User manual Slim Jim Idrocompresso espresso machines

(Original instructions)

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Designation

This manual applies to the Slim Jim 2-group (Duette) and 3-group (Triplette) espresso machines with Idrocompresso operation manufactured by Kees van der Westen Espressonistic Works B.V.. A separate rotational pump with electric motor and adjustable pressure reducer can be part of the appliance.

Precaution

Hot surfaces!

Parts of the machine will be hot when the machine is turned ON.

- The cup tray is equipped with an active heating element and can reach temperatures up to 75°C.
- The metal groups are intended to radiate heat and can reach a set-temperature of up to 99°C.

Hot water and/or steam!

When the machine is heated up, hot water and steam can escape from various parts of the machine upon manipulation of a corresponding interface (valve, switch, touch-button, …).

- Activating the group will lead to water being dispensed with a temperature of up to 99°C.
- Activation of the hot water dispense can lead to steam escaping with temperatures up to 130°C as well.
- Activating the mix-water dispense can lead to overheated water (steam) being dispensed when the cold-water addition is not set correctly.
- Opening the steam tap will start steam escaping from the steam wand-tips, the steam can reach temperatures up to 130°C.

Safe operation

- It is possible that the brew-lever returns to resting position with high velocity, force and momentum. Keep body-parts other than your hand away from the reach of the brew-lever.
- The espresso machine has to be placed in a horizontal position on a sturdy and flat surface.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- The new hose-sets supplied with the appliance are to be used. Old hose-sets should not be reused.
- Intended use of the appliance is restricted to well-trained personnel only.
- The appliance must be installed in locations where it can be overseen by trained personnel.
- The appliance may not be left unattended when there is the possibility that children and/or vulnerable people can reach the machine.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- The mains electricity the appliance is connected to must include a residual-current-circuit-breaker of 30 mA.
- The appliance may not be cleaned with the aid of a water jet.
- The appliance is not suited for outdoor use.
- Ambient temperature for correct operation of the appliance is 10-30°C (50-86°F).
- If ambient temperature falls below 5°C (41°F), keep the machine at ECO or ON to prevent freezing of water inside the machine.
  Whenever the machine has been at freezing conditions, ask a technician to start-up the appliance again.
- It is advised to install a leak prevention system as the appliances is directly connected to the water mains. An unattended leak can cause serious damage to the premises.

Water Quality

Have a water treatment system installed and its function checked regularly. The treatment system should at least have a carbon block that not only traps drug-remnants, Chlorine and organic compounds but also prevents rigid particles >30 µm to enter the pump.

Optimally, the water fed into the espresso machine would fall in the higher part of the SCA "core zone", see Figure 1, and have a pH of 7.0-7.5 (at 25°C).

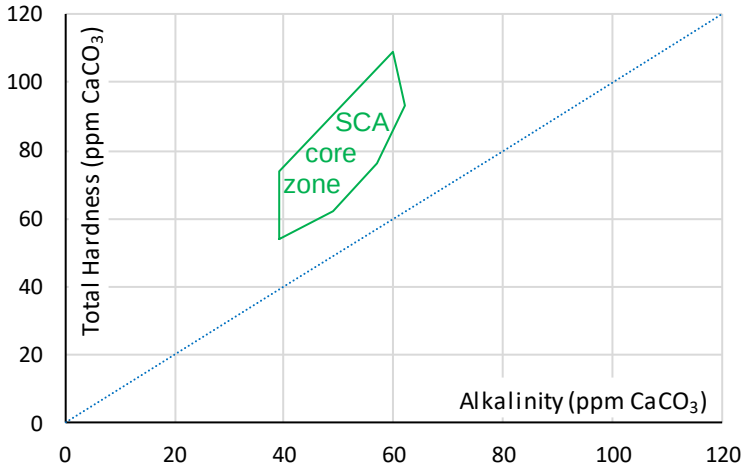


Figure 1. Alkalinity vs-Total Hardness graph showing the SCA "core zone" in green outline.

Besides the Alkalinity and Total Hardness requirements, the water should have the following properties:

Parameter	Target	Acceptable range	unit
Total Hardness	72	50-175#	ppm
Total Alkalinity	40*#	40-75#	ppm
pH	7.0*	6.5-7.5*, 6.5-8.0#	--
Electrical conductivity		< 3 times Alkalinity (in ppm)#	µS/cm[1]
Total Dissolved Solids	150*	75-250*	ppm[1]
Calcium Hardness	51-68*	17-85*	ppm
Sodium	10*	at or near 10*	ppm
Sulphate	30	0-50	ppm
Chloride	0	0-30	ppm
Silica	0	0-5	ppm
Odour and colour	clean*, fresh*, odour free*, clear*		
Taste influencing organic compounds*#		not present	
Chlorine#, Hypochlorite#, Chloramines#			
Iron#, Lead#, Manganese			

* SCAA Technical Standards Committee, 2009: water properties for optimum taste.
# Values from "The SCAE water Chart" (2015?).

Table 1. Showing parameter values for water meant to brew coffee with.

Water with properties that lie within the SCA "core zone" and has correct pH combines technical aspects enabling a safe operation and sensory aspects yielding a high quality brew, provided the other parameters are met as well. High brew-ratio's, as for espresso, shift the optimum of total hardness and alkalinity towards higher values within the core zone.

[1] The conversion from electrical conductivity to TDS depends heavily on the water composition and temperature, yielding results that can vary significantly. Additionally, even if the estimated TDS value is accurate, it does not contain any information about what the TDS is actually made up of.

Water mains pressure

For best performance, the Idrocompresso requires that water supply pressure at the machine is constant at a setting within the range 3.0 - 4.0 bar. Since some pressure is lost within a water treatment system, water mains pressure should be a little higher than 3-4 bar. The optimum water pressure will depend on the characteristics of the prepared coffee-bed and should be established experimentally (see page 23).

The machine comes with a pressure reducer that will decrease higher pressure to the set value. It will even out pressure fluctuations, provided that mains pressure is always high enough (constantly above the set pressure). See Figure 2: when your water line pressure is high enough to produce over 4 bar downstream of the water treatment system, you will not need a pump to increase water pressure. If water pressure ever drops to below 3 bar, we advice that you install a pump. If water pressure at any time of operation is known to fall below 2 bar, the optional pump (or other pressure increasing device) is a must.

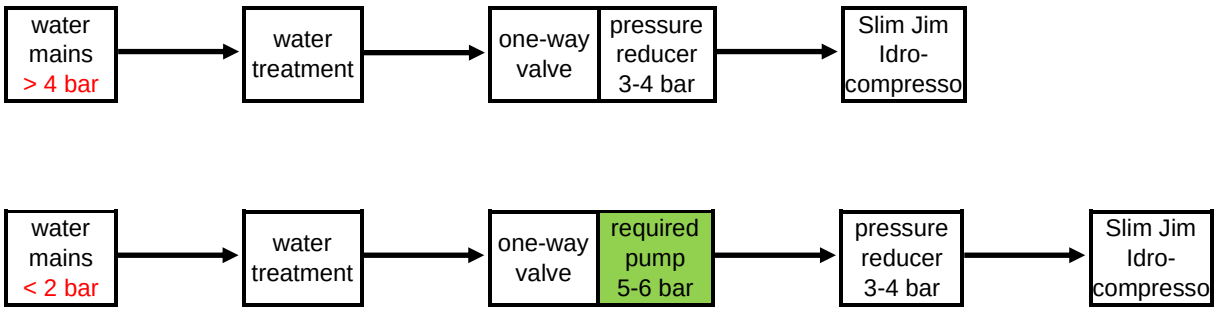


Figure 2. Depending on water mains pressure you may need a pump or not. With water mains pressure in the range 2-4 bar the users should experimentally decide if the pressure at the machine is high enough for proper pre-infusion.

Parts identification

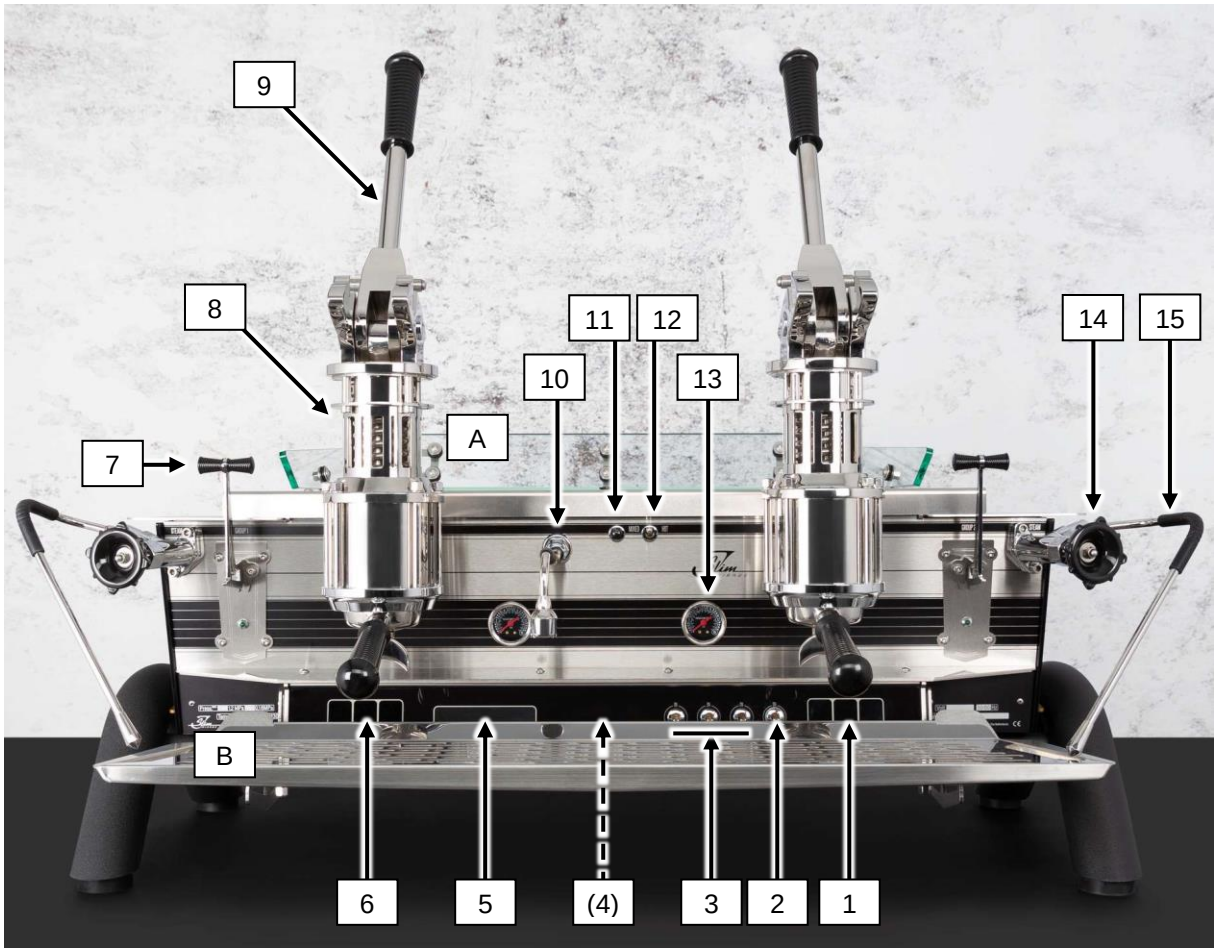


Figure 3. Showing the main operational parts of the Slim Jim Duette Idrocompresso version with fat-tube legs. The Slim Jim Triplette has three groups but its functions are identical to the Duette.

