

V/S4

USER MANUAL



varia[®]
GRIND DIFFERENT

1. This appliance is intended for household and similar use, including staff kitchens in shops and offices, farm houses, hotels, motels, bed-and-breakfasts, and other residential-type environments.
2. This appliance is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless supervised or instructed by a person responsible for their safety.
3. Children must be supervised to ensure that they do not play with the appliance.
4. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons to avoid a hazard. Fully insert the plug into the outlet and ensure good contact. If an extension socket is used, it must comply with applicable national standards.
5. Disconnect the power when leaving the appliance unattended. If the product emits abnormal noise or odor, becomes excessively hot, or malfunctions, stop use immediately, switch it off, and disconnect the power.
6. To clean surfaces that come into contact with food, follow the instructions in sections 5.6 Daily Cleaning (after use and daily maintenance), 6.4 Step-by-Step Disassembly and Cleaning, and 7.3 Ion Device Maintenance. Use the brush included in the product gift box to remove residual powder, or use cleaning products such as grinder cleaning tablets to clean the machine. After use, wipe away any remaining coffee oils with a dry cloth or paper towel.
7. Do not supply the appliance through a lampholder outlet. The total rated current of appliances connected to an extension socket must not exceed that of the original fixed socket or circuit. Do not use the product near flammable or explosive materials. Do not disassemble the appliance, modify its internal wiring, components, or protective devices, pull the power cord when unplugging, or replace the fuse with conductive materials or one exceeding the specified current rating.

Before using the **Varia VS4 Grinder**,
please read and understand this manual carefully to prevent damage
to the appliance and ensure a safe, high-quality grinding experience.

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About Us

VARIA BREWING LIMITED



We have designed and developed Varia products to enhance the brewing experience in your home and encourage experimentation of brew methods enabling the user to gain a greater understanding and appreciation of the coffee experience.

Every coffee is unique, so we partnered with coffee masters to design products that allow you to explore the world of coffee & tea in your home like never before.

1. Safety Measures and Precautions for use

Please take time to familiarize yourself with the Varia VS4's safety measures and operational guidelines before operating the grinder. The VS4 contains a powerful motor and sharp burrs; improper use can cause injury or damage.



DANGER!

ELECTRICAL SAFETY: Failure to follow these instructions/guidelines can result in electrical shock, fire, or cause serious injury and/or death.

1. **POWER SUPPLY:** Ensure your power source is compatible with the Varia VS4. The grinder is designed for use with AC mains input: 100-240V~, 50/60Hz. Do not connect the unit through aftermarket adapters or incompatible voltages. Using incorrect power sources may result in electrical shock, damage to internal components, or fire. Use only grounded and certified wall sockets.
2. **DRY ENVIRONMENT:** Place the VS4 grinder body and power cord in a dry area, away from water, other liquids, or heat sources. Do not operate with wet hands. Never immerse the grinder, power cable, or plug in water. Always ensure the unit is fully dry before plugging it into a mains outlet.
3. **SHARP BURRS:** The grinding burrs are extremely sharp. **Always unplug the grinder** before cleaning, servicing, or accessing the burrs. Never touch the burrs when the grinder is plugged in. Use the provided brush for cleaning burrs; do not use fingers or metal tools near burrs.
4. **HOPPER AND FINGER GUARD:** Always operate the grinder with the hopper and its finger guard securely in place. The finger guard is a dome installed in the hopper to prevent accidental contact with the burrs. Do not insert fingers or objects into the hopper or grind chute at any time. Removing the finger guard is at your own risk – if removed, be especially cautious and keep the grinder away from children. Removing the finger guard will void your warranty.
5. **CLOTHING AND HAIR:** Keep long hair, jewellery, and loose clothing away from the hopper opening and burr chamber. They can be caught by the rotating burrs, even when burrs are not moving at full speed.
6. **OPERATING CONDITIONS:** Use the grinder on a stable, flat surface. Do not leave the appliance unattended while it is running. Keep the power cord route clear to avoid tripping or pulling the grinder off surfaces.
7. **QUICK-RELEASE COLLAR SAFETY:** **Never attempt to remove the hopper or grind chamber while the grinder is running or plugged in.** The VS4 features a quick-release collar that automatically cuts power when unlocked for safety, but you should still power off and unplug before disengaging the collar. Only remove the grind chamber when the burrs have come to a complete stop and power is disconnected.
8. **NO FOREIGN OBJECTS:** Check your coffee beans for foreign objects (like stones or metal) before grinding. Hard foreign objects can damage the burrs or motor. **Do not place any pre-ground coffee, spices, or other food items** into the grinder – it is designed for roasted coffee beans only.

9. **NO MODIFICATION:** Do not modify or tamper with the grinder's internal components, including the active ionisation needle or electrical parts. Removing the bottom cover or any internal panels will void the warranty and could lead to electric shock or damage. Repairs should only be performed by authorized service technicians.
10. **THERMAL PROTECTION:** The VS4 is equipped with temperature protection logic to prevent overheating. If the grinder stops during heavy use, it may be engaging its thermal cutoff. In such a case, **do not bypass or tamper with this safety feature.** Allow the grinder to cool down for at least 90 seconds after any 60-second continuous grinding session. This prevents overheating of the motor and gearbox.
11. **CLEANING SAFETY:** Always turn off and unplug the grinder before cleaning the burrs, hopper, or ionisation system. When cleaning the **active ionisation needle**, use only a dry, soft brush (such as the one provided). **Do not touch the ioniser needle with your fingers or any metal objects** – it is a delicate high-voltage component. Keep the ionisation needle dry; never spray water or cleaner directly onto it.
12. **CHILDREN AND PETS:** Keep the VS4 out of reach of children. This appliance is not a toy. Close supervision is necessary when any appliance is used near children. Pets should also be kept away to avoid knocking the grinder over or chewing on cords. Failure to follow these safety precautions can result in electric shock, fire, damage to the grinder, or serious injury. Varia Brewing will not be responsible for damage or injury caused by misuse or failure to adhere to the safety instructions.

2. What's in the Box

When unboxing your Varia VS4 grinder, ensure you have all the following items. If anything is missing, please contact your retailer or Varia Brewing support before use:

- 1 x Varia VS4 Grinder – (53 mm Stainless Steel Conical Burr pre-installed)
- 1 x AC Power Cable – (standard 100–240 V ~ 50/60 Hz regional mains lead)
- 1 x User Manual – (this instruction manual)
- 1 x Magnetic Dosing Cup – (for catching ground coffee under the chute)
- 1 x Silicone Single-Dose Bellows – (attaches to the alloy hopper lid to purge residual grounds after each grind)
- 1 x 5 mL RDT Spray Bottle – (“Ross Droplet Technique” water spray bottle for optionally reducing static, prefilled or fill with filtered water)
- 1 x Cleaning Brush – (soft bristle brush for cleaning burrs and the ionisation needle)
- 1 x Hex Screwdriver & Spare Parts – (includes a hex screwdriver for hopper/outer burr disassembly, and any spare washers, gaskets or springs used in the burr assembly).

Carefully remove all packaging materials. It is recommended to save the packaging and foam inserts in case you need to transport or ship the grinder in the future. Before first use, verify that the burrs are securely installed and no parts are loose from shipping.

