

Espresso Machine Field Repair Guide

Step-by-step repair procedures for the most common espresso machine failures. Includes component specifications not published in manufacturer documentation.

REPAIR 01 — GROUP HEAD GASKET REPLACEMENT

Symptom: Water leaking from portafilter collar during extraction. Applies to: Breville Barista Express (BES870XL), Gaggia Classic Pro (2019+)

Machine	Gasket OD	Gasket ID	Thickness	Compound
Breville BES870XL	54mm	42mm	8mm	Silicone preferred
Gaggia Classic Pro	58mm	49mm	8.5mm	Silicone — NOT EPDM

- 1 Cool the machine.** Unplug and wait minimum 45 minutes. Brass group heads (Gaggia) retain heat longer than stainless (Breville) — do not rush.
- 2 Remove portafilter.** Twist counterclockwise and pull down.
- 3 Remove shower screen** (if applicable). Single Philips screw. Set aside with screw.
- 4 Extract old gasket.** Flathead screwdriver at 3 o'clock position. Work around circumference in 3cm increments. Do not lever from one point.
- 5 Clean the seat.** Damp cloth, cotton swab for inner groove. Remove all debris — any fragment under the new gasket creates a leak point.
- 6 Install new gasket.** Press in by hand around circumference. Seat with back of wooden spoon. Never use metal tools on silicone.
- 7 Reinstall shower screen** and screw. Snug, not overtightened — brass thread strips easily.
- 8 Cure cycle.** Run 2 hot water cycles before pulling a shot. New silicone requires heat cycles to fully seat.

REPAIR 02 — POD MACHINE NEEDLE CLEARING

Symptom: Weak flow, no output, or gurgling. Applies to: Keurig K-Elite, K-Supreme, K-Duo.

Machine	Entry System	Bore Diameter	Correct Cleaning Tool
Keurig K-Elite / K-Duo	Single needle	1.2mm ID	Paperclip wire (0.9mm)
Keurig K-Supreme / Plus	MultiStream (5-port)	0.8mm ID per port	Twist-tie wire (0.7mm)

- 1 **Unplug the machine.** Never service needles with power connected.
- 2 **Entry needle (top):** Insert correct-size wire into needle bore from above. Move in small circles — do NOT push straight in and out (misses the angled inner wall). Withdraw. Flush with water.
- 3 **Exit needle:** Remove K-Cup holder (press release tabs, pull down). Invert holder. Insert wire into exit needle bore from the open end. Same circular motion. Flush under tap.
- 4 **Oil plug treatment** (if wire alone insufficient): Soak K-Cup holder in baking soda solution (1 tbsp per 500ml warm water) for 20 minutes. Baking soda emulsifies coffee oils. Clear bore again with wire after soaking.
- 5 **Reassemble and test.** Run 10 oz water-only cycle. Flow should begin within 15 seconds. If not, repeat soak procedure.

REPAIR 03 — GAGGIA CLASSIC PRO OPV ADJUSTMENT

Symptom: Over-extracted shots, fast channeling, or pressure gauge reading 11–12 bar during extraction. Factory setting: 11–12 bar. Target: 9 bar. Method: screw adjustment (free) or 9-bar spring swap (~\$10).

Parameter	Value	Notes
Factory OPV pressure	11–12 bar	Varies by production batch
Target pressure	9 bar (gauge)	≈ 7.5–8.5 bar at puck
Adj. screw thread	M6 × 1.0mm	Flathead screwdriver
Pressure per full CCW turn	~0.8–1.2 bar	Counterclockwise = lower
9-bar spring cost	~\$8–12	Most precise method
OPV lock nut	10mm hex	Loosen before adjusting

- 1 **Access internals.** Remove 3 top panel screws + 2 rear screws. Lift top panel. OPV is brass cylinder on right side.
- 2 **Loosen lock nut.** 10mm wrench, one quarter turn counterclockwise.
- 3 **Turn adjustment screw** one full counterclockwise turn. Partially reassemble top panel.
- 4 **Test with blind basket.** Power on, heat to ready, lock blind portafilter, press brew. Read gauge at steady state. Target: 9 bar.
- 5 **Iterate.** Under 9 bar → quarter turn clockwise. Over 9 bar → quarter turn counterclockwise. Retest after each adjustment.
- 6 **Lock the setting.** Hold adjustment screw stationary. Retighten lock nut gently. Replace top panel fully.

QUICK REFERENCE — DESCALING CHEMISTRY

Machine Type	Max Concentration	Do NOT Use
Espresso — stainless (Breville)	2–2.5g citric acid/100ml	Undiluted vinegar

Espresso — brass (Gaggia)	1.5g citric acid/100ml	Phosphoric acid products
Pod machines (Keurig)	2g citric acid/100ml	Undiluted vinegar (seal damage)
Nespresso (plastic internals)	1g citric acid/100ml	Any concentration above 1.5g
Moka pot (aluminium)	1.5g citric acid/100ml	Bleach, strong alkalines