1. Right hand group 3-digit display (shot-timer and/or temperature)
2. Main switch (switches power to everything but the heating circuits)
3. Heat switches 1, 2 and 3 (switches power to steam boiler and group heating)
4. (Centre group 3-digit display; only on Triplette: shot-timer and/or temperature)
5. Capacitive interface and display of controller
6. Left hand group 3-digit display (shot-timer and/or temperature)
7. Flush and relief handle
8. Group
9. Group lever
10. Hot water spout
11. Hot water button switch (mix-water)
12. Hot water toggle switch (hot water only)
13. Coffee brew pressure gauge (right group)
14. Steam valve (right)
15. Steam wand (right)

A. Cup-rack (glass-look version)
B. Drip-tray

Not visible on this photo:

- Green indicator lights for heating spirals (one for each spiral; see page 33)
- Connection for external temperature probe (see page 35).

Bar height

It requires force to pull the lever. For easiest operation it is advised to have the centre of the handle at approximately the same height of the operators' eyes. Ideal bar height thus depends on average length of the operators and type of machine legs.

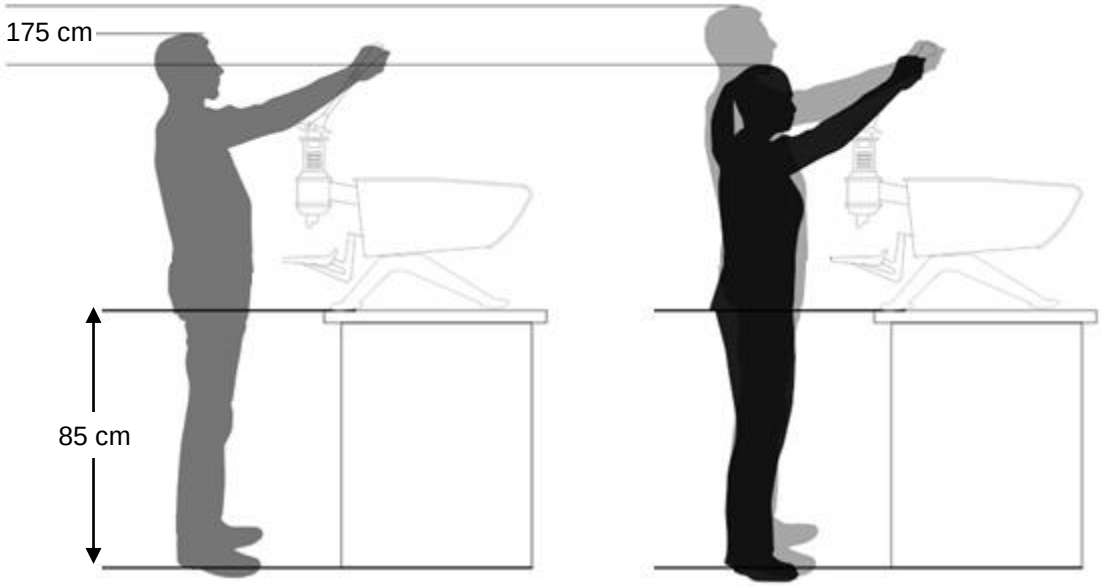


Figure 4. Ideal machine height (left) will be a compromise with baristas of different length (right). When the operator is 175 cm tall, the ideal bar height will be 85 cm.

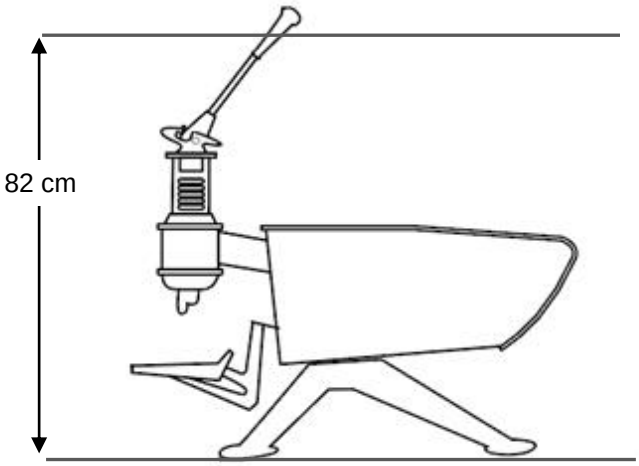


Figure 5. Height of centre of handle above bar is 82 cm.

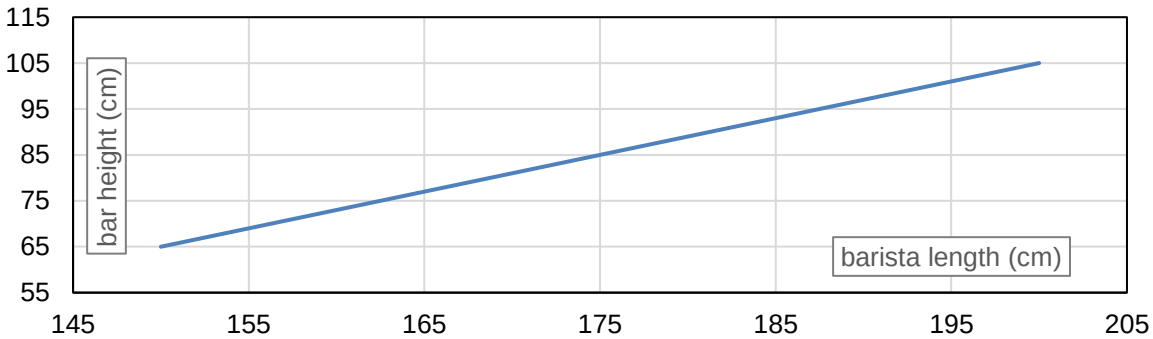


Figure 6. "Ideal" bar height as function of barista length.

Operational features

MAIN switch

Notes!
The machine will re-start over and over again when the capacitive screen is touched during start-up.

Dirt and remnants of detergent may unexpectedly activate the capacitive screen. If the machine does not start up properly, clean the surface of the capacitive screen with plain water and a soft cloth.

The main switch (see Figure 7) is located at the right hand side of the machine and has 2 positions:

DOWN=OFF Power to the controller is disconnected. When the machine is functioning correctly, all heating is also off, whatever the position of the heat switches. With a malfunction it is however possible that one (or more) heating elements/sections are still active.

UP=ON The machine is connected to the electric mains, but power to the heating elements will remain disconnected as long as the heat switches are still off. The machine functions but the boilers will not heat. The optional cup-heater may function if it is turned on.

Figure 7. Showing the three HEAT switches, the MAIN switch and a blank TEMP/TIMER (3-digit) display.

HEAT switches

Heating power to the machine is split in three different circuits. Each circuit can be (dis-)connected individually. The heating element of the steam boiler consists of a lower, middle and upper section.

Notes!
The boilers will not heat up when the HEAT switches are in the OFF position.
With the main switch in OFF position, the boilers should not heat up, irrespective of the position of the HEAT switches. With a malfunction, heating may be ON even with the main switch in OFF position.

1. HEAT 1 powers the left group heating element and the lower section of the steam boiler heating element.
2. HEAT 2 powers the central (Triplette) or right (Duette) group heating element and the middle section of the steam boiler heating element.
3. HEAT 3 powers the right group heating element (Triplette only) and the upper section of the steam boiler heating element.

Circuit breakers

The machine has an individual breaker for each of the four electrical circuits in the machine (main-circuit plus 3 heat-circuits). When one of the circuits has a malfunction (electric short), the corresponding breaker will cut power to that circuit only. If the main-circuit breaker is activated the machine will be completely inoperable but if a single heat-circuit breaker is activated the rest of the machine will remain functional.

The circuit breakers are located within the electrics tray and cannot be accessed by the barista. If a circuit breaker is activated, have a technician check and repair the machine as soon as possible.

Brew-lever mechanism

Pulling the brew-lever towards you activates valves, lifts a piston and shortens a spring. The brew-lever will lock into position when maximum upward-travel of the piston is reached. When the brew-lever is very close to the locking position, a valve is opened such that water can flow into the cylinder and pre-infusion starts under incoming water pressure. When the machine is equipped with the optional pump, the pump will activate at that moment as well. Active-duration of the pump can be adjusted per individual group in the “water timer” section of the Barista level under “PUMP-ON-TIME”.

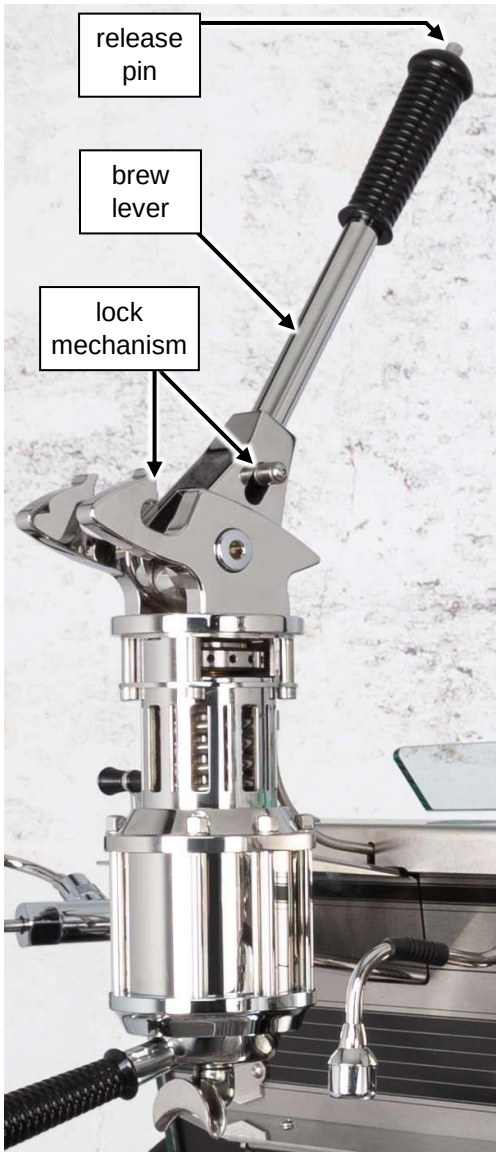


Figure 8. The brew-lever mechanism.

In a lever-group, spring force on a piston is used to obtain elevated water pressure onto the coffee bed. At resting position the spring is already shortened, pulling the brew-lever towards you shortens the spring even more. With the brew-lever returning to resting position, water pressure onto the coffee-bed thus decreases during the brew as the piston moves down and the stressed spring relaxes. Typical lever mechanism brew-pressure profile from start to end of a brew is approximately 9 to 5 bar.

You would normally perform a short flush (see next), lock in the prepared portafilter, confidently[2] pull the brew-lever into locked position, wait until you see the first drop of coffee in the cup and then release the brew-lever to extract at elevated pressure.

Pressing the release pin on top of the grip will release the lock, the stressed spring then forces the piston down which pressurises the water flowing through the coffee-bed. Very shortly after the brew lever has left lock-position a valve in the machine closes such that no more water can flow from the machine towards the cylinder or vice versa.