3. Product Overview

The Varia VS4 is a precision single-dose coffee grinder that combines innovative design with user-friendly features to elevate your coffee brewing experience. This section provides an overview of the grinder's components and unique technologies:

1. **POWERFUL BRUSHLESS MOTOR & PLANETARY GEARBOX:** The VS4 is equipped with a high-torque 200 W brushless DC motor. A planetary gear reduction drive multiplies torque up to **14.5 N·m**, allowing the 53 mm conical burrs to grind dense coffee beans with ease at low RPMs (150–300 RPM adjustable). The low-speed, high-torque grinding minimizes heat transfer to the beans, preserving delicate flavors and aromatics in your coffee.
2. **53 MM CONICAL BURR SET:** The grinder comes with a 53 mm conical burr made of hardened stainless steel. This larger burr (compared to the VS3's 38/48 mm burr) provides fast, consistent grinding for both espresso and filter brewing. The burr geometry is optimized for uniform particle size distribution. Burr alignment is precisely set at the factory, and the design supports easy burr upgrades or replacements if desired (the VS4 is compatible with Varia's burr upgrade range, allowing users to experiment with different burr designs and materials).
3. **ACTIVE IONISATION ANTI-STATIC SYSTEM:** Inside the grind exit chute, the VS4 features an active ionisation needle (anti-static needle). This built-in ioniser emits charged ions during grinding, which neutralize the static electricity that normally builds up on coffee grounds. By reducing static cling, the ioniser dramatically improves dosing accuracy and keeps your workspace cleaner – less coffee clings inside the chute or to your cup. You'll notice fewer clumps and virtually zero retention of grounds in the machine. (See "Active Ionisation System" in Section 7 for usage and care.)
4. **QUICK-RELEASE HOPPER & SAFETY COLLAR:** The top of the grinder consists of the bean hopper, outer burr, and adjustment collar integrated into one assembly. A new quick-release collar mechanism allows this entire assembly to be attached or detached from the grinder body in seconds. Twist the collar to lock or unlock the hopper/chamber assembly. When locked, it provides a stable, aligned grinding setup; when unlocked, it releases the grind chamber for cleaning or burr access. For safety, the VS4 has an interlock that immediately cuts power to the motor when the collar is disengaged – preventing the grinder from running with the burr chamber removed. This feature makes routine maintenance extremely convenient and safe.
5. **INDEPENDENT GRIND CHAMBER & ADJUSTMENT THREAD:** The VS4 introduces a patented removable grind chamber and hopper assembly with its own integrated adjustment collar. Unlike previous models, the hopper and grind chamber are not permanently attached to the grinder body. This independent adjustment thread design improves alignment and stability, minimizing any grind setting shifts or burr misalignment during use. It also means you can remove the entire top burr chamber for cleaning without losing your calibration. The adjustment mechanism offers micro-stepless control with approximately 0.01mm burr gap change per index mark, giving you a high degree of precision in dialing in your grind size.

6. **ZERO-RETENTION DESIGN:** The grinder's internal geometry and included single-dose bellows are designed for minimal grounds retention. The motor and burr orientation create a near-vertical path for grounds to fall directly into your dosing cup. After each grind, using the bellows (attached on top of the hopper) can blow out any remaining chaff or grounds. This means each dose you grind is fresh, with negligible carry-over from previous grinds.
7. **BUILD AND MATERIALS:** The VS4's body is constructed from precision-machined aluminium alloy and stainless steel components for durability and stability. The robust build reduces vibrations and ensures consistent alignment of the burrs. Despite its powerful motor, the grinder's brushless operation is relatively quiet and long-lasting. The design is focused on longevity and serviceability – most components (burrs, motor, gears, etc.) can be accessed for cleaning or replacement. By integrating sustainable design principles, the VS4 aims to have a long service life, and many parts are user-replaceable to reduce waste.
8. **USE CASE:** With its wide grind adjustment range, the VS4 is suitable for all brewing methods from espresso (fine) to French press or cold brew (coarse). It bridges the gap between the compact VS3 and the commercial-grade VS6, providing a prosumer-level grinder in a home-friendly size. Whether you're pulling espresso shots or brewing pour-overs, the VS4 delivers consistent, flavorful results with each grind.



4. Installation and Setup

Follow these instructions when setting up your Varia VS4 for the first time (or after transporting it to a new location)

4.1 Unboxing and Placement

1. **UNPACK CAREFULLY:** Remove the VS4 grinder and all accessories from the box. Remove any protective wrapping, foam, tape, or **cable ties** used for shipping. Make sure not to discard any small parts or tools.
2. **CHECK CONTENTS:** Verify you have all items listed in the "What's in the Box" section. Especially ensure the burr assembly (inside the grinder) did not come loose during shipping.
3. **POSITION THE GRINDER:** Place the VS4 on a stable, level surface such as a countertop or table. Choose a location that is dry, free from steam or splashes (not right next to a sink or stove), and near a suitable power outlet. Ensure there is enough clearance above the grinder to easily load beans into the hopper, and enough space in front to place and remove the dosing cup.
4. **AMBIENT CONDITIONS:** Avoid placing the grinder in direct sunlight for prolonged periods or in an area with extreme temperatures. Room temperature and humidity are ideal for consistent grinding and to avoid condensation inside the grinder.

4.2 Verifying Hopper Assembly

ENSURE POWER IS OFF: **Do not plug in or turn on** the grinder yet. The grinder should be completely unpowered whenever attaching or removing the hopper assembly.

FACTORY ASSEMBLY: The VS4 is shipped with the hopper and grind chamber fully assembled at the factory. There is no need for the user to install the hopper during initial setup. However, it is important to visually confirm that the hopper and chamber assembly are seated correctly and locked into place before first use.

The hopper and grind chamber sit on top of the lower chamber and motor base, and the outer burr is pre-installed within this upper assembly. The entire module is secured to the body using the quick-release collar.

UNDERSTANDING THE QUICK-RELEASE COLLAR: The quick-release collar is a locking ring located around the base of the hopper assembly. Always ensure the collar is fully locked before powering on the grinder to prevent accidental operation without the grind chamber.

TO LOCK

Rotate this collar anticlockwise until you feel it click or resist. This action locks the hopper and grind chamber in place and engages a safety interlock that disables the motor if unlocked.



TO REMOVE

Rotate the collar clockwise until it disengages and then lift the entire hopper assembly straight up.



To confirm proper alignment, gently check that the hopper sits flush with the top of the grinder body. Lightly attempt to rotate the hopper clockwise and anticlockwise — it should not wobble or feel loose. If the collar is not already locked, rotate the collar in the locking direction (usually clockwise, indicated by the arrow on the collar) until you feel it click or resist. The grind reference mark should face the front of the grinder when fully locked.

Inside the chamber, the inner burr should be aligned with and seated into the center of the outer burr. During factory installation, the drive shaft and motor cog will already be mated with the chamber's lower assembly. However, if the hopper is ever removed for cleaning or maintenance, this process of alignment and seating will need to be repeated. Refer to [Section 6](#) for detailed disassembly and reassembly steps.

When reinstalling the lower grind chamber onto the grinder body, proper alignment of the motor drive cog with the chamber's cog is essential for correct burr engagement. To seat the chamber, place it gently onto the body so the alignment pins are near their slots. You may need to slightly rotate the wing nut (located on top of the inner burr) by hand to help the chamber's cog mesh smoothly with the motor drive cog. Turn the wing nut gently clockwise or anticlockwise in small increments until you feel the chamber drop fully into place on the alignment pins. Avoid forcing the chamber down if resistance is felt; instead, adjust the wing nut rotation until it seats correctly. Once seated, the chamber will sit flush and stable, ready for the hopper assembly to be reattached.

Lastly, rotate the grind adjustment collar slightly to confirm it is not set to zero or fully tightened. The burrs should not be in contact before first use. If needed, rotate the collar clockwise slightly to coarsen the grind gap. You'll calibrate the zero point formally in [Section 5.2](#).

