual) to make the overall range of grinds a bit coarser.

Grinder	Setting	Evenness Score ¹	Visible Fines ²	Repeatability ³
Maestro	3	3	3	4
Virtuoso	15	3	3	3
Preciso	Macro: 14, Micro H	3	3	4
Vario	Macro: 4, Micro: 2	4	3	4

1. Evenness was examined visually and with a 1:1 macro photograph; samples were from a 25g grind sample. Higher score = more even.

2. Visible Fines were examined three ways: visually, with a 1:1 macro photograph and through a calibrated sieve: Higher score = less fines.

3. Repeatability test was done by changing the grind setting from normal drip to the specified setting, and comparing results. Higher score = more repeatable.



Grind Size and Accuracy Testing

Fine Drip

Fine drip is used for cloth and some paper filters in most manual and automatic filter brewing processes.

It can be used for manual pourover, auto drip, siphon brewing and aeropress. It can also be used (in a pinch) for moka brewing, though the extraction will typically be weak.

To the touch, fine drip is comparable to refined sugar, perhaps a bit finer to the touch. There should be little or no residue between your fingertip grooves if you rub the particles between your fingers.

I tested four of Baratza's grinders for this setting. The following are the grinder's scores and onboard settings to achieve this grind.

Please note, this test reflects the Baratza Vario's results AFTER I did a modification to the grinder (as outlined in the grinder's manual) to make the overall range of grinds a bit coarser.

Grinder	Setting	Evenness Score ¹	Visible Fines ²	Repeatability ³
Maestro	13	3	3	2
Virtuoso	17	3	3	3
Preciso	Macro: 20, Micro G	4	3	4
Vario	Macro: 5, Micro: 20	4	3	5

Normal Drip

Normal drip grind is used for most paper filter brewing, including manual pourover, auto drip, siphon brewing with paper filters, etc.

This is also the most common grind for cupping, the professional brewing style for evaluating coffee. This grind is only slightly coarser (with less fines) than a fine drip grind. It can be compared to refined white sugar, as the granule size of the sugar's cubic particles is very similar to normal drip coffee grounds both visually and in texture.

I tested four of Baratza's grinders for this setting. The following are the grinder's scores and onboard settings to achieve this grind.



Normal drip grind is very similar in size to refined white sugar. Sugar particles are cube shaped, and coffee is more erratic in size.

Grinder	Setting	Evenness Score ¹	Visible Fines ²	Repeatability ³
Maestro	15	3	3	3
Virtuoso	19	3	3	3
Preciso	Macro: 22, Micro F	4	3	4
Vario	Macro: 6, Micro: 17	4	4	5

1. Evenness was examined visually and with a 1:1 macro photograph; samples were from a 25g grind sample. Higher score = more even.

2. Visible Fines were examined three ways: visually, with a 1:1 macro photograph and through a calibrated sieve: Higher score = less fines.

3. Repeatability test was done by changing the grind setting from normal drip to the specified setting, and comparing results. Higher score = more repeatable.

Grind Size and Accuracy Testing

Coarse Drip

Coarse drip grind is used for most permanent filter brewing using gold-plated, steel, or other metal filters in manual pourover, auto drip, siphon brewing and other filter brew methods.

This grind is noticeably coarser than a fine drip grind, but not by much. What is important about this grind (along with press pot grind) is the amount of fines in the grind, or better stated, the lack thereof. Because the permanent filters allow most fines to pass through to the cup, the less there are, the cleaner the brewed coffee will be.

The grind size is comparable to raw sugar, perhaps a bit finer.

I tested four of Baratza's grinders for this setting. The following are the grinder's scores and onboard settings to achieve this grind.

Please note, this test reflects the Baratza Vario's results AFTER I did a modification to the grinder (as outlined in the grinder's manual) to make the overall range of grinds a bit coarser.