Total down-travel of the piston will result in approximately 60 ml of water being pushed through the coffee-bed, enough for two single espressos.
When the lever returns to resting position, the electric circuit is opened, the relief valve will de-activate.

The Bowden cable on the back of the brew-lever mechanism operates two switches inside the machine. The first switch will start/stop the shot-timer and close the relief valve, the second switch will allow water to flow from the machine to the cylinder and instructs the optional pump to start.

☠ Danger
Despite the measures taken to reduce the danger, under certain circumstances (obstructed water flow, no coffee-bed, portafilter not properly locked in) it is possible that the brew-lever returns to resting position with high velocity, force and momentum. Keep body-parts other than your hand away from the reach of the brew-lever.

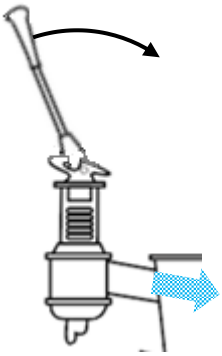
[2] If you pull the brew-lever (very) slowly or when the coffee-bed is not prepared properly, it is likely that air is sucked through the coffee-bed into the cylinder before water enters the cylinder. Upon release, the brew-lever will not feel firm and the shot volume will be less than expected.

Flush/relief unit

The function of the flush/relief handle depends on the position of the brew lever:

flush

If the brew lever is in resting position (up) pressing the handle shortly will temporarily activate 2 valves (and engage the optional pump), resulting in a flush of adjustable amount of seconds.
The LED is lit during the flush.



relief

If the handle is pressed during a brew, 2 valves are dis-engaged (and the optional pump dis-engaged when no other group is forcing the pump to be active) such that remaining pressurised water is led to the drain.
It effectively stops a brew-in-progress and the brew-lever will return to resting position quickly. This function can be used to pull a ristretto without mess.
The LED is lit during a brew.

Figure 9. Flush/relief unit.

Flush-duration can be adjusted in the “water timer” section of the Barista level under “FLUSH TIME”.

Notes!
Be careful when using the relief handle, the brew-lever will quickly return to resting position.

When you pull the lever out of resting position to make a new brew while a flush is in progress, the flush is ended immediately.

Adjust resting spring length to match groups

Every spring that comes from the manufacturer has some tolerance in its force-displacement trajectory. To even out differences between springs and thus brew-pressure profiles between groups, the “resting” length of the spring can be adjusted by approximately 10mm. On a new machine, spring force will be matched. You may have to adjust the resting spring length after prolonged use or machine maintenance.

Notes!
Resting spring length should only be adjusted with the brew-lever in upper position as this results in less strain on the mechanism.

The adjustment allows for a limited difference between minimum and maximum setting. It is not meant to drastically change the pressure profile of the brew.

procedure

1. Check maximum spring force of groups (highest brew-pressure per group).
    a. Fill a portafilter, equipped with blind-filter, with water and lock in the group.
    b. Flush the group (with handle).
    c. Pull the brew-lever into locking position, then unlock.
    d. Relief the group (with handle) such that the brew-lever returns to resting position.

a-d is done to reduce the amount of remaining air in the group.

    e. Pull the brew-lever into locking position again, wait until pressure is stable, then unlock.
    f. The brew-lever should remain in slightly elevated position and feel firm when pushed up, if not: repeat b-d.
    g. Make a note of the pressure displayed on the pressure gauge[3].

    h. Repeat steps a-g for the other group(s).
    i. Determine what group to adjust.
    Normally you will increase the lower pressure until it matches the highest pressure.

Figure 10. The spring-length adjuster disk. Insert a tool in one slot on each side of the group, use these to twist the disk.

[3] Check pressure quickly. When cold water enters the group it gets locked between the blind-filter and a check-valve. If that colder water heats up, it expands which will lead to extra pressure on top of the spring pressure and you will see a slow increase in pressure while watching the gauge. To eliminate for this, the procedure could be done with the heat turned off. However, friction in a cold group is higher than in a warm group which will lead to other uncertainties in the adjusting procedure.

2. Adjust initial spring length.
    a. Make sure that the brew-lever is in resting (upper) position.
    b. Insert one special tool on one side of the adjustment ring (see arrow in Figure 10), the other tool on the opposite side.
    c. To increase pressure turn the adjustment ring down (clockwise as seen from above) while exerting even momentum on both special tools.
    d. Check the maximum water pressure of the group again (see above).

> **△ Caution!**
> Over-shortening of the spring will lead to serious damage of the lever mechanism.
> When the spring gets shortened too much, the individual coils will touch each other and it may be difficult, if not impossible, to get the brew-lever into locking position. When you encounter more than usual resistance before the brew-lever locks, turn the adjustment disk a little upwards until locking is easy again. Then adjust the other group(s) by decreasing its (their) initial spring force.

    e. Adjust initial length again if not yet satisfactory.

Temperature display

Each boiler is equipped with its own temperature controlling system. Measured temperature values can be displayed 2-ways: on the control panel and on the large 3-digit displays underneath each group (see Figure 11). In the barista menu, the temperature unit can be switched from °C to °F.

On control panel

The operational window of the CONTROL PANEL will show the temperatures of all coffee boilers and the steam boiler and will continue to do so during a shot such that information about temperature is always real-time available during a shot.

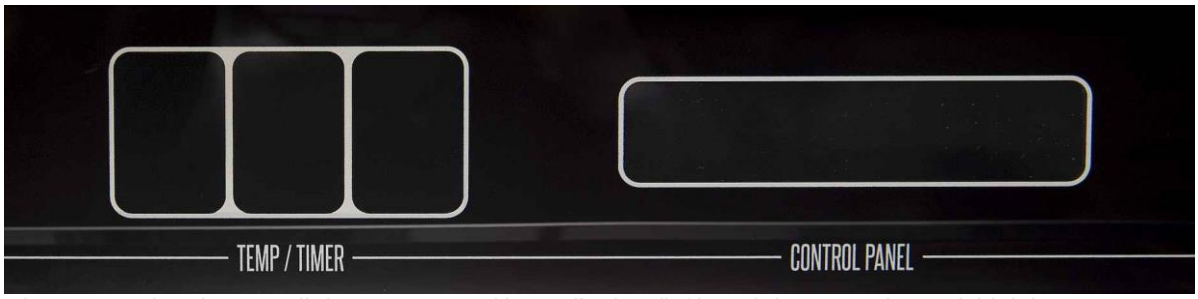


Figure 11. Showing a 3-digit temperature/timer display (left) and the control panel (right).

On 3-digit displays

Factory setting is that a 3-digit display TEMP/TIMER will display the temperature of the corresponding group during idle. It changes to a shot-timer when the group is activated. The shot-time will be replaced by the boiler temperature a (user-adjustable) moment after the shot has ended. When a coffee boiler is at ECO, the 3-digit display goes blank.

Shot time

The shot time gives an excellent indication of the brew process and can assist the trained barista to refine that process.

The large 3-digit displays underneath each group (TEMP/TIMER; see Figure 12) function as shot timers and/or temperature display. In factory setting the displays show at idle the temperature of the corresponding coffee boiler. As soon as the lever circuit is closed (the lever is taken out of resting position) the function changes to shot timer, starting at zero, and counting starts. The timer stops counting when the lever has returned to resting position or when brew is stopped (using relief) and the measured time remains displayed for an adjustable amount of seconds after the group valve was closed upon which the display changes back to showing the temperature.

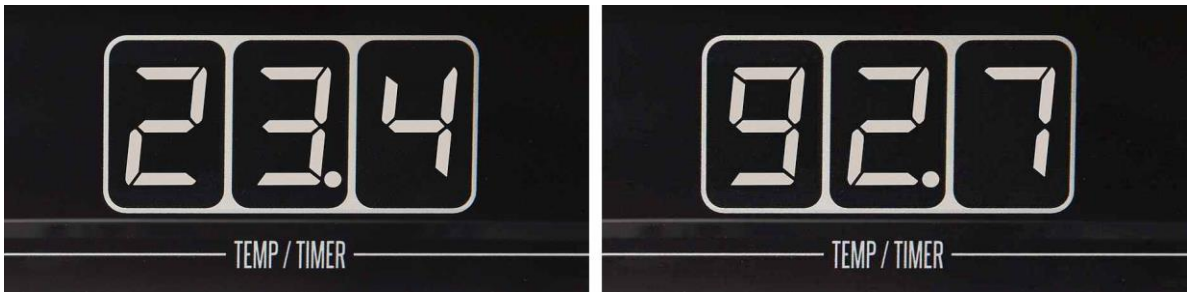


Figure 12. A 3-digit display showing shot time (left, in seconds) and the same display showing temperature (right, in degrees Celsius).

Pressure gauge

While brewing a real shot the coffee-bed becomes less permeable during wetting (pre-infusion stage) and pressure will rise to water mains pressure (or pressure reducer setting) while the brew-lever remains locked. Immediately after unlocking the pressure will increase to (ideally) 8.5-9 bar after which it will slowly decrease during the brew. The pressure gauge displays the pressure in the line that runs from group-valve to group-screen. This means that when a group is inactive or when no portafilter is locked in, the pressure gauge will display 0 bar.

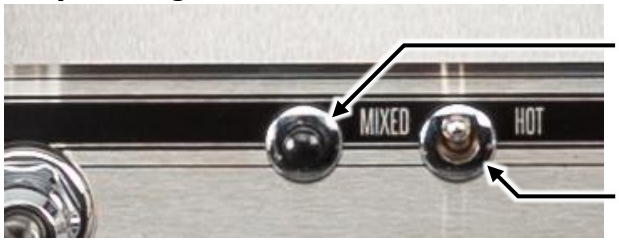
Figure 13. The brew pressure gauge.

The pressure gauge shows the actual pressure on the coffee bed.

When the group is inactive, the pressure displayed is thus (very close to) 0.

When 8.5-9 bar pressure is not reached at the start of a normal brew, either the spring length is not set correctly or the coffee bed was not able to produce enough counter pressure. Insufficient counter-pressure can be caused by too few and/or too coarse coffee particles, channelling in coffee bed during extraction, etc.

Dispensing hot water



Push button switch for timed dispense of non-sputtering mix-water.

Momentary toggle switch for dispense of water directly from steam boiler.

Figure 14. The hot-water toggle switch and mix-water push button switch.

Mixed water

Press the mixed-water push button switch down briefly. The flow will stop when the pre-set time has elapsed, or when the switch is pressed down briefly again, whichever comes first. The pre-set dispense time can be adjusted in the Barista-menu.
A technician can manipulate the cold inflow with a set-screw on the manifold inside the machine to optimise the mix-water temperature.

Hot water

Press-hold the toggle switch down to start water flowing directly from the steam boiler to the spout. It will take a moment before the water starts to sputter indicating that boiling water is being dispensed. The duration of that moment depends on the temperature of the intermediate parts just prior to pressing the switch. The flow will stop when the switch is released.