4.3 Power Connection

ADAPTER CONNECTION: Locate the power inlet socket on the back of the VS4 grinder's base and securely connect the provided detachable AC power cable. Plug the other end into a suitable grounded wall outlet rated for 100–240 V AC, 50/60 Hz. Ensure the cable is routed safely to prevent tripping hazards or accidental disconnection. Before connecting power, verify that the RPM dial is set to the “OFF” position.

POWER AND RPM CONTROL: The VS4 grinder uses a five-position dial to control power and grinding speed. The dial includes an “OFF” position and four grinding speeds: 150, 200, 250, and 300 RPM. Before plugging in the grinder, ensure the dial is set to “OFF.” After connecting power, turn the dial to your desired grinding speed to start the motor. For initial setup, you may choose the middle speed (200 RPM) or select a speed suited to your brew method—for example, a lower RPM such as 150 may enhance flavor clarity for light roasts, while higher RPMs like 300 enable faster grinding. You can adjust the dial at any time during operation to suit your preferences.

4.4 Initial Test and Inspection

Before grinding coffee, perform a quick test run to ensure everything is working correctly:

NO-LOAD TEST: With the hopper empty and lid in place, turn the grinder on briefly. The motor should start and the burrs spin freely with a smooth sound. Run it for 5-10 seconds. Listen for any unusual sounds (like scraping or grinding which could indicate the burrs are too close or misaligned or that parts have shifted during shipment due to shock damage). If you hear anything abnormal, turn off immediately and inspect the burr chamber (after unplugging) to ensure burrs are properly seated and no foreign object is inside. It's normal for a new grinder to have a faint sound of light contact if at the zero point – that's why we ensure it's slightly backed off.

ZERO POINT CHECK: After the brief test, turn the adjustment collar gently clockwise (finer) until you feel the slightest resistance or “chirp” of the burrs touching, then back off anticlockwise a tiny bit. At this point, note the position on the scale (this is roughly your zero or calibration point. Fine calibration adjustment can be made in section 6.5. Do not ever operate the motor at the point of burrs firmly touching. This check is just to familiarize yourself with how the zero point feels.

READY FOR OPERATION: Turn off the grinder after the test. Now you are ready to load beans and begin using your VS4. Proceed to the Operating Instructions section for grinding your first dose.

5. Operating Instructions

This section explains how to use the VS4 for daily grinding, including adjusting grind size, calibration, and best practices for getting the most out of your grinder. Always follow the operating instructions in sequence and refer to the safety precautions as needed.

5.1 Initial Test and Inspection

Before grinding coffee, perform a quick test run to ensure everything is working correctly:



Measure Your Beans:

Because the VS4 is a single-dose grinder, it is designed for you to weigh out each dose of coffee beans you plan to grind (rather than storing a large quantity in the hopper). Measure the desired amount of whole coffee beans using a scale. The hopper capacity is about 40 g, which is plenty for most single brews or a double espresso shot dose. Do not exceed the hopper capacity.

Remove Hopper Lid:

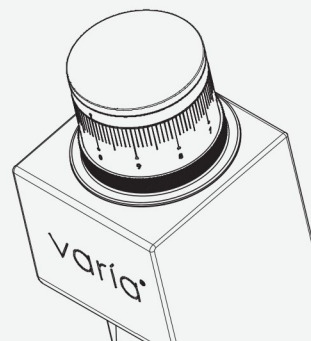
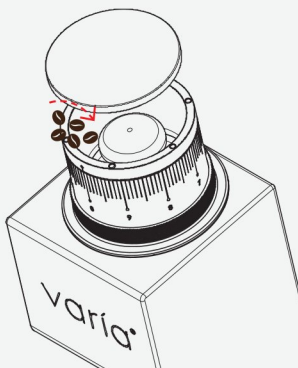
Take off the silicone hopper lid (which doubles as the base for the bellows). Ensure the finger guard is sitting in the hopper opening beneath it.

Load Beans:

Pour the measured coffee beans into the hopper. Ensure no stray beans fall into the grinder body or around it.

Replace Lid:

Place the hopper lid back on. This helps reduce noise and prevents beans from bouncing out. Note: If using the RDT technique (described in Section 5.5), you would spritz the beans with water before pouring them into the hopper.



5.1 Initial Test and Inspection – continued



Position the Grounds Cup:

Place the magnetic dosing cup on the grinder's base or holder directly under the grind chute to catch all grounds. Ensure the dosing cup is centered beneath the chute to avoid spillage. Note: Avoid placing your espresso portafilter directly under the chute to prevent potential damage to the grinder's finish or body. Instead, grind into the dosing cup first and then transfer the grounds to your portafilter.

Set Grind Speed (RPM):

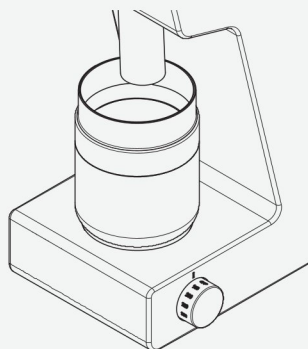
If your recipe or preference calls for a certain RPM, adjust the RPM control dial now. For instance, you might choose ~150 RPM for a light roast espresso to reduce heat, or a higher speed like 250 RPM for a quick coarse grind. If unsure, leaving it at a medium setting is fine – you can experiment with this feature over time.

Start Grinding:

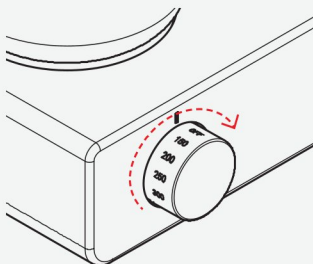
You should hear the burrs grinding the beans with a consistent sound. The grinder runs continuously while the dial remains set to a grinding speed and stops when turned back to "OFF." There is no separate power button or pulse mode.

During Grinding:

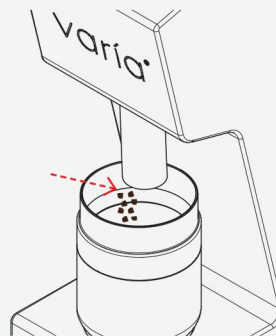
Typically, the entire dose will grind through in a matter of seconds (depending on dose size and grind fineness – finer grinds take longer). You can observe the grounds dispensing into the cup. If the grinder sounds like it's slowing or straining, it could indicate an overly fine setting or very hard beans; if this happens, turn it off and check your grind setting or bean type (see Troubleshooting in FAQ if included).



Set the RPM dial from the "OFF" position to your desired grinding speed (150, 200, 250, or 300 RPM).



The grinder will start operating immediately at the selected speed.





End Grinding:

When you have finished grinding, you can stop the grinder manually by turning the RPM dial back to the "OFF" position. If you forget to turn it off, the grinder has an automatic stop feature: it will power down after approximately **20 seconds** of no coffee being detected in the grinding chamber. In either case, do not leave the grinder running unattended.

Use the Bellows:

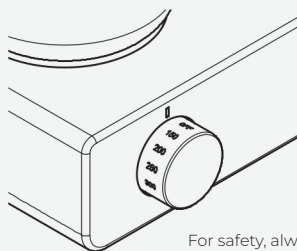
After the grinder has fully stopped, remove the hopper lid and attach the silicone bellows (see Section 5.6 "Hopper Bellows" for detailed instructions on use). Give a few gentle pumps on the bellows to blow out any remaining coffee grounds from the burr chamber and chute. This ensures you get all of your dose into the cup and maintain the zero-retention benefits of the grinder.