Grinder	Setting	Evenness Score ¹	Visible Fines ²	Repeatability ³
Maestro	18	4	3	3
Virtuoso	20	3	3	3
Preciso	Macro: 25, Micro G	4	3	4
Vario	Macro: 7, Micro: 15	5	4	5

Press Pot

Press pot brewing is a long immersion brewing method that requires a coarse grind with little fines to avoid any kind of over-extraction.

Further, manually pushing the grinds with a press pot's plunger is much more difficult with a finer grind, as water flow through the screen is restricted by the fines. Fines are impossible to avoid, unless you sieve the coffee before brewing, but a good grinder will reduce the amount of fines in the sample.

This kind of grind is comparable to very coarse salt or pepper ground from a hand mill, or demerara sugar.

I tested four of Baratza's grinders for this setting; the test below includes the modified Vario grinder. The following are the grinder's scores and onboard settings to achieve this grind.



Here, a press pot grind is compared to rough ground pepper (on top) and coarse ground salt (on bottom).

Grinder	Setting	Evenness Score ¹	Visible Fines ²	Repeatability ³
Maestro	30	2	1	4
Virtuoso	28	4	2	4
Preciso	Macro: 33, Micro G	4	3	4
Vario	Macro: 10, Micro: 19	3	3	4

1. Evenness was examined visually and with a 1:1 macro photograph; samples were from a 25g grind sample. Higher score = more even.

2. Visible Fines were examined three ways: visually, with a 1:1 macro photograph and through a calibrated sieve: Higher score = less fines.

3. Repeatability test was done by changing the grind setting from normal drip to the specified setting, and comparing results. Higher score = more repeatable.

GRIND SAMPLES - ESPRESSO

In this test, I checked to see what settings the grinders required to product a 45ml shot in 25 seconds using between 18 and 19 grams of ground coffee.



As a very pleasant surprise, the Virtuoso needed us to go up 10 full clicks from the 1 setting to get a proper espresso grind. On setting 11, I ground out 19g in approximately 25 seconds giving us our target espresso shot.

I did notice however that initially going from 5, to 10, to 11 gave us too fine a grind. But grinding at 20, then moving to 15, 10, and then 11 gave us a proper grind. This means repeatability could be a problem.

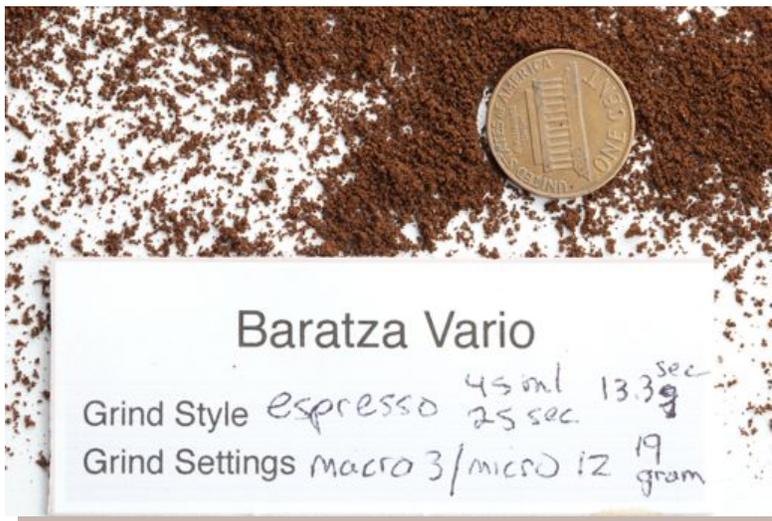
The Preciso has a different burr set from the Virtuoso standard model, and cuts coffee much quicker. I noticed this in testing, when the grinder gave us a 19g sample in just 14 seconds. Grind particles appeared more even than the Virtuoso standard grinder.

There's a lot of headroom in grinding for espresso (ie, you can grind a lot finer). I found that Macro 9, Micro G setting worked great for our parameter brew. I experienced similar problems as I had with the Virtuoso, going from finer to coarser in the settings.



The Vario is the only grinder in this lineup that lets you custom adjust your starting "set point" for grind fineness, via an included fancy allen wrench. I used the grinder as is, "out of the box" for these photos, but modified the grinder for scoring tests.