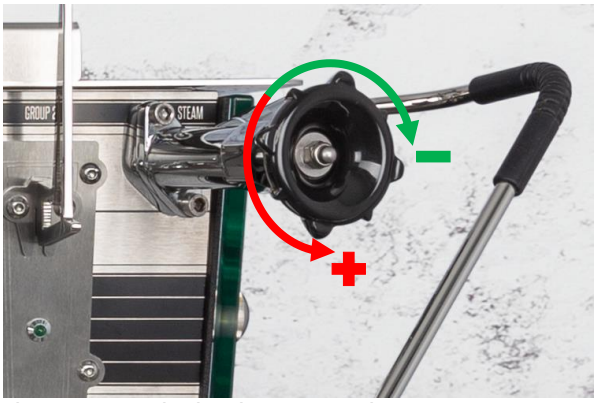
Note!
Hot water can only be dispensed when the steam boiler is above 100°C as steam pressure is the means to push the water out of the boiler. When the steam boiler is not at operational temperature yet, the mix-water temperature will be lower than the set temperature.

Steaming

The Slim Jim has two identical mechanical steam valves that come in two versions: “twist-knob” (see Figure 15) and “flip-flop” (see Figure 16).

Before steaming milk it is necessary to open the valve for a short while to purge water from the steam wand and heat up the wand and valve. The purged water is condensate from steam coming in contact with the cold tubing, valve and wand. Position the tip of the steam wand over the drip tray when purging the condensate.

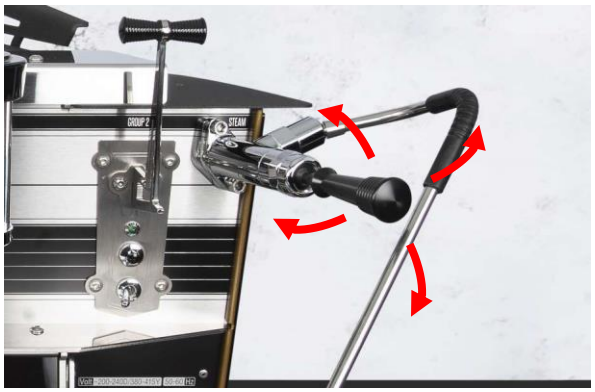
Directly after steaming milk, flush the steam wand with a little steam and clean the tip of the steam wand with a damp cloth. For hygienic reasons, do not use this cloth for anything other than cleaning the steam tip.



Twist the valve-knob to open/close and adjust the steam flow. From fully open to fully closed is about ½ turn, there is no need to close the valve firmly.

If the optional foot-operated steam valve is mounted, do not fully close the mechanical valve.

Figure 15. Twist knob steam valve.



Move the knob of a flip-flop valve in any direction to open the valve. The knob will lock into position when moved far enough from the central position.

Figure 16. Flip-flop steam valve.

Foot operated steam valve

The twist-knob version of the valve can optionally be equipped (from new but also after-market) with a foot operated solenoid valve. Although possible, we advise not to install the foot operated steam valve when the machine has so-called flip-flop steam valves.
When the optional foot operated solenoid valve is mounted, the twist-knob is used to adjust the flow of the steam only. The solenoid valve is opened and closed by an air-switch that is activated by a bellows on the floor. Of course, when the mechanical valve is turned close, no steam will flow from the wand when the solenoid valve is activated.

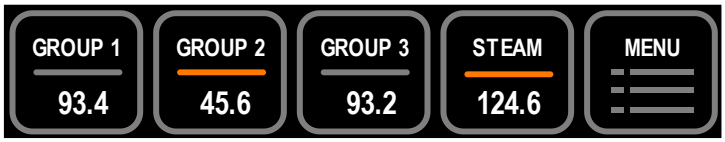
Note!
It is advised not to decrease the steam power by lowering the steam boiler temperature. A lower boiler temperature will reduce the amount of steam that can be produced and the temperature of the mix-water dispensing.

Control panel

Note!
Remnants of detergent may unexpectedly activate the capacitive screen. For that reason you should use plain (warm) water and a soft cloth only to clean the plastic front panel.

The control panel of the Triplette and Duette are very similar and have a 5-“button” capacitive touch screen. When at operation, the display will show the temperatures in °C or °F without the temperature unit. The reason for this is that not showing the unit allows the use of a bigger font for the temperature values. The user will be aware of the local unit-setting and realise that normal brewing is at 88-95°C or 190-203°F. The centre-line will turn orange when the controller sends out a signal to heat.

operational window Triplette with temperature in °C



the controller sends out a signal to heat group 2 and the steam boiler

operational window Duette with temperature in °F

the Duette does not have a 3rd group

Change individual boiler to ECO and back

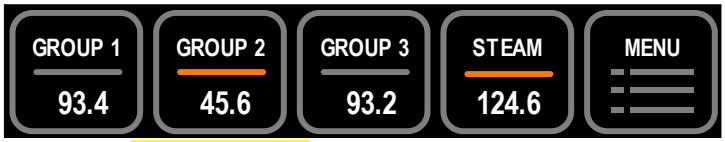
The factory set operational temperatures of the boilers are 93.0°C (coffee) and 125°C (steam) (199°F and 257°F) respectively. 125°C is equivalent to approximately 1.35 bar steam overpressure.

Each boiler can be individually set to a lower ECO temperature (50°C, 122°F for the coffee boilers, 70°C, 158°F for the steam boiler). At the lower temperature setting up to 80% power is saved while the boiler will still have a short heat-up time (appr. 8 minutes). In the “operational window” of the interface, touch-hold the button (about 6 seconds) of the boiler that you want to change until the colour of the button-frame changes to green and the temperature value is replaced with ECO. Touch-hold again and the corresponding boiler will heat up to operational temperature again.

An individual group set at ECO will also turn to normal operation when the corresponding brew-lever is manipulated. This “first manipulation” will not start a brew.

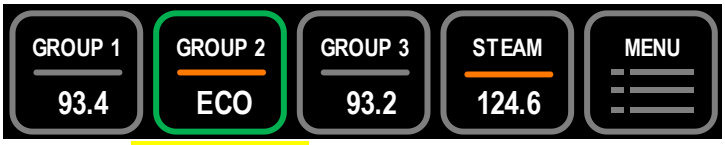
When the steam boiler is set to ECO, using any of the groups to make a brew or pressing the mix-water switch will turn the steam boiler back to normal operation.

operational window



touch-hold (6s)

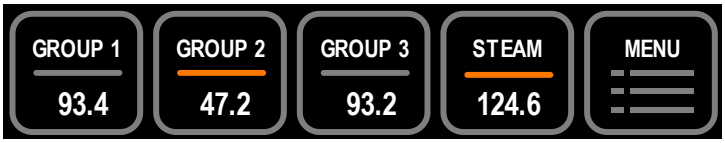
⇩



the green frame and word ECO indicate that setpoint is ECO

touch-hold (6s) or operate the lever

⇩

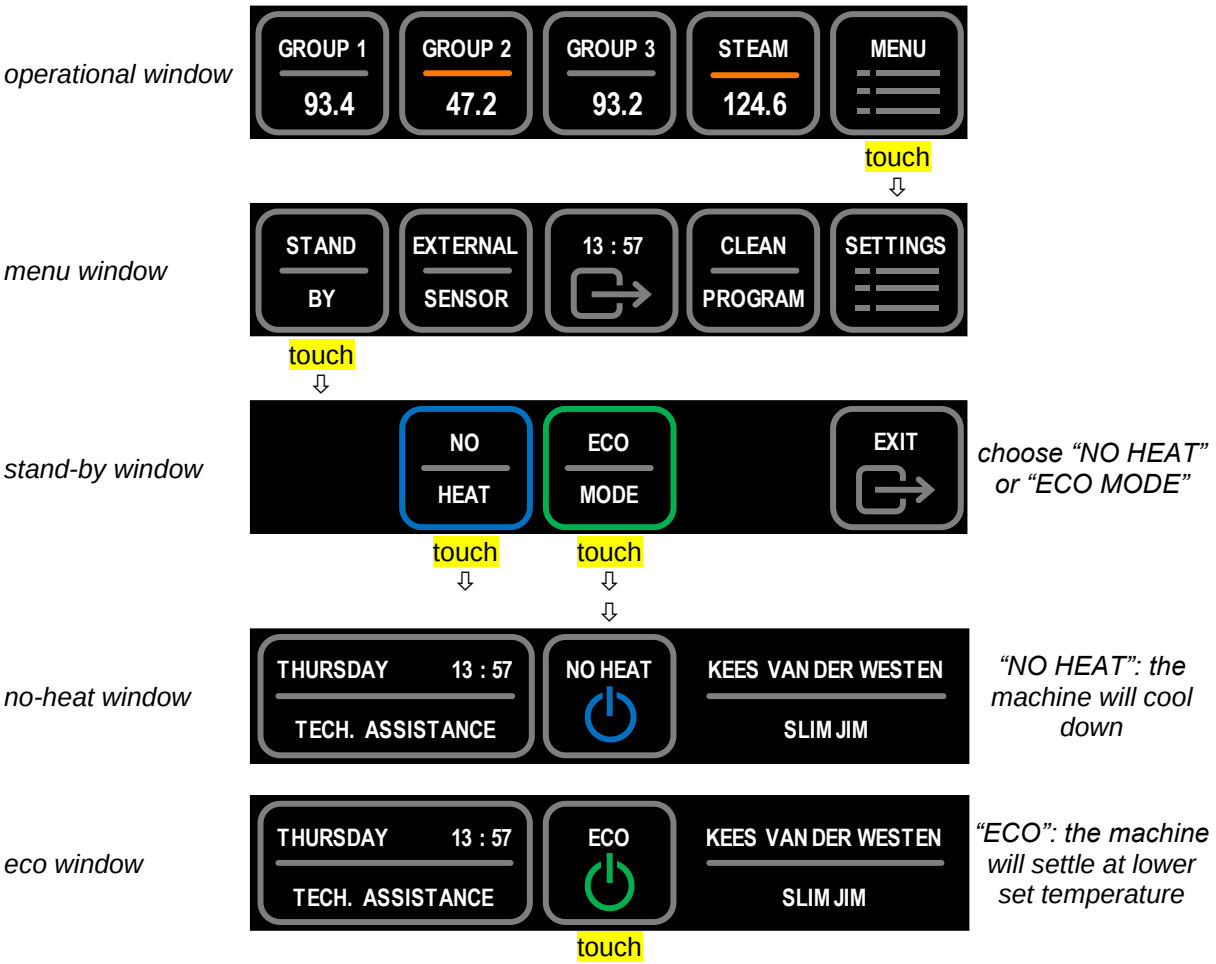


Note that in the example above group 2 is at 45.6°C at moment of switching to ECO. As the ECO temperature of the coffee-boilers is 50°C, the boiler will continue to heat until 50°C is reached. The centre line will thus be orange in this situation.

Go to stand-by

You have to leave the operational window to go to stand-by. In stand-by the controller is in sleeping mode and the machine does not operate. There are two stand-by modes: “NO HEAT” and “ECO-MODE”. At “NO HEAT” there is no power to the heating elements and the boilers will (eventually) cool down to room-temperature. At “ECO-MODE” the boilers will cool down to a lower set temperature and are then kept at that temperature. The cup-heater will not activate when the machine is at “ECO-MODE” or “NO HEAT”.

See “Barista menu” (page 20 onwards) on how to program the controller to automatically turn ON, OFF and to ECO daily.



touching the central button at “NO HEAT” or “ECO” will return the machine to operation (first window)

A machine set at ECO will also turn to normal operation when any of brew-levers or mix-water switch is manipulated. This “first manipulation” will not result in starting a mix-water dispense.