Collect Grounds:

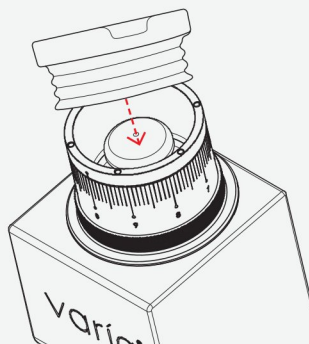
Remove the dosing cup and gently tap or shake it to settle the grounds. They are now ready to use in your brewing device. If preparing espresso, it is recommended to grind into the dosing cup first, then transfer the grounds to your portafilter. After dosing, ensure the grounds are evenly distributed in the portafilter for optimal extraction.

After Grinding:

If you are done grinding, you can turn the main power switch off for safety.



For safety, always ensure the dial is returned to "OFF" after grinding.



It's a good practice to leave the grinder off and unplugged when not in use for long periods.

Tips for Best Results:

FEED BEANS GRADUALLY (IF NEEDED): The VS4's 53 mm burrs and powerful motor can handle light-roasted or hard beans well. However, for very light, dense roasts at fine espresso settings, you may find the grinder works best if you don't overload it instantly. In such cases, you can partially fill the hopper, start the grinder, then slowly add the rest of the beans. This "trickle feed" can avoid any possibility of the motor bogging down. In most scenarios, simply adding the full dose at once is fine.

AVOID FREQUENT STOP/START ON FULL BEANS: To protect the motor and ensure consistent grinding, avoid stopping the grinder mid-dose and restarting while beans remain between the burrs. If you must stop during grinding, allow the grinder to finish grinding the beans currently in the chamber before restarting. If beans remain and need to be cleared, always power off and unplug the grinder first. Then, safely remove any beans from the hopper or grind chamber by following the cleaning and maintenance instructions provided in this manual.

MONITOR SOUND AND PERFORMANCE: With experience, you'll become attuned to the sound of your VS4. A smooth, consistent grinding sound indicates all is well. If you hear anything like the burrs touching (a chirping or metallic scraping sound), stop immediately and adjust coarser. If the grinder ever jams (motor hums but no grinding), turn it off, unplug it, and refer to maintenance/disassembly to clear the burr chamber.

AFTER EACH USE: Regularly using the bellows and brush will keep your VS4 mostly clean day-to-day. Avoid letting coffee grinds accumulate in the machine, as this can affect performance and taste over time (old stale grinds). The next sections will cover cleaning and calibration in detail.

5.2 Grind Size Adjustment & Calibration

The Varia VS4 provides stepless grind size adjustment, allowing you to dial in the perfect grind for any brew method. It comes factory-calibrated, but it's important to understand how to adjust and (if necessary) recalibrate the zero point.

1. UNDERSTANDING THE ADJUSTMENT COLLAR:

The adjustment collar is the ring on the hopper marked with a scale. Turning this collar changes the distance between the burrs. On the VS4, rotating the collar clockwise moves the burrs closer together, producing a finer grind, while rotating it anticlockwise moves the burrs apart for a coarser grind. The scale may be numbered from finest to coarsest (for example, 0 at the finest end).

The VS4's internal thread pitch allows extremely precise adjustment — approximately **0.01 mm (10 microns)** of burr-gap change per increment — making it easy to fine-tune espresso shots or coarse brews.



2. **FACTORY CALIBRATION:** Your VS4 is factory-calibrated so that the “0” on the scale corresponds to the point where the burrs are just touching (absolute zero). Each grinder is tested and verified before packaging. The system is designed to remain stable during transport and normal use, so you do not need to recalibrate. If desired, you can verify the zero point or fine-tune the outer burr scale as described in Section .
3. **FIND ZERO (BURR TOUCH POINT) - OPTIONAL CHECK:** Ensure the grinder is **off** and unplugged. Remove any beans from the hopper. Slowly rotate the adjustment collar **clockwise (toward finer)** while feeling and listening carefully. As you approach the burr-touch point, you may feel slight resistance or hear a faint metallic “chirp” or whisper of the burrs kissing. Stop immediately at the first point of contact – do not force past this position. This is the absolute zero, confirming that the internal assembly remained secure during shipping.
4. **SET THE ZERO REFERENCE:** The VS4 is factory-set so the collar’s indicator aligns closely with the physical zero point, with a tolerance of approximately ± 10 microns (0.01 mm) – about one small scale division. If the actual zero is slightly off the printed “0”, this is within normal limits and does not require adjustment. Avoid grinding exactly at “0” to prevent burr contact; instead, operate slightly above zero for fine espresso grinding. Re-indexing of the outer scale should only be performed if you intend to fine-tune the collar as described in Section 6.5.
5. **LOCK OR NOTE CALIBRATION:** The VS4’s design ensures that removing the grind chamber or hopper does not disturb zero calibration. Once factory-set, you shouldn’t need to recalibrate under normal use. After changing or re-installing burrs, simply repeat a quick zero check to confirm proper alignment. If your grinder remains within tolerance, there is no need to adjust the scale or collar.
6. **DO A TEST GRIND:** After verifying calibration, perform a small test grind using a few grams of coffee at a moderately fine setting (e.g., “1” or “1.5”). Ensure the grinder runs smoothly without any metallic noise. If you hear burr contact during grinding, adjust one increment coarser and test again until operation is smooth and quiet.
7. **USING THE ADJUSTMENT FOR BREWING:** With zero confirmed, use the grind-size chart as a general guide for different brewing methods. Each coffee and roast may require slight tweaks, so it’s helpful to record preferred settings. For espresso, remember that even a 10-micron change can noticeably affect flavor and extraction – adjust in small increments.
8. **NO NEED FOR FREQUENT CALIBRATION:** Thanks to the independent adjustment assembly, removing the hopper or upper burr for cleaning does not affect grind setting. You can disassemble, clean, and re-assemble without losing your set position. There’s no need to recalibrate after cleaning – just return the collar to your previous setting and continue grinding. Only after a full disassembly, burr replacement, or impact should you re-check zero alignment.

Never operate the grinder at the “0” (fully closed) setting. Running the motor with burrs in full contact can damage the burr cutting edges and overload the motor. Always ensure there’s a slight gap between the burrs when the grinder is running, especially at very fine settings. If in doubt, adjust one tiny notch coarser and test for any burr contact sound.

5.3 Flat Burr Grind Settings Chart

The Flat Burr can be adjusted to deliver the following grind particle sizes.

- Turkish: 1 to 2
- Espresso: 2 to 5
- Mokapot: 5 to 7
- Pour Over: 7 to 10
- French press: 10 to 14
- Cold Brew: 14 to 20

NOTE: These settings should only be used as a guide/reference.

Settings for optimal results may differ depending on the bean type, roast degree, coffee dosage and brew method.

WARNING!

DO NOT turn the grinder on while the hopper is set to the tightest setting as this could cause damage to the burrs as a result of the edges contacting.

**DO NOT
GRIND
FROM
0-1**



5.4 Burr Seasoning

New burrs often require a break-in period known as “seasoning.” During the first few kilograms of coffee you grind, you may notice changes in grind consistency and a reduction in static. This is normal as the burrs’ very sharp edges wear microscopically and the grinder’s internal surfaces develop a light coat of coffee oils and particles.

Seasoning Effect: As you continue grinding, the internal surfaces accumulate a slight coffee residue which helps dissipate static electricity. Consequently, static cling will naturally diminish with use.

Expect that your grind setting for a given brew might drift slightly during the first 1–2 kg of beans ground. For example, an espresso setting that worked on day one might need to be set a bit finer after 2 kg of use, as the burrs settle. After this initial period, the burrs will have a consistent cutting performance and your settings will stabilize.

You might also observe higher static and retention in the first few uses. Fresh burrs and plastics can carry a bit of static charge. As you grind coffee, the active ionisation system and the natural coating of coffee dust will “season” the surfaces, reducing static cling. Usually after grinding through about 2 kg of coffee, static will be noticeably lower and retention minimal.