This shows the pre-modified numbers. After modifying the grinder, our setting was Macro 1, Micro 12 for espresso delivering 45ml in 25 seconds from 18.5g of coffee.



GRIND SAMPLES - PRESSURIZED ESPRESSO

For this test, our baseline was the finest grind the Baratza Maestro could do out of the box (and then I compared that to similar grinds from the other main grinders).



The Maestro at a "1" setting (the lowest the grinder could go) was our baseline for pressurized espresso. I brewed two samples, one with a Solis SL-70, one with a Mypressi Twist (both with pressurized baskets) to taste the results.

It's hard to gauge taste influences with a pressurized basket, so I didn't do so. Instead, our main test was visual (fines etc) and speed. The Maestro did 25g in 32 seconds. This grind was very clumpy coming out of the grinder.

The Virtuoso was very close visually to the Maestro in terms of fines produced, but eeked out a bit on consistent particle sizes. And more importantly, the grind was nowhere near as clumpy as the Maestro was coming out of the chute.

I found going back and forth between turkish and pressurized espresso vs. press pot to pressurized espresso lead to inconsistent results. It ground our 25g sample in 26 seconds.



The Preciso was our best surprise of this and several other tests. Speed was quicker than the Vario (16 sec for 25g, vs 17 seconds for the Vario), but the Vario beat it quite a bit on repeatability; I had a similar problem to the one I had with the Virtuoso - going up on the grind fineness would give slightly different results compared to going down.

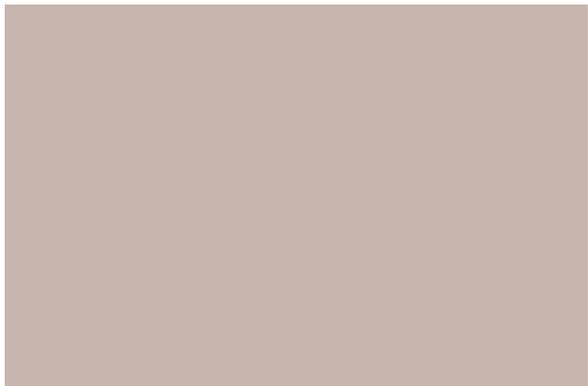
Grind quality was quite good.

The Vario leads the pack in all except speed in this grind. Fines were in check, evenness of the grinds were great, and I had no problem zooming up and down the grind selections, coming back to Macro 3 / Micro 8 and getting the same results. NB - this photo and test was done BEFORE I modified the Vario (with manufacturer included hex wrench) for doing an overall coarser grind.



GRIND SAMPLES - NORMAL DRIP

For this test, I measured visual flow rate from coffee run through a calibrated grinder, then matched that flow rate (using the identical weight of coffee) on all four grinders.



The Maestro was tested and photographed for normal drip, but the photo is missing. Notes say results were middle of the road (3s across the board) and a setting of 15 was used. I do not have the speed numbers, but it was probably around 1/g a second.

The Virtuoso matched the Maestro in this grind test on the numbers (3s), but beat it in speed. It does have a different burr set, but I were surprised to find that a macroscopic photo exhibited roughly the same grind, and same amount of fines.

It took 21 seconds to grind the sample, resulting in a grinding speed of 1.15g per second. The photo shows a very even grind overall.



The Preciso's burr group really started to shine at this setting. Fines were very minimal, speed was fasted in the test (11 seconds for 25g, or 2.2g per second) and repeatability was almost bang on at this setting. The photo shows very even grinds.

These numbers are important because this leads to a more even extraction in the cup - less fines, more even grind = better, more consistent extraction ratios.

This photo reflects pre-adjusted Vario grinding. Our final test on the modified Vario was Micro 6, Macro 17. Speed was identical - 25g in 13 seconds, or just over 2g/second. This is very fast for a home grinder.