Performing a flush will not take the machine out of NO HEAT or ECO.

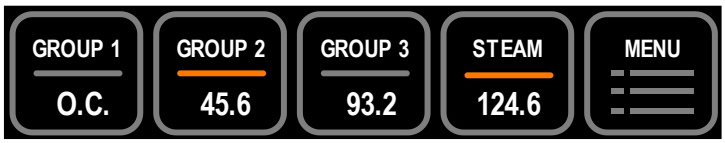
△ Caution!
When the machine was at NO HEAT or ECO when you pull a lever, no water will flow into the cylinder. When you then release the lever, it will return to resting position at high velocity that may result in personal harm or damage the machine.

Sensor malfunction

Boiler sensors
For each boiler sensor, the corresponding area in the display, as well as the 3-digit display, will show O.C. (open circuit, infinite resistance) or C.C. (closed circuit, electric short) if there is a sensor malfunction. When a sensor malfunction is shown for a boiler, the heating of that boiler is dis-engaged. The machine will remain functional on the other boilers.

Even though the coffee boilers will remain operational when there is a steam boiler sensor error, overall functionality of the machine will be low. When the display shows a boiler-sensor malfunction, have the machine repaired as soon as possible (probably the sensor has to be replaced).

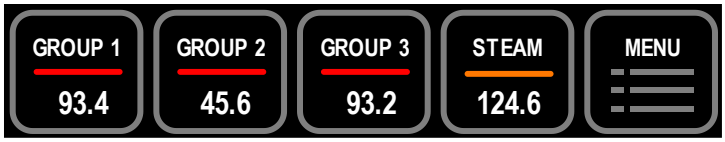
operational window



an open circuit is detected at group 1 temperature sensor

Distribution block sensor
As the sensor in the distribution block has no designated area on the control panel, a sensor error is indicated by a red centre line in all groups. There is no distinction between open or closed circuit. With a malfunctioning sensor, the cool-valve will not open but the machine will remain functional. A non-functional cool valve may lead to overheating of the groups. Have the machine repaired as soon as possible.

operational window



a distribution block sensor malfunction is detected

Cup heater sensor
There is no indication when the sensor of the cup heater malfunctions. The only way to detect that the sensor circuit is not operating will be very slow heat-up of the cup-heater after the machine is turned to “operational” (from either OFF or ECO).

Start automatic back-flush program

Prepare blind filters with a little cleaning powder and lock-in. In the menu window, touch the button “CLEAN PROGRAM”. Then pull all levers into locking position. You must make sure to remove all cleaning powder from the group. To do so, run the program a second time without cleaning powder.

For full procedure see “Clean program” on page 27.

Technical assistance

In the NO-HEAT or ECO window (shown below) touch the left of the control panel. The next window will show the telephone number to call for technical assistance, provided that the technician has entered the information. The exit button will return to “NO HEAT” or “ECO MODE”, whatever the earlier setting was.

no-heat window

“NO HEAT”: the machine will cool down

eco window

“ECO”: the machine will settle at lower set temperature

touch ⇩

assistance window

touch ⇩

EXIT will go back to previously active window (NO HEAT or ECO)

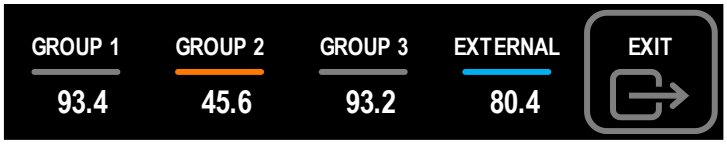
Use (optional) external temperature sensor

An external NTC-sensor can be plugged into the bottom of the electrics tray (see Figure 29, page 35). The temperature of the external sensor can be shown on the control panel instead of the steam boiler temperature. In the menu window touch the button “EXTERNAL SENSOR”.

menu window

touch ⇩

external sensor window Triplette



external sensor attached (°C)

external sensor window Duette

external sensor attached (°F)

touch ⇩

return to operational window

There is a filter-basket with NTC sensor (K03344-00) available that will register the temperature in the coffee-bed during extraction and can be helpful to check functioning of the different groups. Of course, you can also check the mix-water temperature with this item.

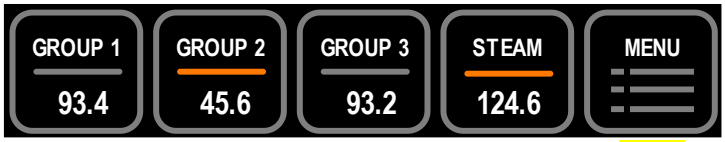
Figure 17. Temperature sensor in filter basket (K03344-00 mounted in bottomless portafilter).

Although the input of the “external sensor” is displayed without delay, the temperature shown will always be lagging a bit w.r.t. the actual temperature at the sensor-tip as the probe-temperature needs to adjust to the surrounding temperature. Response time of this sensor to 90% (of the temperature difference) is appr. 1 second.

Change settings in the Barista menu

You have to leave the operational window of the controller and choose the correct parameter-set (in the settings window) to change individual settings.

operational window

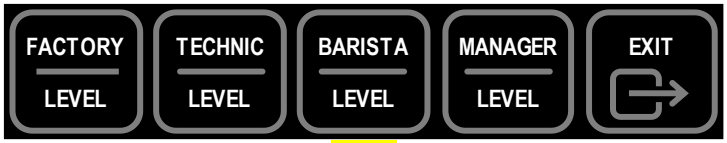


touch ⇩

menu window

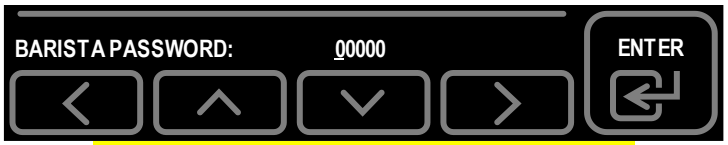
touch ⇩

settings window



touch ⇩

enter barista password window

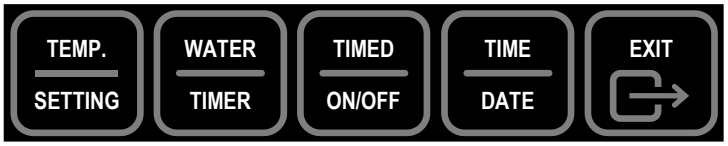


use ^v to change the value of the underlined digit, use <> to change digit

use arrows to construct the password (10000)

touch ⇩

barista menu window



choose a sub-menu or exit to the operational window

Sub-menu TEMP. SETTING

In the sub-menu temperature setting you can adjust the following:

parameter	range	factory	increm.	unit	remark
temperature display	°C, °F	°C			
grp 1 temperature	80.0 .. 99.9°C 176 .. 212°F	93.0°C 199.4°F	0.1	°C or °F	
grp 2 temperature					
grp 3 temperature					In a Duette there is no group 3.
steam temperature	110 .. 130°C 230 .. 266°F	125°C 257°F	1		
cup heater	0 .. 70 °C 32 .. 158 °F	70 °C 158 °F	1		the cup-heater is OFF at “NO HEAT” and “ECO-all”
show temp. at ECO	no, yes	no[4]			When “yes” the digit displays will show a temperature at ECO.

Note! Do not adjust the temperature of the hot water dispense by changing the temperature of the steam-boiler. Change the mix-water temperature by turning the set screw on the inlet manifold.

[4] The 3-digit display will go blank whenever a group is at ECO. This can be changed to keep showing the temperatures but that will decrease the lifespan of the displays.

Sub-menu WATER TIMER

In the sub-menu water timer you can adjust the following:

parameter	range	factory	increment	unit	remark
water dispense	0.5 .. 15	4.0	0.1	s	
pump on-time Gr1	5 .. 59	7	1	s	can be set per individual group
pump on-time Gr2					
pump on-time Gr3					not in Duette
flush time	1.0 .. 10	2.0	0.1	s	

Note! pump on-time is the duration the optional pump is active after taking the lever out of resting position.

Sub-menus TIMED ON/OFF and TIME/DATE

In the sub-menu timed on/off you can adjust the following:

parameter	range	factory	remark
auto off	NO, to NO HEAT, to ECO-all	NO	turn automatically to stand-by
off time	hh:mm		time to turn to stand-by
auto on	NO, YES	NO	turn automatically ON
on time	hh:mm		time to turn ON
day off	none, Monday .. Sunday	none	skip a weekday to turn automatically ON

This sub-menu continues into the sub-menu TIME/DATE.

In the sub-menu time/date you can adjust the following:

parameter	range	factory	increment	unit	remark
shot time	-1 .. 99	20	1	s	-1 never show shot time 0 show shot time during brew only
present time	hh:mm				make sure to set correctly and check time and weekday regularly
present weekday	Mon..Sun				

Timer function to switch the machine

The machine can automatically change state:

- Using the “auto off” function will turn the machine to stand-by (NO HEAT or ECO) at a pre-set time (e.g. at the end of the day). It is especially meant to facilitate the use of the ECO function.
- Using the “auto on” function will turn the machine to operational temperature at a pre-set time (e.g. in the morning). When set correctly, the machine will be fully operational the minute you walk-in or the store opens.
- The “day off” function will make the pre-programmed ON time skip a day.

You can manually override an automatically set switch at any time. After such interference the timer function continues in the background and will perform the next pre-set action when it turns up.

Notes!
To have the machine react properly to the timer function instructions the main and heat switches must remain in the ON position.
The time and weekday of the controller must also be set correctly. It is advised to check these regularly (present time and weekday are shown on the ECO-all and NO HEAT windows).

Why switch to ECO …

1. A not-used machine kept at ECO consumes about 20% of the energy of a not-used machine kept at operational temperature.

Heat loss of the machine is related to the square of the temperature difference between the machine and its environment. Of course some extra energy is needed to heat up from ECO to operational temperature. Switching to ECO will therefore lead to 70-75% energy reduction, depending on how long the machine will be at ECO before turning ON again.

… and not to OFF?

2. A lot of parts in the machine suffer from large temperature variations, not cooling down to room temperature decreases the variation and thus the amount the machine suffers.
3. Heating up from ECO (just over 8 minutes) is faster than heating up from room temperature (about 15 minutes).

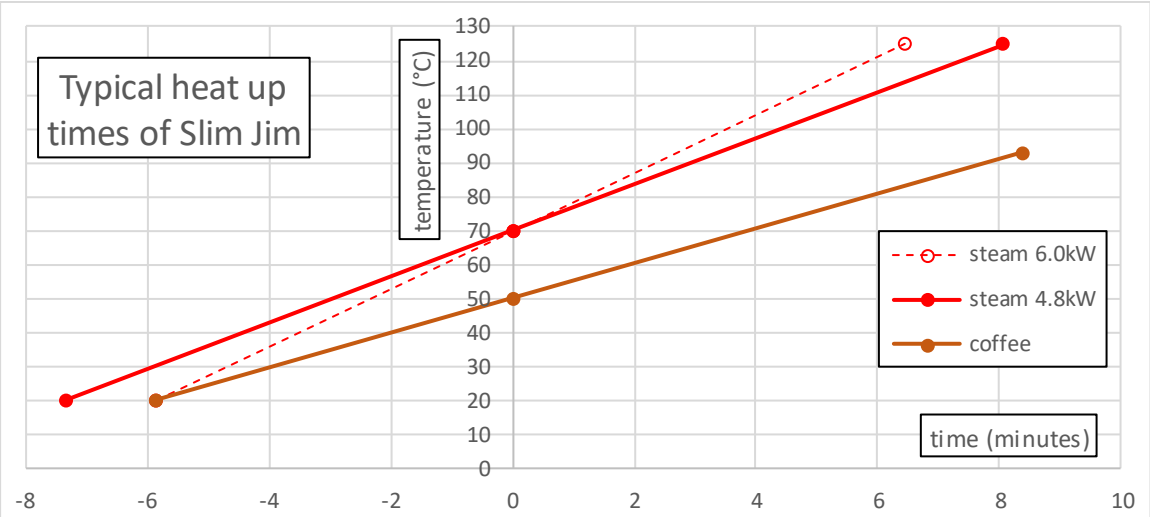


Figure 18. Graph showing typical heat-up duration normalised at ECO-temperatures. From ECO to operational temperatures takes just over 8 minutes for both coffee and steam. From 20°C to operational takes 14 (coffee) and 16 (steam) minutes resp.. Also shown is heat-up with high power heating element for steam boiler.