There is no need to intentionally waste coffee to season the burrs, but some users choose to grind a cheap batch of beans initially to speed up the process. This is optional. Otherwise, simply be aware that the first 10–12 uses are a break-in period.

During seasoning, clean the grinder regularly (e.g., use the bellows frequently and brush out the burrs after each session) to prevent any excessive buildup of coffee dust, which in rare cases could affect the moving parts. After the burrs are seasoned, cleaning can be done on a normal schedule (see Section 5.6 for routine cleaning and Section 6 for maintenance and disassembly routines).

The VS4’s high-quality burrs are built to last for many hundreds of kilograms of grinding. Proper seasoning and care ensures you get consistent performance from those burrs throughout their lifespan.

5.5 Static, Retention, and RDT (Ross Droplet Technique)

High-speed grinding and dry coffee beans can generate static charge, which may cause coffee particles to cling to the chute or dosing cup. Although the VS4’s internal ionization system already minimizes static build-up, you can further improve consistency and reduce retention by using the Ross Droplet Technique (RDT).

Using RDT

Before grinding, lightly mist the beans with a few drops of water (≈1 spray) using an atomizer. Shake the beans gently to distribute the moisture evenly before adding them to the hopper. Do not soak or overwet the beans—only a fine mist is needed to provide a thin conductive surface that allows static charge to dissipate harmlessly.

Benefits

Extensive testing of the VS4 confirms the following performance:

Test Conditions	Without RDT	With RDT
Bean Type	Fresh medium roast blend	Fresh medium roast blend
Dose	10g	10g
Grinder Condition	Seasoned burrs	Seasoned burrs
Average retention	0.10 - 0.20g	0.01 - 0.03g

These values represent output weight variance after a single grind cycle with the grinder purged and tared. Results may vary slightly depending on bean density, roast level, and humidity, but RDT consistently achieves near-zero retention.

Static Control System

The VS4 also includes a built-in ionization module that neutralizes charge within the grind path. Together with RDT, this dual static-control approach ensures clean, consistent dosing and prevents clumping or “spray” during dosing—especially useful with fresh, gas-rich coffees.

Recommendations

1. Apply RDT when grinding freshly roasted beans or working in low-humidity environments.
2. Use distilled or filtered water to avoid mineral residue.
3. Do not operate the grinder if visible moisture remains in the chute or burrs.
4. Periodically clean the chute to remove any oil build-up that may affect static behavior.

Technical Note

Retention values measured above were obtained with a seasoned unit, after full burr break-in. Initial retention during early use may be slightly higher and will stabilize as the burr surfaces polish through regular grinding.

By combining the VS4’s active static elimination and optional RDT, you should experience very little static mess or retention. Your entire coffee dose will end up in your cup, and your counter will stay much cleaner.

5.6 Hopper Bellows (Single-Dose Blower)

The Varia VS4 is a precision single-dose coffee grinder that combines innovative design with user-friendly features to elevate your coffee brewing experience. This section provides an overview of the grinder's components and unique technologies:

1. **ATTACH THE BELLOWS:** After you finish grinding and have turned off the grinder, remove the hopper lid. The bellows has two ends – a top side (open end) where the lid fits, and a bottom rim that sits on the hopper. Take the hopper lid and press it into the top opening of the bellows. It should fit snugly, effectively making the bellows into a temporary “lid.” Then place the bellows’ bottom rim over the top of the hopper. Ensure it sits securely around the entire hopper lip, creating a seal. The bellows should now be on top of the grinder in place of the normal lid.
2. **PUMP AIR THROUGH:** With one hand holding the grinder steady, use your other hand to press down on the bellows and then release. Pressing down squeezes air through the burr chamber and grind chute, dislodging any grounds or chaff that remain after grinding. When you release, the bellows draws in air from the top. Press and release in quick succession a few times (2–4 pumps is usually enough). You will see additional grounds fall out into your dosing cup or onto the base – these are the remnants being flushed out.
3. **REPEAT AS NEEDED:** Continue pumping until you no longer see any coffee particles coming out. Typically, after a couple of firm pumps, the chamber is cleared.
4. **REMOVE AND STORE BELLOWS:** Take the bellows off and retrieve your hopper lid from it. Place the lid back on the hopper if you’re done, or leave it open if you plan to grind another dose immediately. You can store the bellows separately or even keep it inverted on the hopper as a cover between uses – just remember it’s primarily a tool, not meant to hold beans.
5. **FREQUENCY:** Varia recommends using the bellows after every grind. This consistent practice ensures minimal build-up inside the grinder and that each dose of coffee is untainted by leftovers. It also helps prevent clogs, especially with very fine grinds where compacted coffee could eventually block the chute or burr chamber exit.

NOTE: Do not use the bellows while beans are in the hopper or while the grinder is running. The blast of air is intended only for cleaning out remaining grinds, not for pushing beans into the burrs. Also, do not use the bellows as extra hopper capacity – it’s not designed to hold beans on top of a full hopper. Misusing it in that way could result in beans getting sucked up into the bellows or an inconsistent feed.

Regular use of the bellows will keep your VS4 clean internally and ensure every gram of coffee you grind makes it into your cup. It’s a simple habit that contributes to both cleanliness and consistency.

5.7 Routine Cleaning (After Use & Daily)

To maintain performance and cleanliness, follow these routine cleaning tips:

1. **AFTER EACH USE:** As described, use the bellows to clear the chamber. Also, use the small brush to sweep out any grinds from the hopper walls and the chute area. Wipe the exterior of the dosing cup and grinder to remove any stray coffee dust.
2. **DAILY (OR AFTER SEVERAL USES):** If you're a heavy user (grinding multiple times a day), it's good to remove the hopper lid and brush out the top of the burr chamber daily. Simply make sure no piles of grinds are sitting on the adjustment collar or around the burr entry. A dry cloth can be used to wipe the outside surfaces of the grinder. Fingerprints or oils on the aluminium body can be cleaned with a slightly damp cloth, then dried immediately.
3. **NO BEANS STORED:** Avoid leaving beans in the hopper for extended periods, as this can lead to oils seeping and making the hopper oily. The VS4 is meant for single dosing; put beans in only when you're about to grind them.
4. **AVOID WATER INSIDE GRINDER:** Never pour water or liquid cleaners into the hopper or burr chamber. The motor and burrs are not designed to handle moisture. Always use dry methods (brush, cloth, bellows) for internal cleaning. The only exception is a very lightly damp cloth for the outer surfaces if needed, but keep water away from any openings.
5. **USING GRIND CLEANING PELLETS:** Some users like to use grinder cleaning tablets (like Urnex Grindz) occasionally. These are food-safe pellets that can be ground to help absorb oils. If you choose to use them, follow the product instructions carefully (usually you run a dose through like coffee, then run some coffee afterwards to purge any residue). The VS4 can handle them, but **do not use rice or other improvised grains** to clean the grinder – those can be too hard and damage the burrs or motor.

By doing small cleaning tasks regularly, you'll find that you rarely have to do big deep cleans. Your coffee will also taste better with a clean grinder, especially when switching between different beans (residual old coffee can impart off-flavors).

6. Full Disassembly & Maintenance

Over time, or if you suspect a clog or wish to replace the burr set, it may be necessary to disassemble the VS4's grind chamber for cleaning and maintenance. Thanks to its independent grind chamber and quick-release hopper collar, the VS4 allows for efficient disassembly without tools. Depending on your cleaning needs, the following sections describe three levels of service: **a surface clean, full chamber removal and body clean, or complete disassembly and burr service.**

Before beginning, make sure you have a clean, well-lit workspace, the included tool kit, and a soft cloth or mat to place small parts. Ensure the grinder is unplugged. It's also wise to have the cleaning brush and blower handy as you proceed.