The Vario continues to be a repeatability king, and starts scoring 5s as we move up the grinder range. Except for speed, this is the best grinder in class, rivaling \$1500 pro grinders. This was a great grind for drip coffee.



GRIND SAMPLES - PRESS POT

1200-1300 microns (1.2mm) is the normal particle size for press pot in N. America, and can be easily gauged in macro photography. Initially, the Vario couldn't do this grind out of the box. We fixed that.



This test was the only time the Maestro was not the slowest grinder in the roundup - 12 seconds to do 25g (or 2.1g per second).

The test did show particle sizes all over the map, and a lot of fines produced.

Keep in mind, this is still much better than budget burr grinders or blade grinders, which would score zeros.

The Virtuoso is both good and bad at this setting. The photograph may show that particle sizes are more consistent even compared to the Preciso, but there were an excessive amount of fines as well, which can result in a more dirty, muddy cup.

Grind time was respectable, but interestingly enough, slowest in the test, even slower than the Maestro.



This is the only testing round where the Preciso beat the Vario in most of the tests (speed, consistency, fines). The grinder is a speed demon, doing 25g in about 8.5 seconds, or 2.3g per second.

Grind particle consistency was fairly good. There were some larger chunks (all grinders do this), but overall, our target size of 1200 microns was well met. Fines were probably best in class.

Out of the box, the Vario could not do a 1200-1300 micron size particle grind for press pot. It was around 1100 max.

After doing an adjustment as described in the Vario Manual with a supplied hex wrench tool, I was able to get a 1250 to 1300 micron size at near the coarsest settings. Consistency in grind went down a bit, but not much. Speed was fast; fines were middle of the road, not surprising given this is the max setting for the grinder.



GRINDS LEFT IN GRINDER

We tested all four grinders by two methods - the first is a more simple test, and the second more thorough.

The first test (Before/After) was done by putting a specific amount of coffee into the hopper and grinding it, measuring whole bean vs. grounds. In this test, I purposely did not pre-clean the burr group or insides. The reason for this is a lot of coffee will get into the internal nooks and crannies of the burr group, and will never make it to the cup; however, if you grind for the first time in a completely cleaned grinder, these nooks will eat up a few grams of your whole bean coffee.

The second test was started with a completely clean grinder, nooks, crannies, everything. I filled the hopper full, ground out 25g of coffee, then emptied the grinder of whole beans (very carefully). I took a mini vacuum and, along with a brush, cleaned out every trace of ground coffee. I collected it all and measured it.



The amount of ground coffee left inside a grinder can be detrimental to overall cup taste, especially in the home because people often only grind once or twice a day. As little as 2 or 3 grams can detract from the quality of a shot of espresso.

For drip and press, this is less of an issue, but some grinders can leave as much as 10 grams of stale, old ground coffee inside - and that can negatively impact your next brewed cup.

Grinder	Maestro	Virtuoso	Preciso	Vario
Espresso Before/After	1.7g	1.2g	1.1g	0.4g
Espresso Vacuum	3.7g	3.1g	3.3g	2.7g
Drip Before/After	1.6g	1.1g	0.9g	0.4g
Drip Vacuum	3.2g	2.9g	3.0g	2.5g
Score	3	4	4	5

These results are very good, and exceptionally good when you compare them to a typical doser espresso grinder (for instance, the \$1600 Anfim Super Caimano Titanium Burr grinder leaves almost 10g of ground coffee in its chute between grinding sessions). Frankly anything under 2 grams is a good score, and 1 gram or less is exceptional.

The Vario lead the pack, showing only a 0.4g variance between before and after weight when grinding samples - and that was my worst measurement; on several attempts, the Vario left less than 0.2g inside the machine. This makes it ideal as a cupping grinder, and for espresso usage.



GRINDING SPEED

How fast or how slow a grinder works isn't very important for home use under most circumstances.

There are some circumstances where the grinder's speed is important. Espresso grinds should always be done as quick as possible due to the escape of volatile gases like Co2. If you are using a grinder for cupping evaluations, speed is also important. Lastly, in commercial use, nothing less than 2g/sec is an acceptable speed: at 2g/sec, the grinder can grind enough coffee for a 3 cup press pot in about 10 seconds.

