

**230 V.** Unplug the machine before opening the case. Even after the conversion this is still a machine with a heater, pressure and very hot water.

1 · Before the first power-up

- **Wiring** checked against the diagram, no bare strands, low voltage and mains routed separately.
- **Pressure sensor** (Pro only): wired per the wiring sheet, **sensor hose filled bubble-free** (syringe, or submerge it).
- **Leak test:** fill the tank, run water mode, watch the fittings with the case still open.
- **Idle pressure on screen = 0 bar.** A fixed high reading points to the wiring; see section 8.

2 · Wi-Fi

1. On first boot the screen shows only the Bluetooth icon: GaggiMate opens an open access point “GaggiMate”, without a password. If the display cannot reach the home Wi-Fi within 10 s at a later start, it opens it again until the next power cycle; the Wi-Fi details stay saved.
2. Join it and open **http://4.4.4.1/** → *Settings* → enter your Wi-Fi. *(The docs link to 192.168.4.1 at this point; firmware and display both say 4.4.4.1.)*
3. After the reboot it lives at **http://gaggiMate.local**.

3 · Temperature control

- Enter the **PID values** and the **temperature offset** in *Settings*. Starting points from the GaggiMate docs:

| MACHINE                 | PID                      | OFFSET |
|-------------------------|--------------------------|--------|
| Gaggia Classic          | 58.397, 1.027, 249.055   | 8      |
| Classic Pro / Evo / E24 | 58.397, 1.027, 249.055   | 8      |
| Rancilio Silvia         | 112.315, 0.658, 1436.887 | 5      |

- **Offset:** raises the *boiler wall temperature* by that amount. You set the brew temperature you want; the display shows the reading **minus** the offset. Only touch it once you measure at the puck.
- **PID autotune** (optional): menu *PID Autotune*, boiler **below 50 °C**. Fields: *Tuning Goal* (0 conservative to 100 aggressive, default 60), *Window Size* (1 to 10, default 4). The result is saved at once.

4 · Profiles

- Profile “**Default**”: 93 °C · one “Brew” phase · valve open · pump 100 % · 28 s · target ≥ 36 g.
- **Which one counts depends on the scale:** with a Bluetooth scale **weight** ends the shot, the duration does not count. Without a scale the phase ends after **28 s** and the weight target does nothing.
- Profiles are made in the **web interface**; only the ones **favourited** there show on the display.
- **1:2 recipe (with a scale):** target = intended yield; shot time is a grind setting.

5 · What the switches do now

| CONTROL                         | FUNCTION AFTER THE CONVERSION                                                                                   |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Power switch</b><br>(P1-P.3) | unchanged: mains on/off                                                                                         |
| <b>Brew switch</b>              | C.1-C.3 disconnected and insulated; via the buttons cable on <b>C.1/C.2</b> now a “ <b>brew</b> ” button        |
| <b>Steam switch</b>             | S.2 disconnected, S.1 extended; via <b>S.1/S.2</b> now a “ <b>steam</b> ” button                                |
| <b>Thermostats</b>              | both removed: BT.A/BT.B joined with the red bridge cable, ST.A/ST.B to the <b>SSR</b> through the yellow cables |
| <b>Ready lamp</b>               | no meaning left; the display temperature counts                                                                 |

Both thermostats are gone: temperature is controlled solely by GaggiMate through the probe, the PID and the SSR. The old trick of waiting for the lamp no longer applies.

6 · First shot

Let it heat up for **20-30 minutes**: the boiler is quick, the group head is not. The full routine with everything before and after is on **page 2, section 1**.

7 · Commissioning check

Load `GaggiMate_Self_Test.json` in the web interface under *Profiles* with **Import profiles** (tab *Utility*) and favourite it so it shows on the display. **Lock in a blind basket**, tank full, case still open. Start with **▶**, **||** aborts.

| PHASE             | EXPECT                                                                                                                                                                    |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Idle           | 5 s: everything quiet. The reading shows boiler pressure: about 0 bar cold, a few bar warm                                                                                |
| 2. Valve opens    | 4 s: audible click; warm, the pressure drops to 1 to 2 bar as it spreads into the group                                                                                   |
| 3. Pump to group  | 12 s: pressure rises within a few seconds to the OPV setting (about 8.5 bar) and holds                                                                                    |
| 4. Hold pressure  | 6 s: pressure sits still, every fitting dry                                                                                                                               |
| 5. Hold, pump off | 8 s: pump off, valve open. Pressure gives about 1.5 bar in the first few seconds, then holds; if it keeps falling, something leaks                                        |
| 6. Valve closes   | 4 s: second click, the group is relieved into the drip tray; the reading stays put. If it drops by several bar, the boiler-side seat of the solenoid valve is not sealing |