To begin any of the following procedures, first ensure the grinder is unplugged. Remove any remaining beans from the hopper. Firmly grasp the quick-release collar and rotate it clockwise to unlock.



Once disengaged, lift the entire hopper and outer burr assembly vertically off the grinder body. The outer burr will remain seated inside this upper assembly. Set the complete hopper module aside on a clean surface, taking care not to drop or impact the burr.

6.1 Surface Clean

With the hopper and outer burr assembly now removed, the grind chamber is fully exposed. At this point, the customer has several options depending on their intended level of maintenance.

OPTION A – SURFACE CLEAN (Quick Visual And Brushing)

If the chamber appears clean and the user simply wishes to inspect or lightly brush the area, they can leave the lower chamber installed in the grinder body. Using the supplied brush, the user can clean around the inner burr and sweep loose grounds or chaff from the chamber walls. This allows a fast check and tidy-up without any further disassembly. Once clean, the hopper assembly can be reinstalled and the grinder returned to service.



6.2 Chamber Removal and Body Clean



OPTION B – CHAMBER REMOVAL AND BODY CLEAN

The lower chamber can be removed entirely by lifting it straight upward out of the grinder body. No tools are needed. This exposes the interior chassis, including the dosing chute and ionising needle. Use a brush or blower to gently clean out the exposed cavity. Take special care not to touch or bend the ionising needle located near the chute outlet.

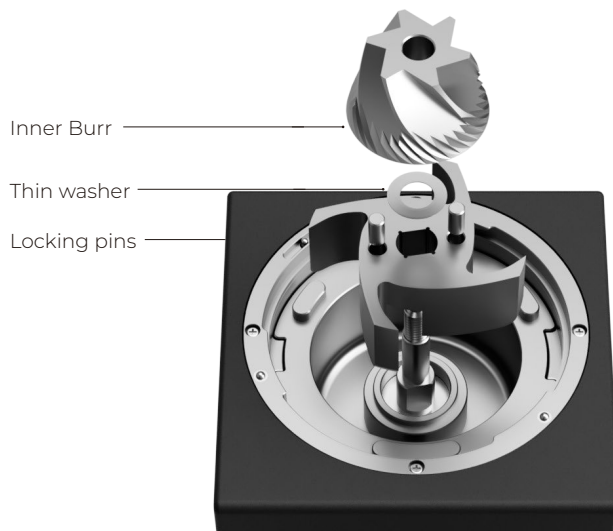
To reinstall the lower chamber, align its side guide tabs with the alignment pins inside the body. You may need to gently rotate the chamber while lowering it to allow the motor drive cog to properly seat. You'll feel the chamber drop into place once aligned. Refit the hopper assembly by placing it on top and rotating it into the locked position via the collar. The grind setting reference mark should align with the front of the grinder once fully secured.

6.3 Full Clean / Disassembly / Inner Burr Removal or Change

OPTION C – BURR REMOVAL AND FULL DEEP CLEAN

If a deep clean or burr replacement is required, the inner burr must be removed. However, the lower chamber must remain installed in the grinder body while doing so. The motor provides the resistance needed to loosen the central wing nut. Do not attempt to disassemble the burr while the chamber is removed, as the drive cog will spin freely due to motor-side grease and a lack of fixed components.

1. Ensure the grinder is unplugged and the chamber is properly seated in the grinder body.
2. Locate the central wing nut securing the inner burr. Note the reverse-thread direction: loosen by turning clockwise, tighten by turning anticlockwise. The wing nut has markings indicating lock/unlock directions.
3. Loosen the wing nut by hand, carefully breaking it free and continuing until it can be lifted out. Set aside any washers or spring washers, noting their position.
4. Gently lift the inner burr from the chamber. Some resistance due to alignment pins or key slots may occur; wiggle gently if needed.
5. Gently lift up the grounds spindle, locking pins and spacer.
6. Thoroughly brush and vacuum the chamber and chute area. Avoid water unless burrs are re-oiled immediately. Clean the ionisation needle gently with the soft brush provided.
7. Inspect all parts for chips, cracks, or damage. Keep all small parts organized.



6.4 Hopper Disassembly and Outer Burr Removal

In cases where deep cleaning or burr replacement is required, the hopper assembly and outer burr set can be disassembled without affecting calibration. The VS4's threaded adjustment system is designed to ensure burrs are self-aligning and repeatable to reinstall, using a fixed-entry thread path and keyed burr geometry.

Before beginning, ensure the grinder is unplugged and that both the hopper and lower chamber have been removed and placed on a clean work surface. Disassembly should be performed on a padded surface to prevent damage to critical components.

THREAD & BURR SYSTEM DESIGN NOTE

The VS4 features a threaded adjustment mechanism that interfaces directly with the outer burr — not the burr carrier or mounting plate. As the grind collar rotates, the burr travels vertically within the thread. The vertical carrier follows this movement passively and does not determine position or calibration.

This threading system is a single-entry design. The burr can only be inserted one way and will always return to the same height when reinstalled. Additionally, the outer burr uses a 3-ear locating system — two small ears and one large — to ensure proper indexing. The burr cannot be rotated into the wrong position.

Because of this design, calibration is inherently preserved. Even if the hopper is rotated during service, the burr will re-thread and reseat correctly without requiring any adjustment or zero-point recalibration.



Step-by-Step Disassembly & Cleaning

1. **REMOVE THE OUTER BURR MOUNTING PLATE SCREWS:** Turn the hopper over so the underside is accessible. Using the supplied tool, remove the three mounting screws that secure the outer burr mounting plate to the adjustment collar. Carefully place the screws in a tray or on a cloth to avoid losing them.
2. **REMOVE THE MOUNTING PLATE:** Remove the mounting plate by lifting it up and setting it aside. This exposes the outer burr directly.
3. **UNSCREW THE OUTER BURR FROM THE ADJUSTMENT THREAD:** With the mounting plate removed, the silicone gaskets are now exposed beneath it. Hold the base of the chamber—specifically the section containing the fixed adjustment reference mark—and rotate

the hopper clockwise to unscrew the outer burr from the internal thread. This clockwise rotation corresponds to coarsening the grind when the grinder is upright. Continue rotating until the burr fully disengages and can be lifted out. Approx 5 full revolutions of the hopper. The thread is a single-entry design, ensuring the burr self-guides into the correct position during reinstallation.

With the burr removed, inspect the internal adjustment thread. Use a brush or compressed air to clean any coffee residue or dust. Do not wipe away grease or lubrication and if dry add more food grade grease to lubricate. Also be sure to clear the carrier face and surrounding areas free of coffee grounds. Also clean the carrier face and surrounding areas.



Step-by-Step Disassembly & Cleaning – continued

4. **CLEAN OR REPLACE THE OUTER BURR:** If reusing the same burr, clean it thoroughly and check that all three ears are intact and free of debris. If installing a replacement burr, inspect it for defects and ensure it includes the two outer silicone gaskets on the face. These gaskets must be present and properly seated to provide damping and secure contact with the carrier.
5. **REINSTALL THE OUTER BURR:** Align the burr's three indexing ears with the thread entry in the collar. The large ear ensures the burr can only be inserted in one correct orientation. Confirm that the two silicone gaskets are clean and fully seated on the burr's outer face. Lower the burr into place within the hopper assembly. Carefully rotate the entire hopper assembly anticlockwise when holding it upright to thread the burr back in. Rotate the hopper 5 full revolutions anticlockwise. Be sure to avoid cross-threading or forcing the
- rotation. Do not overtighten—the thread depth and carrier preload are designed to hold the burr firmly without compressing the gaskets.
6. **REINSTALL THE MOUNTING PLATE:** Replace the mounting plate over the opening and align it with the screw holes. Secure it using the three mounting screws. Tighten each screw evenly but do not overtighten. The plate should sit flush and firm without gaps.
7. **FINAL CHECK AND HOPPER REFIT:** Check that the burr turns smoothly and sits evenly in the thread. Then lower the entire hopper assembly back onto the grinder body. Align it with the lower chamber and rotate the quick-release collar until it clicks into the locked position. The grind setting reference mark should face forward when properly engaged.