My test here was pretty simple - measure in 19g/25g of coffee into an empty hopper, and time the grind. This test isn't the best, because there is some whole-bean hopping in the hopper once most of the coffee is ground - in other words, the speeds are probably a bit faster with a full whole bean hopper.



In the home you probably won't mind grinding speeds of around 0.8-1g per second; after all, one benchmark grinder for espresso - the Mazzer Mini - grinds at around that speed. But faster grinding is always better, and in some applications, anything less than 2g/sec is too slow to be useful.

Those applications include cupping grinding, grinding whole bags of coffee, and grinding for espresso.

Grinder	Maestro	Virtuoso	Preciso	Vario
Espresso Speed (19g)	N/A	21 seconds	13 seconds	14 seconds
Drip Coffee Speed (25g)	25 seconds	22 seconds	11 seconds	13 seconds
Press Pot Speed (25g)	12 seconds	16 seconds	8 seconds	9 seconds
Score	2	3	5	4

The Maestro was the slowest grinder overall, but was actually faster than the Virtuoso on the Press Pot grind.

The Preciso was the surprise of the test, beating out the Vario which I didn't expect. For cupping coffees, this grinder churns out the good stuff at a clip of around 2.2g per second. It's even faster for press pot, getting up to around 2.5g per second.

The Vario was very consistent, and didn't lag behind the Preciso that much. Both the Preciso and Vario would do fine on grinding whole 12 or 16oz bags of coffee, as well as getting the job done quick for espresso. When you think about it - these two grinders are actually twice as fast as a Mazzer Mini when it comes to output.



USABILITY

Usability of a grinder is very important - the more comfortable and easy a grinder is to use, the more likely a consumer will use it correctly. In this test, we looked at: how easy the grinder is to understand without reading the manual; how the controls are positioned; how loud the grinder is; how easy it is to use and remove the bin; how the controls work; how easy it is to disassemble and clean; and several other minor factors including weight, materials used, visibility of controls and more.

For each grinder, we have detailed notes on usability pluses and minuses. We've assigned three scores for each grinder: ease of use, build quality, overall ability (including range of features). These scores are from 1 to 5, with 5 being best in class.



Usability can make or break a grinder. If a consumer finds the product confusing, then no matter how robust and feature rich the grinder is, if it's not being used, it is a bad grinder.

For these tests, we scored a variety of things, from how slippery-slidey the grinder is on the counter, to how easy a neophyte home coffee enthusiast finds it to "get up to speed" with the grinder out of the box.

Grinder	Maestro	Virtuoso	Preciso	Vario
Ease of Use	3	4	3	3
Build Quality	2	4	4	5
Overall Ability	2	3	4	5

The Maestro's scores aren't bad considering the materials used and how light the grinder is. It scores fairly low because it is so light, and has a limiting on/off switch only.

The Virtuoso is much better built and the soft-touch front button is a plus. It is heavy on the counter (a good thing) and is fairly quiet as well. Both it and the Preciso share similar build quality.

The Preciso loses a point on ease of use only because a few of my test subjects found the micro-adjust confusing. I certainly didn't in the testing.

The Vario naturally scores highest as it has the most features, great build quality and is a very versatile grinder. It actually scored lowest on Ease of Use though (garnering a 2) because of how confusing the front panel is for first time users; but it gained back a point because it's Portaholder is the only one that didn't require a bit of side-turning motion to fit a portafilter into (the portaholders for Virtuoso/Preciso needed a bit of a squeeze to fit in).



Baratza Maestro

"The Baratza Maestro is the lowest priced grinder that I feel confident in recommending to consumers."

"For any grinding needs outside of espresso, the Baratza Maestro is very capable."

Thoughts on the Grinder

The Baratza Maestro is the lowest priced grinder that I feel confident in recommending to consumers.