Note!
The temperature sensor of the steam-boiler is placed above the water-level for quick response to steam withdrawal. At temperatures below 110 °C (230 °F) steam density is low and the sensor will not register a change in (water) temperature quickly. For that reason, the steam-boiler temperature may be up to 6 °C higher than the ECO-setpoint at the moment you switch from ECO to operational mode.

Water supply pressure-reducer setting

Adjust

The set-up may include an optional pump[5] but will always incorporate a pressure-reducer in the feed-line to the machine, initially set to appr. 3.0 bar (45 psi). After getting used to the machine you may want to adjust this setting. If pre-infusion takes too long, increase the outgoing pressure of the reducer. Equivalently, when pre-infusion is too quick, lower the outgoing pressure.

As mix-water temperature (also) depends on incoming water-line pressure, you need to check -and maybe adjust- this temperature after changing the pressure-reducer setting.

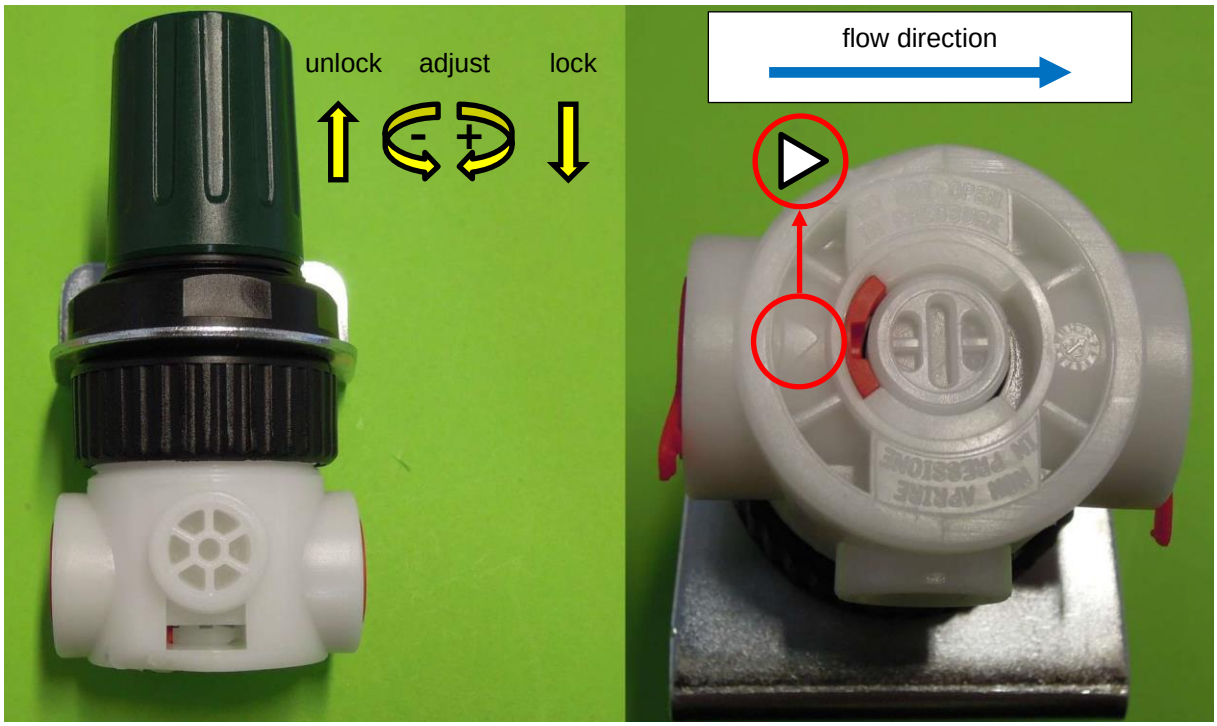


Figure 19. How to adjust the Vesta pressure reducer setting; procedure for the AIGNEP version is similar. Pull the knob out and then twist to the correct setting. When done, push the knob back in. Note that the machine will not lose pressure due to one-way valves in the system. Set the outgoing pressure during an actual brew (not with a blind filter).

Check

Incoming pressure and functioning of gauges can be checked during pre-infusion. Prepare normal coffee-beds, lock-in and one by one pull the brew-levers into locking position. Check the highest pressure reached for all groups available (this will be incoming water pressure) and compare the results.

Notes!
A small divergency (<0.2 bar) between the groups can be the result of deviations between pressure gauges and is no cause for alarm.
A large divergency may indicate a gauge-malfunction but can also be the result of different coffee-bed preparations. Redo the check with blind-filters on a cold machine with all heat circuits turned OFF (on a heated machine entering cold water heats up and expands, leading to pressure increase that is not related to incoming pressure). Have a technician replace the gauges when the divergency persists.

[5] When water mains pressure for the machine is always equal to or higher than your optimum pre-infusion pressure, a pump will not be necessary. If at any time the water mains pressure is expected to fall below optimum pre-infusion pressure you should consider the installation of a pump and possibly also an expansion-tank.

Machine cool-down

As the steam boiler is isolated and fully enclosed in the machine, the temperature in the steam boiler will drop very slowly when heating is turned off and the machine is otherwise untouched. It will take about 3.5 hrs to cool down to its ECO temperature of 70°C. The coffee boilers, which are not isolated, will cool down faster and will reach ECO temperature (50°C) after 1.5-2 hrs.

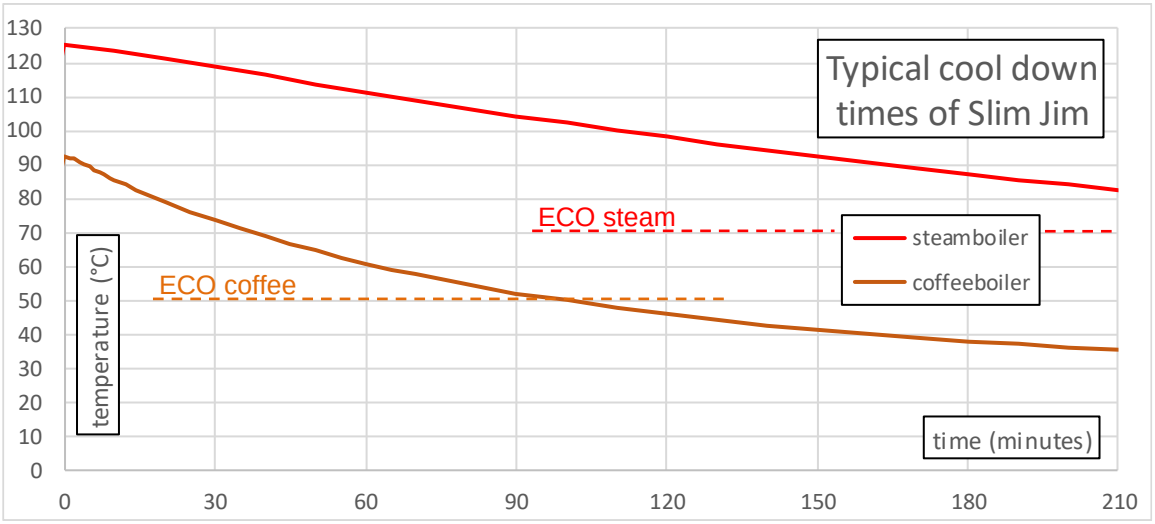


Figure 20. Graph showing typical cool-down of the boilers when the machine is turned to "NO HEAT" when it is at operational temperature.

If it is needed to cool down the machine quickly, turn the heating circuits to OFF and open both steam taps until no more steam escapes from the tips. That will cool down water in the steam boiler to 100°C but be aware that there will be some latent heat within the stainless steel of the boiler and heat exchanger. Pull all brew levers down for a few minutes to have cold water running via the heat exchanger towards the groups.

Daily to weekly maintenance

Use hot water from the machine

Even the best treated water will lead to scale deposition in the steam boiler when the steam boiler is predominantly used to steam milk. If the hot water-tap on the espresso machine is hardly ever used get into the habit of doing your daily clean-up up with mix-water drawn from the espresso-machine instead of from the buildings hot-water supply.

Clean body

△ Caution!
Clean the plastic front of the electrics tray with plain water only. DO NOT USE A DETERGENT as remnants of the detergent may activate the capacitive screen unexpectedly.

Resistant smudges on high gloss metal panels may be removed with silver polish and a soft cloth (these surfaces scratch easily, even copper polish may leave marks). Other materials can be cleaned with window cleaner in a hand spray flask in combination with a soft, clean, cotton cloth. When the material is warm you have to work swiftly to prevent stripes: spray and immediately rub.

△ Danger!
Individual parts can be very hot when maintenance is performed on a machine that has not cooled down sufficiently.

Daily cleaning

should at least include:

1. Clean steam wand.
2. Remove and clean filter basket and clean filter holder.
3. Back-flush all groups.
4. Clean drip-tray and -grill.

Materials needed

- Plastic group brush (included in shipment)
- Blind filter (looks like a filter basket but has no holes, included in shipment)
- Coffee dissolving powder (included in shipment)
- Group screen extractor (included in shipment, or back end of teaspoon)
- Replacement group seal (when necessary)
- Washing up liquid, scouring pad, firm brush

Clean steam wand

Milk easily bakes to the hot inner and outer surfaces of the steam wand and tip. Therefore, the steam wand and tip should be cleaned with a damp cloth directly after each use. Do not use this cloth for anything else than the steam wand.

Note!
Immediately after steaming milk you must purge the steam wand with a little steam. This will prohibit milk creeping into the pipe, and even into the valve house, through so-called capillary rise.
Purging also prevents clogging of the 4 holes in the tip. In the event that clogging occurs, place the end of the steam wand and tip for several minutes in a glass of hot water. The remains will soften and can be wiped off easily. NEVER scrape, grind or cut the steam wand or tip since it leads to damage.

The optional foot-operated 3-way solenoid valve largely reduces the possibility that milk is sucked into the steam wand after it has been used but does not acquit you from cleaning the steam wand.

Remove and clean filter basket

Procedure

1. Remove the filter holder from the group and pry the filter basket out (see Figure 21).
2. Remove the filter basket from the filter holder and clean the filter basket with a little washing up liquid and plastic scouring pad or firm brush.
3. When remounting the filter basket, make sure the spring remains in the groove of the filter holder and grabs the basket.