**Abort and unplug:** water escapes, phase 3 builds no pressure, or a fixed high reading stands (section 8).

Then without the blind basket:

- ☐ heat-up runs, the LED on the SSR lights
- ☐ steam mode reaches its target
- ☐ brew and steam switch each trigger on the display
- ☐ after 30 minutes the temperature sits still

8 · If something is off during setup

| SYMPTOM                                               | CAUSE ACCORDING TO THE GAGGIMATE DOCS                                                                      |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| pressure stuck around <b>14.5 bar</b>                 | the sensor's black wire is not making contact                                                              |
| pressure reads <b>16 bar</b>                          | red and black swapped at the board                                                                         |
| pressure stays at <b>0 bar</b> while brewing          | sensor not connected properly, wires not stripped to 11 mm, or tightened so far that the intake is blocked |
| <b>pump and valve dead</b> , everything else fine     | L and N swapped at the board                                                                               |
| <b>brew switch</b> triggers steam mode                | the green wires were swapped during installation                                                           |
| <b>no picture</b> although the LEDs are on            | re-check the screen's ribbon cable                                                                         |
| temperature <b>jumps around</b>                       | the probe's ferrules are not fully seated; route the wire away from mains                                  |
| <b>autotune</b> does not finish or returns odd values | always start from a <b>cold</b> machine                                                                    |

9 · Keeping up

- **Shot history** in the web interface: every shot with its pressure, flow and temperature curve, the right place to judge a recipe change.
- The **update icon** on the standby screen flags new firmware; if something misbehaves, try the **troubleshooting page** of the docs or Discord **#gaggiMate-help**.

1 · The shot: before, during, after

BEFORE

1 · Switch on, touch the screen to leave standby; it does not heat before that.

2 · Heat up 20-30 min, portafilter locked in so it heats too, cup on the warming tray.

3 · Pick the profile: shows the favourites, confirm with the check mark; the header gives target temperature and time.

4 · Flush: portafilter out, hold : 5 s of water through the group. Wait until the display is back at the target.

5 · Wipe the shower screen, drip tray and basket dry, dose, distribute, tamp, cup on the scale.

THE SHOT

6 · Start with or the brew switch (off again afterwards). It ends after the set time, with a scale at the target weight; aborts.

STEAM AND MILK (FOR A CAPPUCCINO ONLY)

7 · Select **Steam**, wait for the target, froth; adds pump support.

8 · Afterwards **wipe the wand and give it a short blast**: dried milk is the usual cause of a blocked tip.

9 · **Back to Brew**: boiler far too hot, run water through the group until the display is back at the brew target.

AFTER

10 · Note **yield and time**, then **correct at the grinder only**: too fast → finer, too slow → coarser.

11 · **Knock out the puck, rinse the basket, purge briefly**: washes the screen. Lock the portafilter back in.

2 · How the machine should be set

| CONTROL             | POSITION                                                                                                                     |
|---------------------|------------------------------------------------------------------------------------------------------------------------------|
| Power switch (left) | on, lamp lit. It switches everything, GaggliMate included: off means dark screen, no heating, no pump                        |
| Brew switch         | off. The start button now: on starts the shot, off ends it                                                                   |
| Steam switch        | off. Left on, steam mode is active: the boiler heats to steam temperature, and the brew switch only switches back to brewing |
| Ready lamp          | meaningless, both thermostats are gone                                                                                       |

After 15 min without input: standby, no heating (*Standby Timeout*). A schedule can wake it (*Auto Wakeup*, off by default).

Reminders to flush, backflush or descale are not shown by firmware v1.81.

Main menu: Brew · Steam · Water · Grind, at the bottom returns to standby; gauges temperature left, pressure right.

Normal readings: standby 0 bar, no heating · heating up: temperature rises, LED on the SSR lit · ready: hovering around the target, about 0 bar · brewing: a few degrees below the target, pressure at the OPV setting (8.5 bar).

Wi-Fi icon and clock missing in standby: the display did not reach the home Wi-Fi at start and runs as access point "GaggliMate". Switch off and on again.

3 · Volumetric: an estimate instead of a scale

On GaggliMate Pro (pump dimming and pressure sensor) the controller works the output out as it goes: whatever the pump delivers and does not go into building pressure runs through the puck. Once the puck resistance settles after the first drops, that flow is added up.