That said, it does have some drawbacks. The most notable one is that it cannot do a grind for proper espresso from a pump driven machine with a standard filter basket. It also cannot do a turkish grind. It does however have a lot of headroom beyond press pot grinding (ie, press pot was tested at 30 on the selector dial - there were still 10 clicks of coarser grinds available).

For other grinding needs, including pressurized espresso (either via filter or portafilter), stovetop mokas, steam espresso machines, drip, siphon, manual pourover, aeropress, and press pot, the grinder is very capable. In the middle grinds (drip, siphon, aeropress), the grinder's output is good on fines, good on particle sizes, and good on repeatability.

By the time you get to press pot though, the grind is very uneven and there are an excessive number of fines. It's not nearly as bad as other budget grinders, and nowhere near as bad as blade grinders, but you will notice a muddier cup when brewing press pot. Solutions to this are very simple - get an inexpensive kitchen fine mesh sieve (like the small cone style ones for \$5 at kitchen supply stores) and briefly sieve your coffee, or use a press like Espro's new dual filter press, which results in a cleaner cup.

Construction quality is adequate, with most of the money going into the burr set, burr housing, and motor. The chute has been upgraded since this product launched, and as a result, the grinder retains less than 2grams of ground coffee between uses - a very big positive.

I feel the grinder's price point is good, but could be better for what you get - not having an espresso grind, and having a very inconsistent press pot grind could require a lower price point.



Baratza Virtuoso

"The Baratza Virtuoso is a great middle-priced grinder that is capable of all home grinding needs, from turkish to press pot."

"The grind quality for the middle range grind settings was superb with a lot of room to adjust depending on the type of coffee and brewing method."

Thoughts on the Grinder

The Baratza Virtuoso is a great middle-priced grinder that is capable of all home grinding needs, from turkish to press pot.

In my testing, fines and consistency were good to very good in most grinding categories except for espresso and press pot. For espresso, I found there were an excessive amount of fines which required some finesse on dose, tamping et cetera to get a good shot. Still, I found this grinder produced more potential for channeling in espresso than any of the other espresso-capable Baratza grinders.

For press pot, there were a larger number of fines as compared to the Preciso or the Vario, but it was within what I'd call an acceptable range.

The grind quality for the middle range grind settings was superb with a lot of room to adjust depending on the type of coffee and brewing method. Results were repeatable, consistent, and resulted in very good extraction numbers.

I did notice some inconsistencies with this grinder (and the Preciso) when trying to dial in an espresso grind. If I started at turkish (about 5 on the dial) and adjusted to 11, the grind would be too fine for proper espresso extraction. But if I started at drip (around 20) and adjusted down, 11 would be just fine for my test shot parameters.

This grinder has a different burr set from the Maestro line, and seems to have more torque as well. It is faster than the Maestro at all settings, save for press pot.

Construction and build quality is first rate. It feels and looks like a serious kitchen tool. The microswitch up front has a nice tactile feel and works well with the portaholder and one handed grinding.



Baratza Preciso

"The Preciso's unique burrset led to a very clean grind that was fastest in its class"

"In fact, just for espresso grinding, the Preciso grinder gives you a whopping 20 additional degrees (clicks) of grind control compared to other grinders in this price range."

"The Preciso's burrs deliver a very clean grind with minimal fines; if you want a 700 micron sized grind for drip coffee, that's what you're gonna get."

Thoughts on the Grinder

I was thoroughly impressed with the new Baratza Virtuoso Preciso grinder during our testing. The unique burrset led to a very clean grind that was fastest in its class - even faster than the Baratza Vario.

This grinder incorporates the idea of a micro and macro grind adjustment first seen in the Baratza Vario. The grinder has about 30 usable click settings (from 5 to 35) but the micro adjuster gives you 11 additional micro settings for each major (or macro) click. For espresso this is especially important - allowing you to fine tune your grind to achieve better extractions. In fact, just for espresso grinding, the Preciso grinder gives you a whopping 20 additional degrees (clicks) of grind control compared to the Virtuoso.