Figure 21. Pry filter basket from filter holder with the group screen extractor.

Clean filter holder

Soak the metal part of the filter holder for 10 minutes in a solution of 1 tablespoon of coffee dissolving powder in 0.5 litre hot water. The plastic handle will eventually disintegrate in this solution and should thus be kept out of the solution.

> **△ Caution!**
> Never clean the filter holder in a dish washer as dish washer detergent will ruin it.

Back flush group

Back flushing cleans the group and conduits from coffee residue which influences the taste of the extraction since fresh (hot) water is transported to the coffee bed through these parts. It is advised to back flush the groups at least once a day and more often when the machine is intensively used.

Described next is the back flush procedure for an individual group.

Procedure

1. Remove the filter holder, flush the group briefly (with flush-handle).
2. Clean the group screen and group seal with the plastic group brush.
3. Pry the filter basket (e.g. with the group screen extractor) from the filter holder (see Figure 21) and replace it with a blind filter.
4. Scoop 1 teaspoon of coffee dissolving powder in the blind filter and lock the filter holder in the group.
5. Pull the brew-lever into locking position, unlock when pressure no longer rises (appr. 3.5 bar): pressure will quickly rise to appr. 9 bar.
6. Keep away from the reach of the brew-lever, then relief pressure (with handle); the brew-lever will return to resting position very quickly, do not remove the filter holder.
7. Repeat steps 5 and 6 eight times (pressurise, then de-pressurise).
8. Remove the filter holder from the group, clean the blind filter by flushing it under the tap, flush the group for approximately 5 seconds to remove possible powder from the group screen.

Now do it again without adding cleaning powder to remove all powder from the group:

9. Lock filter holder in group, pull the brew-lever into locking position, unlock when pressure no longer rises (appr. 3.5 bar): pressure will quickly rise to appr. 9 bar.
   Keep away from the reach of the brew-lever, then relief pressure (with handle); the brew-lever will return to resting position quickly.
   Remove filter holder and empty in drip-tray, remount filter-holder.
10. Repeat step 9 four times.
11. Pry the blind filter from the filter holder and replace the filter basket.

> **⚠ Warning!**
> Finishing the back flush routine without cleaning powder is essential to prevent remnants of cleaning powder settling between the plunger and housing of the solenoid valves.

Clean program

Maximum water-pressure during the clean program will be incoming pressure and thus not as high as when you perform the back-flush manually and may thus not be as effective.

The groups will simultaneously pressurise for 15 seconds (with pump active when installed) 8 times in a row with a pause of 9 seconds in between. The LEDs on the flush/relief unit will flash during the cleaning program, the digit displays continue to show the temperature.

Procedure

1. Remove the filter holders, flush all groups (with handle).
2. Clean the group screen and group seal with the plastic group brush.
3. Pry the filter baskets (e.g. with the group screen extractor) from the filter holders (see Figure 21) and replace them with blind filters.
4. Scoop 1 teaspoon of coffee dissolving powder in each blind filter and lock the filter holders in the groups.
5. On the touch screen, start the cleaning program (the LEDs on the units start to flash).
6. One-by-one pull the brew-levers into locking position (the LEDs remain flashing).

While 7 (and 10) is in progress, clean the filter baskets.

7. After 8 pressurising cycles the LEDs stop flashing, the program has ended.
8. Unlock the levers, relief pressure (with handles).
9. Unlock the portafilters and clean them under running water, replace in groups.
10. Start the cleaning program without cleaning powder again to remove all cleaning powder from the groups.
11. Pull levers into locking position, wait until the LEDs stop flashing (the program has ended).
12. Unlock levers and return to resting position (relief).
13. Replace blind-filters with filter baskets.

> **Note!** The entire procedure using the clean program twice in a row will take 7-10 minutes.

Clean group screen, check and replace group seal

The group screen helps to disperse the incoming hot water onto the coffee bed and also prevents coffee particles entering the group.
The black group seal will remain flexible for a long time but will harden eventually. We advise to check the group seal regularly and replace when it hardens or shows cracks.

Procedure

1. Pry the group screen gently from the group using the screen extractor levered under the bayonet-ring. Place the pointed edge of the tool in the rim of the group screen (see Figure 22 a), do not puncture the group screen. Pry left and right, the screen will fall out together with the group seal.
2. Remove the group seal from the group screen.
3. Soak the metal group screen in a solution of coffee dissolving powder and warm water for about 5 minutes. Clean with firm brush and rinse under streaming water.
4. Check the group seal for cracks and/or hardening, replace if necessary.
5. One side of the group seal has a somewhat more rounded edges. When replacing the group seal on the group screen, make sure the rounded side of the ring is inserted into the group (facing upwards, see Figure 22 b).
6. Place the group screen with group seal on the filter holder and insert into group, pushing upwards.
7. Turn the filter holder in the bayonet lock to firmly press the group seal into the group.

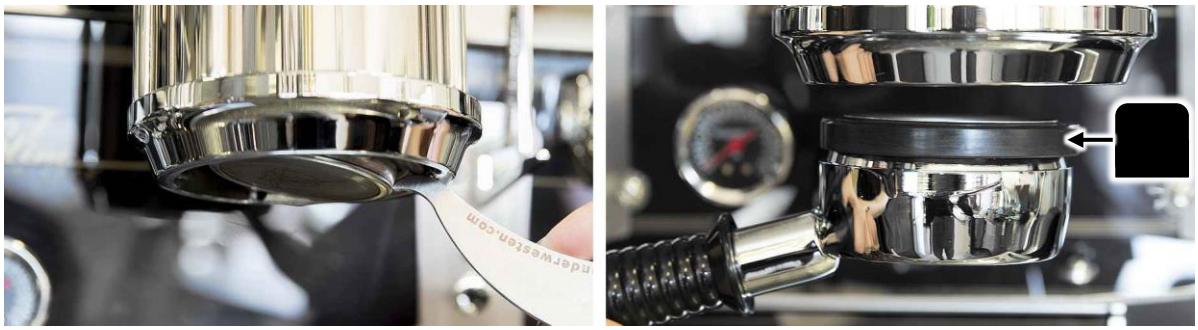


Figure 22 a (left). Pry left and right with screen extractor to remove group screen and group seal.
Figure 22 b (right). Mount group screen with filter holder and group ring. Inset shows schematic cross section of group ring with rounded surface upwards.

Clean drip-tray and -grill

Have water running from a group and/or water spout. Use a brush or sponge to push remains into the drain.

Use some washing-up liquid to clean the drip-tray-grill, rinse under clean water and replace.

Lubricate and replace piston rings

The V-rings on the piston are susceptible to wear and need lubrication and/or replacement every once in a while. If the lever starts to show increased stop-motion behaviour during a shot you should plan to lubricate the V-rings. Upon inspection of the V-rings you may conclude that it is better to replace the V-rings.

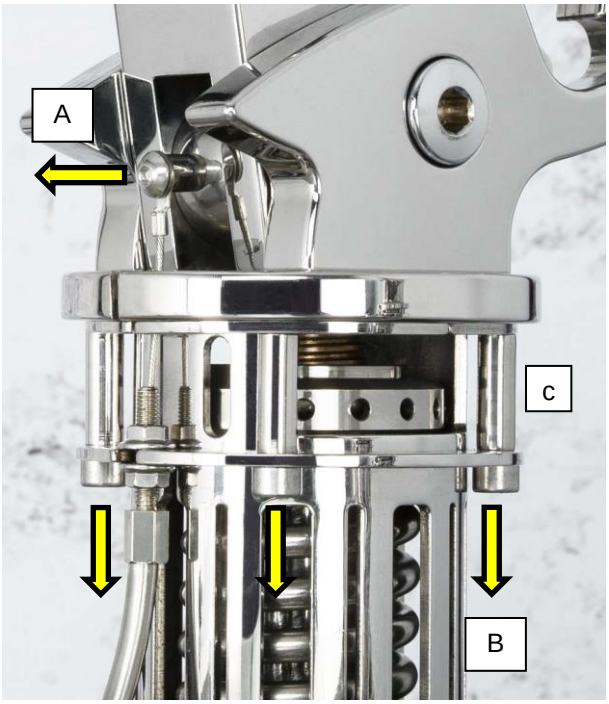


Figure 23. Remove Bowden cable (A) and 4 Allen bolts (B) to undo top from cylinder.

tools and parts needed

- food-grade grease (C-VT-015)
- V-rings (K00566-03)
- screw driver
- Allen wrench 3mm, 4mm, 5mm, 6mm
- spanner 8mm

procedure

1. Turn the machine OFF and let the steam boiler cool down to well below 100°C (212°F).
2. Close water supply to the machine, pull the brew-levers down to release remaining pressure in the coffee section. Gently move the brew-levers into (upper) resting position.
3. Remove the Allen bolt (A) from the back of the lever mechanism and loosen the spanner to dismount the Bowden cable.
4. Remove the 4 Allen bolts (B) that hold the top onto the main section of the group. The spacer tubes (c) may fall out.
5. Pull the top vertically from the group.

To replace the V-rings;

- Remove the Allen bolt M8x20 to take the piston apart, see Figure 24.
- Note the correct orientation of each V-ring when replacing.
- Mount the piston back together.

Figure 24. The piston taken apart. Normally the group head, piston-rod, spring and piston remain assembled.

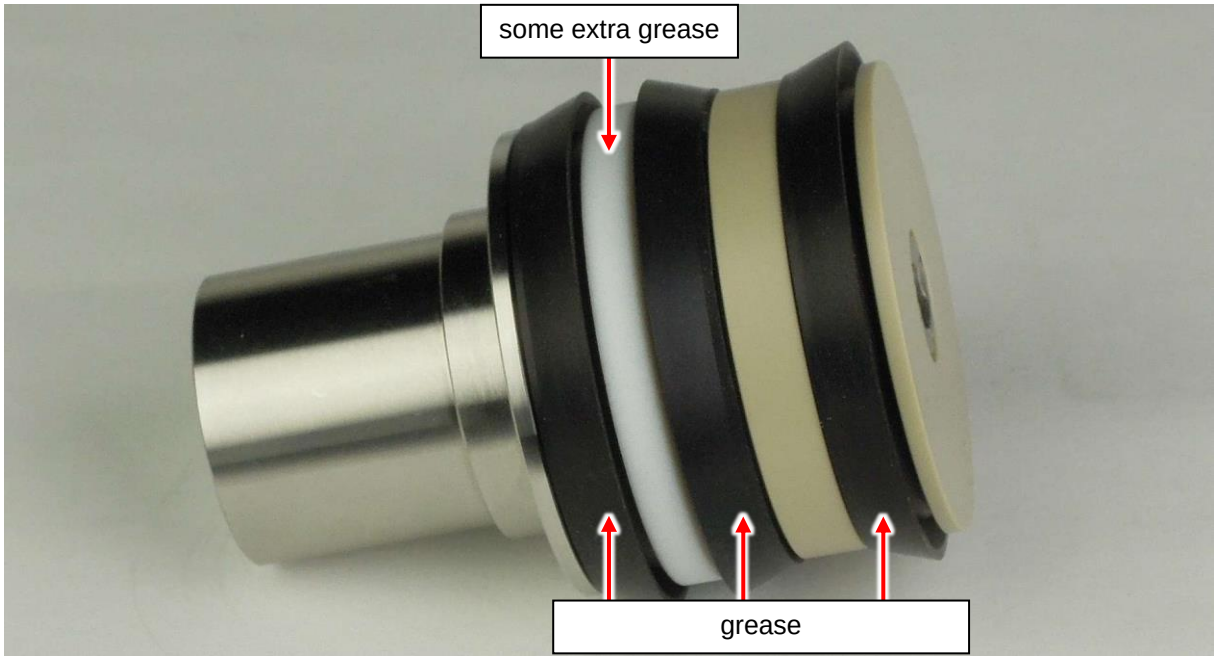


Figure 25. Lightly grease the V-rings and put some extra grease in between the top 2 V-rings.