- **Millilitres of liquid**, not weight in the cup, and only from the first drop on.
- A Bluetooth scale always takes priority. The estimate **ends a shot on nightly builds only**; on a release build without a scale, time still ends it.
- **It is always recorded** (a curve in the shot history), **but never gets more accurate by itself**: it rests on a fixed pump curve (*Pump Flow Coefficients*). Calibrating: both values × cup / estimate, averaged over a few shots below the OPV setting (an open OPV skews it).
- **Lead time**: the stop comes 0.8 s early (*Brew Delay*), corrected by *Auto Adjust* against the stop source: with a scale the cup, otherwise the estimate itself.

4 · Cleaning and intervals

| WHEN                 | WHAT                                                                                                                                                                                                                                                                                               |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| After every shot     | section 1, plus wipe the steam wand                                                                                                                                                                                                                                                                |
| Daily                | portafilter and baskets in hot water, empty the drip tray, wipe the case                                                                                                                                                                                                                           |
| Weekly               | backflush with a <b>blind basket and clean water</b> , several short cycles; inspect the shower screen. A profile with the valve closed saves working the switch                                                                                                                                   |
| Every 1-2 weeks      | <b>Cafiza</b> : 1 tsp (about 5 g) in the blind basket, flush 5× · portafilter out, 1 L bowl under the group, flush 5× with clean water · spout off, portafilter into the bowl ( <b>handle out</b> ), 3 tsp Cafiza, top up with warm water, soak <b>30 min</b> · rinse well, discard the first shot |
| Monthly              | unscrew shower screen and holder and clean them, check the group gasket for cracks                                                                                                                                                                                                                 |
| About every 2 months | <b>descale</b> (interval from the original manual, depending on water hardness)                                                                                                                                                                                                                    |
| Yearly               | replace group gasket and shower screen, check the O-rings, a thin film of <b>food-safe</b> silicone grease on the sealing flanks                                                                                                                                                                   |

**Aluminium boiler**: backflush detergent must **never** reach the boiler, only portafilter, baskets and group. Descale with an **aluminium-safe** descaler (Gaggia recommends tartaric acid), mildly dosed and not for too long.

Descaling per the original manual: screen off · solution into the tank · pump 15 s · a few seconds through brew head **and** steam nozzle · wait 20 min · repeat until it has run through · rinse well · refit the screen.

5 · When something is off

| SYMPTOM                                     | CAUSE                                                                                  |
|---------------------------------------------|----------------------------------------------------------------------------------------|
| the shot does not stop at the target weight | without a paired Bluetooth scale only the phase duration counts (page 1, section 1)    |
| the machine does not heat                   | it sits in standby; it goes there by itself after 15 min without input                 |
| temperature oscillates or overshoots        | small overshoots are normal for a PID; retune if pronounced                            |
| a cold start does not show room temperature | the probe has an offset at low temperatures; it is gone at brew temperature            |
| some pressure stands while hot and idle     | thermal expansion in the closed boiler; a short purge resets the reading               |
| brew switch does not start a shot           | steam mode active (steam switch on): the first switch-on only switches back to brewing |
| the pump runs while steaming                | intended: Pro Steam keeps water in the boiler                                          |

Reference figures for this machine: Gaggia Classic 05/2004, 230-240 V, 1425 W, aluminium boiler, three-way valve · GaggliMate Pro Rev 1.1 with pressure sensor, Finglai SSR-40DA · PID 36.526, 0.450, 389.444 (autotune), offset 8 · brew pressure **8.5 bar** (OPV as found) · starting recipe 16 g → 30-32 g in about 28 s at 90-93 °C.

Sources: GaggliMate docs [docs.gaggimate.eu](https://docs.gaggimate.eu) (*Configuration, Troubleshooting, Touch Screen Usage, First Start, Profiles, Installation Gaggia Classic 1991-2014*) plus the wiring sheet linked there · firmware source [github.com/jniebuhr/gaggimate](https://github.com/jniebuhr/gaggimate), release v1.81 as on the machine, for the stock profile, standby, scale, switches, flush, AP 4.4.41, autotune · descaling per the original manual ([gaggia-na.com/pages/gaggia-classic-manuals](https://gaggia-na.com/pages/gaggia-classic-manuals)) · example figures: own measurements, [ulrichlehner.com/blog](https://ulrichlehner.com/blog) · cleaning intervals other than descaling are experience values · icons: Uicons by Flaticon.