The Preciso has new burrs designed and manufactured in Liechtenstein and they promise two things: faster speeds, and less fines. The grinder delivers: you get a very clean grind with minimal fines; if you want a 700 micron sized grind for drip coffee, that's what you're gonna get.

I also liked the speed and was surprised to see that this grinder even beat out the Vario in grinding speed tests. If it had a digital timer, I wouldn't hesitate to recommend it as a cupping grinder for coffee labs, roasters, and in coffee producing nations (but I cannot do this, since the mechanical grinder makes grinding more variable).

My most pleasant surprise was how this grinder did in press pot grinding tests: it actually beat the Baratza Vario on the consistency size. Once you move to 1200, 1300 (1.3mm) size chunks of coffee, most burrs cannot keep up and let a wide variety of particle sizes (and some fines, via friction with larger particles) pass through - the Preciso scored a solid 4 in my consistency test, which puts it on par with \$1500 commercial grinders.



Baratza Vario

"The Baratza Vario is the best and most advanced multipurpose grinder a consumer can buy for their home"

"The combination of features on this grinder... make it a good investment for someone wanting the ultimate home grinder."

"Technically, the Vario is a stepped grinder, but the amount of precise control rivals stepless grinders."

"The Vario is well suited for light restaurant use for siphons & press pots, and as a cupping grinder in labs, roasterys, and even for coffee evaluation at origin."

Thoughts on the Grinder

In my testing, the Baratza Vario proved to be the best overall grinder in Baratza's lineup, in some ways quite outdistancing the rest of the pack (especially on repeatability). The grinder was a clear winner on build quality, accessories, grind consistency, fines control and repeatability. I can state that this is the best and most advanced multipurpose grinder a consumer can buy for their home today.

I did have to do an adjustment to the grinder out of the box. Baratza provides a specialized tool for calibrating the grinder, and I had to do this one full macro click coarser to achieve a proper press grind. After this adjustment, the Vario could do a proper turkish grind (125microns) at a 1/5 setting on the grind dial and a good press pot grind (1200-1300microns) at 10/20 setting.

The combination of features on this grinder, including the unique macro/micro grind setting, the precise digital controls, the speed of grinding (2g/sec or faster for drip and press) the lack of ground coffee left inside the machine between uses, and the overall build quality make it a good investment for someone wanting the ultimate home grinder.

Technically this grinder is a stepped grinder, but the amount of precise control the macro and micro grind selections offer can rival most stepless grinders. Being "stepped" offers one distinct advantage: it is easy to jump around between your favorite grind settings but still be able to get back to your specific dialed in setting for a specific type of grind.

The only issues I had with the Vario was adjusting it out of the box, and how the evenness and fines dropped a bit at the press pot setting.

The Baratza Vario grinder is very precise. It keeps the amount of fines produced under control. It is built well and should see a decade or more use in a busy coffee drinking home without much worry. It is also well suited for light restaurant use (for siphons & press pots), and as a cupping grinder in labs, roasterys, and even at origin.



Baratza Grinder Scores



There are fifteen scores out of five, for a maximum score of 75 points. We've used only the major grinding settings (espresso, regular drip, press pot) to calculate the ratings - there is the option to use more of the grind settings to get a score of 100.

	 Maestro	 Virtuoso	 Preciso	 Vario
Evenness Espresso	0	3	3	4
Visible Fines Espresso	0	2	4	4
Repeatability Espresso	0	2	2	4
Evenness Regular Drip	3	3	4	4
Visible Fines Drip	3	3	3	4
Repeatability Drip	3	3	4	5
Evenness Press Pot	2	4	4	3
Visible Fines Press Pot	1	2	3	3
Repeatability Press Pot	4	4	4	4
Grinds Left	3	4	4	5
Grinding Speed	2	3	5	4
Ease of Use	3	4	3	3
Build Quality	2	4	4	5
Overall Ability	2	3	4	5
Overall Impression	2	3	5	5
Total Score	30	47	56	62
Average Score	2	3.13	3.73	4.13