Ensure to line the middle plate alignment to the adjustment reference on the base of the hopper and ensure to place the screws into the middle hole of the 5 screw holes.

6.5 Fine Calibration Adjustment – Outer Burr Assembly Range

The Varia VS4 features an additional fine calibration system integrated into the outer burr assembly. This allows precise adjustment of the entire grind range baseline, enabling finer or coarser calibration beyond the standard collar range.

This system uses a five-hole index located beneath the outer burr mounting plate, providing a total range of ± 40 microns (0.04 mm) adjustment finer or coarser from the neutral (center) position.

Purpose of Fine Calibration:

This adjustment is designed to fine-tune your grinder's overall range without affecting the step-by-step precision of the adjustment collar. It's particularly useful if:

1. You require slightly finer overall calibration for espresso or Turkish brewing.
2. You prefer a coarser baseline for filter or immersion brewing.
3. You've changed burr types or experienced minor tolerance variations.

By shifting the outer burr position using the fine calibration holes, the burr gap baseline moves by approximately 20 microns per hole, allowing up to ± 40 microns total offset from the factory-neutral position.



Understanding the Five-Hole System:

When the outer burr mounting plate is removed (see Section 6.4 – Hopper Disassembly and Outer Burr Removal), you'll find five precision index holes arranged symmetrically on the top of the burr carrier ring.

1. The center hole is the neutral (factory) calibration position.
2. The two holes to the left shift the range progressively finer.
3. The two holes to the right shift the range progressively coarser.

Each hole corresponds to 20 microns of movement in burr spacing.



6.6 Troubleshooting and Maintenance Tips

1. **DIFFICULTY LOCKING HOPPER BACK IN:** If the hopper assembly doesn't seem to sit correctly when reattaching, do not force it. Remove it, inspect that the inner burr is seated right and that no tools or parts are left inside the chamber. Sometimes the inner burr not fully pressed down or a misaligned washer can prevent proper seating.
2. **CROSS-THREADING THE NUT:** Be very careful when starting the burr nut. If it's not catching properly, stop, realign, and try again. Cross-threaded burr nuts can be a pain to fix (often requiring a new shaft or nut).
3. **LOST SPRINGS/WASHERS:** If during disassembly you lost a small part (it can happen – springs can spring off!), do not run the grinder without it. Even if the grinder seems to work, missing a washer or spring can alter alignment or cause damage. Contact support for replacement parts if needed.
4. **CLEANING IONISER AND CHUTE:** During full cleaning, you have better access to the grind chute and the ionisation needle. Make sure the chute is clear of any accumulated coffee dust.

The ioniser needle should be free of any coffee oils or build-up as well. A gentle wipe with a dry cotton swab can help if brushing isn't enough – but **ensure the grinder is powered off** when working near the ioniser. Keeping this area clean ensures maximum static reduction.
5. **MOTOR OR GEARBOX SERVICE:** The motor and gearbox of the VS4 are maintenance-free under normal conditions. You should not attempt to open the motor housing or gearbox. If you suspect an issue with the motor (strange sounds, reduced performance not related to burrs), contact Varia service. There are no user-serviceable parts inside the motor/gear drive beyond what's described in this manual.
6. **USING THE ADJUSTMENT FOR BREWING:** With your zero point established, use the following chart as a general guideline to adjust the grind size for various brewing methods. Keep in mind that each coffee bean and roast may require slight tweaks, so it's helpful to record your preferred settings for reference. Use fine adjustments especially for espresso, as small changes can significantly impact flavor and extraction.



WARNING!

DO NOT DISASSEMBLE THE LOWER CHAMBER OR DRIVESHAFT ASSEMBLY: Under no circumstances should you attempt to disassemble the lower chamber or the driveshaft assembly. These components are precisely calibrated and factory sealed. Attempting to open or tamper with these parts can cause irreparable damage, void your warranty, and pose safety risks. All servicing of these assemblies must be performed only by authorized technicians.

By following these disassembly and maintenance steps, you will keep your VS4 in top condition for years. The ability to quickly remove the grind chamber means you can easily clean out old coffee and prevent stale buildup, ensuring every cup of coffee tastes as fresh as possible.

7. Active Ionisation System

One of the standout features of the Varia VS4 is its **active ionisation anti-static system**. This section explains how it works and provides important safety and maintenance guidelines specific to the ioniser.

7.1 How the Ionisation Needle Works

During grinding, the VS4's ionisation needle emits a small electric charge (ions) into the grind chute area. These ions effectively neutralize the static charge that is naturally generated when coffee beans are ground. By counteracting static, the ioniser causes coffee grounds to drop smoothly into your container rather than sticking to surfaces. The result is a more consistent dose (since all grounds exit) and less mess. You'll notice that even fluffy, fresh-ground coffee that would normally cling to the dosing cup instead just slides right out. This technology ensures optimal flow of grounds and contributes to uniform extraction since clumps and buildups are minimized.

You do not need to do anything special to activate this system – it runs automatically whenever the grinder is on. It is normal to sometimes hear a faint buzz or see a tiny spark at the needle if grinding in a dark room; this is the high voltage doing its job. The system is designed to be safe and contained within the grinder's chute. The ionisation system complies with all relevant electrical safety standards and ozone emission regulations, ensuring safe operation for home use.

7.2 Safety Precautions for the Ioniser

1. **DO NOT TOUCH THE NEEDLE:** **Never touch the ionisation needle** with your fingers or any object. It is a delicate component. More importantly, it carries a high-voltage charge (low current, but still it can give a shock or jolt) when active. Only qualified technicians should handle or replace the needle if servicing is required. Keep tools and metal objects away from the chute when the grinder is plugged in.
2. **POWER OFF BEFORE CLEANING:** Always ensure the grinder is switched off and unplugged before cleaning near the ioniser. This was mentioned in safety but bears repeating. The ioniser can retain charge briefly, so it's best to unplug and wait a minute before touching around that area.
3. **USE A SOFT BRUSH ONLY:** When cleaning the ionisation needle, use the small **soft brush** provided (or an equally soft, non-metallic brush). Gently sweep off any coffee dust. Do not scrub hard or use abrasive materials. The needle (or needles) can be bent or broken with rough handling, which will disable the anti-static function.
4. **KEEP IT DRY:** Avoid any contact between the ioniser and liquids. Do not spray any cleaning solution into the chute. Moisture can short out the ioniser or cause corrosion. If you are using RDT, make sure excess moisture does not reach the needle – wipe out the chute if needed after RDT grinding.

7.2 Safety Precautions for the Ioniser – continued

5. **NO USER MODIFICATION:** Do not attempt to adjust or re-wire the ioniser. It is calibrated at the factory for effective static removal. Tampering with it could not only reduce performance but also create an electrical hazard.
6. **REPLACEMENT:** If the ioniser needle becomes damaged or stops working (you might notice static returning significantly), contact Varia support or an authorized service center. Replacing the needle or its high-voltage generator should only be done by professionals, as it involves the grinder's electrical components. Do not attempt to replace it yourself, as incorrect handling could result in electric shock or further damage.

7.3 Maintenance of the Ioniser

The good news is the ionisation system requires very little maintenance aside from keeping it clean:

1. **REGULAR DUSTING:** Each time you do a full cleaning (Section 6.1), make it a point to dust off the ioniser needle. Coffee fines can coat it over time, which might insulate it and reduce its effectiveness. A clean needle ensures maximum ion flow.
2. **OBSERVATION:** Occasionally peek into the chute (with the grinder off) and ensure the needle is straight and not heavily coated in grinds. If it looks bent or extremely dirty, address it with cleaning or service.
3. **NO USER-SERVICEABLE PARTS:** Other than cleaning the exposed needle tip, there's nothing the user should disassemble in relation to the ioniser. The electronic module powering it is inside the grinder housing. If it fails, it's a warranty or service center matter.

8. Technical Specifications

Below are the technical specifications for the Varia VS4 Grinder. These details cover the grinder's key parameters, capacities, and construction:

Manufacturer	Varia Brewing Limited
Model name	VS4 Grinder
Intended Use	Single-dose electric coffee grinder for home or light commercial use

ELECTRICAL SPECIFICATIONS:

Power Supply	AC 100–240 V, 50/60 Hz (via external adapter); Output to grinder: ~24 V DC, up to 200 W.
Motor	200 W Brushless DC motor (high-torque, low noise design)
Motor Speed	Variable, 150–300 RPM (user adjustable)
Torque	14.5 N·m at the burr (with planetary gearbox reduction)
Gearbox	Planetary gear transmission, metal gears (provides ~10:1 reduction for torque multiplication and consistent speed under load)
Thermal Protection	Internal temperature sensor with logic control – the grinder monitors motor/driver temperature and may pause operation to prevent overheating. Maximum continuous grind time is approximately 60 seconds of grinding followed by at least 90 seconds of cool-down (duty cycle 1:1.5) for motor longevity.

GRINDING SPECIFICATIONS:

Burr Type & Size	53 mm conical burr set, stainless steel (heptagonal or multi-angle conical design for espresso & filter versatility). Factory burr is high-hardness tool steel (HRC ~58, high-nitrogen stainless).
Burr RPM	150–300 RPM (user controlled, low RPM grinding minimizes heat and static).
Grind Adjustment	Stepless internal adjustment collar, finer = clockwise, coarser = anticlockwise.
Grind Scale	Marked scale from finest to coarsest. Factory calibration at “0” = burr touch point (do not grind at 0). Adjustment resolution ~0.01 mm per division (10 microns per indicated step). This allows for extremely fine adjustments.

Grind Range	Capable of grinding from Turkish/espresso fine (approx. 100–200 microns particle size) up to coarse French Press grind (1000+ microns). The total range is roughly 2.5 revolutions of the adjustment collar from zero to fully open (range may be indicated as 0-10 on the dial).
Recommended Use	Suitable for espresso, moka pot, pour-over, drip coffee, AeroPress, French press, and cold brew. (Note: very fine powdery Turkish grind is near the limit of adjustment but can be achieved by calibrating slightly past zero – caution is advised to avoid burr contact.)

CAPACITY & THROUGHPUT:

Hopper Capacity	~40 g of beans (designed for single dosing; use bellows to clear after each dose).
Grounds Bin Capacity	~50 g (the included dosing cup can hold about 50 grams of ground coffee comfortably).
Retention	<0.2 g with no RDT (dry) and <0.1 g with RDT or using bellows, on a 20 g dose (measured after seasoning). In practical terms, essentially zero retention due to vertical path and purge system.

PHYSICAL CONSTRUCTION:

Materials	BODY HOUSING: ADC12 die-cast aluminium alloy (with CNC machined finish for critical alignment points). BURR CARRIER AND ADJUSTMENT COLLAR: Aluminium and stainless steel components. HOPPER: Food-safe plastic (or aluminium, depending on edition) with static-dissipative coating. DOSING CUP: Stainless steel with magnetic base (fits 58 mm portafilter if applicable). BELLOWS: Silicone rubber (food grade).
Dimensions (L × W × H)	161.4 mm x 97.7 mm x 337 mm (approximately 6.35" x 3.85" x 13.27"). The compact footprint saves counter space; height includes hopper and lid.
Weight	5.27 kg (approximately 11.617 lbs). The substantial weight comes from the motor and metal construction, contributing to stability.
Cord Length	AC adapter cord ~1.2 m.

ADDITIONAL FEATURES:

Active Anti-Static	Built-in ionisation needle in grind chute actively removes static (powered by an internal high-voltage module, ~± 8 kV at needle, low current, safe when used as directed).
Safety Interlock	Quick-release collar with power cutoff switch – the grinder’s motor circuit is disabled when the hopper collar is unlocked, to prevent operation without burr chamber in place.
Noise Level	Approximately 75–80 dB during grinding (at 1 m distance), depending on bean hardness and speed – relatively quiet due to brushless motor and gear damping.

These specifications are subject to minor changes in different production batches or regional variants, but generally represent the capabilities and build of the VS4 grinder. If you require any spec that is not listed here, please consult Varia’s official resources or contact customer support.

9. Warranty Claim Procedure

If you encounter an issue with your VS4, first refer to the troubleshooting steps in this manual or the FAQ section (if provided). Often, the problem can be resolved with proper adjustments or maintenance.

If the issue appears to be a defect and within warranty, stop using the grinder to prevent any further damage. Contact Varia Brewing customer support or your original retailer. Provide your proof of purchase, the serial number (if applicable, usually on the bottom of the unit), and a description of the problem. Photos or videos of the issue can help expedite the diagnosis.

Varia or the reseller will guide you through diagnostics and, if deemed a warranty case, will provide instructions for repair or return. This may include shipping the unit to a service center. (In some regions, Varia has service partners; in others, a return to manufacturer might be required.)

Ensure the grinder is properly packaged if you need to ship it. Use the original packaging if possible. Varia is not responsible for damage incurred during return shipping due to improper packing.

9. Warranty Claim Procedure – continued

COSTS: If the issue is confirmed as a warranty-covered defect, Varia will cover the cost of replacement parts and labor, and generally the return shipping back to you. Shipping the unit to the service location may or may not be covered depending on regional policy (check with support – sometimes the customer covers one-way shipping). If the unit is replaced, the warranty continues from the original purchase date (the replacement does not restart the 12-month clock, unless state or country law dictates otherwise).

AFTER THE WARRANTY: Even outside the warranty period, Varia will support you with replacement parts and service at a reasonable cost. The VS4 is built to be serviceable. Burrs, for instance, will eventually need replacement after their life (which might be many years for home use). You can purchase new burr sets and install them yourself (see Section 6.2) or have an authorized service do it. Other components like the drive gears or motor can likewise be repaired/replaced outside warranty for a fee.

Legal Details: Except as provided by law, this limited warranty is the exclusive warranty of the consumer product. Varia Brewing Limited disclaims all other express or implied warranties, including any implied warranties of merchantability and fitness for a particular purpose, after the 12-month warranty period. In no event shall Varia Brewing be liable for indirect or consequential damages arising out of the use of the VS4 grinder. Some jurisdictions do not allow limitations on implied warranties or exclusion of consequential damages, so the above limitations may not fully apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary depending on your state or country.

For any warranty claims or service inquiries, please contact: support@variabrewing.com or your local authorized Varia distributor. Provide your model (VS4) and serial number, and a detailed description of the issue. We are here to help ensure you enjoy your Varia VS4 grinder to its fullest potential.

Thank you for choosing the Varia VS4 Grinder.

We hope this manual has helped you understand your grinder's operation and features. With proper care and usage, your VS4 will be a reliable partner in making delicious coffee for years to come.

Happy Grinding!



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