6. Put a little food grade grease on the V-rings (see Figure 25) and push the top section gently back into the cylinder.
7. Place the spacer-tubes and mount the 4 Allen bolts, tighten as cylinder-head: (1, 3, 2, 4, 1, 3, 2, 4, …).
8. Mount the Bowden cable back onto the mechanism.
9. Open water mains, turn machine ON, flush each group a few times to replace possible air in the group.
10. Check functioning of switches, you need to adjust the Bowden-cable such that both switches operate properly.

Clean group dispersion set

The group dispersion set ensures uniform wetting of the coffee bed. When dirty, the wetting will become less uniform. As the dispersion plate and base are made of plastic material, which is heat neutral, no oils and fats will bake on easily and plate and base will remain clean for quite long. Although the dispersion set is made of high-quality plastic material (PEEK), it is slowly affected by the aggressive cleaning powder such that it will need replacement eventually.

Extra material needed

- Short screw driver no.2

Procedure

1. Remove the group screen and group seal (see previous item).
2. Remove the two bolts from the plastic dispersion plate with a short screwdriver (see Figure 26), the dispersion plate will fall out. Be careful with these screws, they have specific length to match the thickness of the dispersion plate.

> **△ Caution!**
> The dispersion base remains in the group bottom. With the bolts removed, the connection between the dispersion base and group bottom is fragile.

3. Clean the dispersion plate with a plastic brush. When necessary, put the dispersion plate in a solution of coffee dissolving powder and warm water for about 5 minutes. Rinse under streaming water.

> **△ Caution!**
> Do not scrub the dispersion plate with a metal brush or Scotch-pad as it will scratch easily and dirt adheres more easily on a scratched surface.

4. When re-installing, tighten the bolts that hold the group dispersion plate with little torque.
5. Remount the group screen and group seal (see previous section).

Figure 26. Dispersion set mounted in group head. Remove the 2 screws. The dispersion plate will fall out. The dispersion base remains in the group.

Replace dispersion base and plate

The dispersion base and plate are sold as a set only (with new screws) as both parts deteriorate simultaneously. The protrusion on the dispersion base easily breaks off when the plastic material is affected (by cleaning powder).

Extra material needed

- Replacement for dispersion set.

Procedure

1. Remove the group dispersion plate (see previous item).
2. Gently pull the dispersion base from the group bottom, pull as perpendicular as possible. Do not twist the dispersion base.

TIPs!
The dispersion base does not come off from the group bottom easily. Use two longer M5 bolts to get a grip on the base (see Figure 27a,b).
If the protrusion breaks from the base and remains in the group head, pull out with needle nose pliers or twist in a (wood) screw and pull the screw with protrusion from the group bottom.

3. Mount the new base and plate with the new screws, discard the old screws.
4. Remount the group screen and seal (see previous item).

Figure 27. How to remove the dispersion base. Use 2 bolts M5x60 or similar to get grip onto the dispersion base.

Descaling

Descaling of (parts of) the machine is restricted to persons having knowledge and practical experience of the appliance, in particular as far as safety and hygiene are concerned.

It is recommended not to descale the machine as a whole. In general for professional espresso machines: only individual parts taken from the machine should be de-scaled.

Check machine condition, report malfunctions

It will help the service technician solving problems if some information about the machine is known before a house-call is scheduled. This information should include:

1. serial number of the machine
2. free flow rate of each individual group
3. a well-defined description of the malfunction

Free-flowrate

During “free-flow” (no filter holder locked in the group) the flowrate gives an indication of the smallest opening in the coffee system of the machine. In the lever-operated Slim Jim that will be the orifice of the group-valve (diameter 1.5mm).
At 3 bar water pressure with lever in lowest position the free flow rate at the lever group should be about 1.5 l/minute. If one or more groups have a free-flowrate that falls outside the range in the table below it is advised to have a technician check the machine.

valve orifice diameter (mm)	minimum (l/minute)	goal (l/minute)	maximum (l/minute)
1.5	1.0	1.5	2.0

Table 2. Showing range of free-flowrates for water of 90-95°C at 3 bar pressure for a valve with orifice 1.5mm.

Heating element indicator lights

If there is a heating problem with the machine, the indicator lights help to determine possible causes.

A set of indicator lights is found on the bottom of the electronics box, see Figure 28.

If the machine is warmed up and functioning correctly, the 3 lights on the left (steam boiler heating) will light up simultaneously at longer intervals and “in sync” [6] with the corresponding orange centre line shown on the control panel. The 2 or 3 lights on the right (coffee boiler heating) will light up shortly at somewhat erratic intervals but in sync with the corresponding orange centre line on the interface.

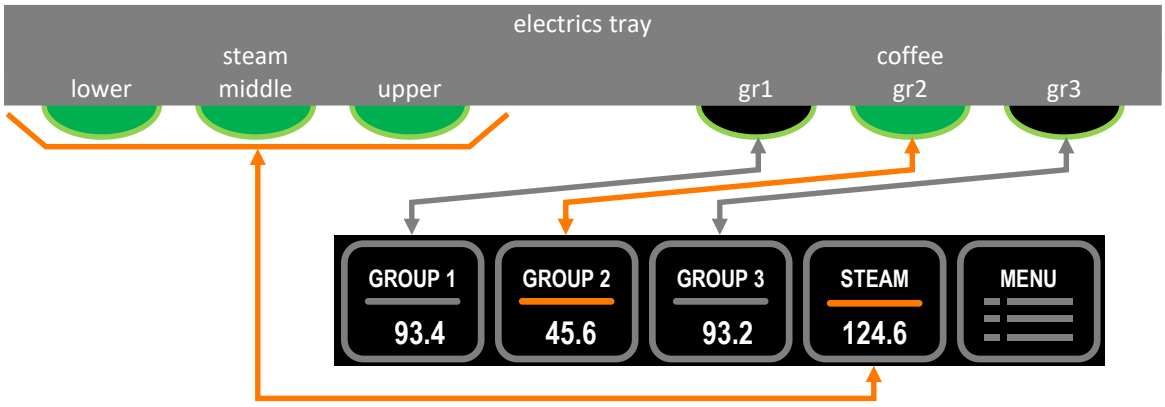


Figure 28. The heating element indicator lights on a Slim Jim Triplette, left indicator lights for the steam boiler, right for the coffee boilers. See also Figure 29.

[6] The control panel-display is lagging by about 0.5 seconds w.r.t. the indicator lights.

Check pressure gauges

1. No pressure: when not brewing, the needles on all gauges should be in “resting position” (indicating close to 0 bar).
2. Identical pressure: with a blind filter in all groups of a cold machine and brew-levers in locked (down) position, the gauges should display identical pressures (line pressure). A small deviation between the different gauges (0.2 bar) is within specifications.
3. On the lever version there is no procedure to check the gauges w.r.t. each other at elevated pressure.

Note!
There is no need to replace a faulty gauge immediately. The gauges give feed-back on, but have no active part in, the brew-process. A machine remains fully operational with faulty gauges as long as they do not leak. Have a faulty gauge replaced during the next scheduled service.

Opening pressure of expansion valve

Each group has an individual expansion valve. The opening pressure of the expansion valve can be checked by first having a long flush (about 20 seconds) then quickly locking in a water-filled blind filter and pull the brew-lever into locking position. Expansion due to heating up the cold inflow of water will increase the pressure inside the coffee system. The gauge should reach a maximum value between 10.5 bar and 13.5 bar and then remain constant.

Notes!
- Remaining air in the group will make the test worthless. Perform a new test when the lever does not feel firm when unlocked from lower position.
- If the pressure rises above 13.5 bar (1) the expansion valve opens at too high pressure or (2) the gauge is malfunctioning.
- If the pressure does not rise over 10.5 bar it is possible that (1) the expansion valve opens at too low pressure or (2) the one-way valve in the system is malfunctioning, (3) the relief-valve of the group is leaking or (4) the gauge is malfunctioning.

When a malfunction as described above is encountered, have a technician solve the problem as soon as possible.

Consistency in programmed volumes

The lever-version of the Slim Jim does not make use of flow meters to account for “shot volume” so consistency in the cup completely depends on barista-skills. Total volume of the cylinder is 55-60 ml meaning that the moment the lever is unlocked, a maximum of 55-60 ml will flow through the coffee-bed. If the coffee-bed is not completely soaked upon releasing the lever, up to 15 ml of water will remain in the coffee-bed and thus not end up in the cup. It is advised to unlock the lever only after the first drops of brew have fallen into the cup.

A brew can be stopped at any moment during a brew by shortly pressing the flush/relief-handle down.

Note!
Be careful when using the flush/relief handle to stop a brew, the brew-lever will quickly return to resting position.

External temperature probe (option)

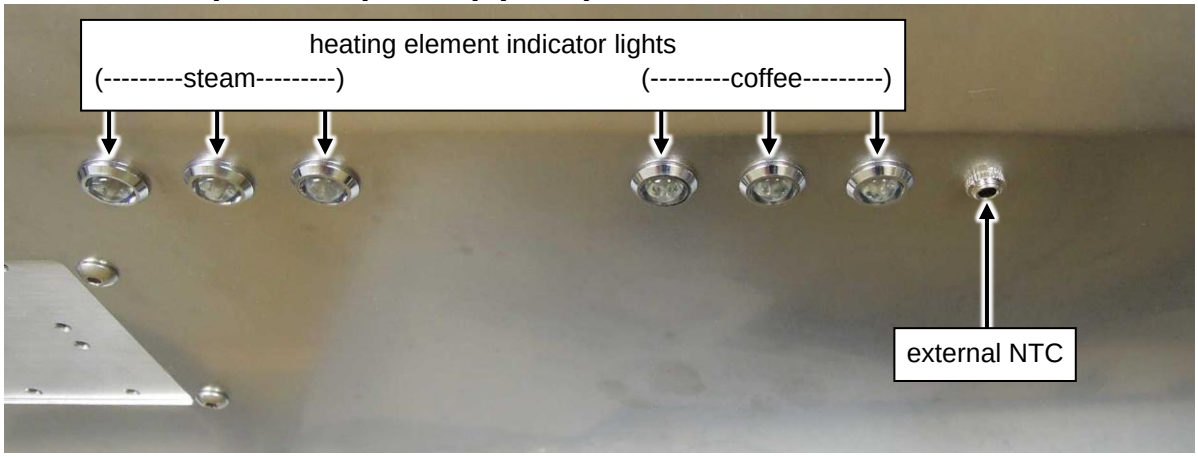


Figure 29. Showing the heating element indicator lights (Triplette) and connection for an external NTC-probe on the bottom of the electrics tray. Compare to Figure 28.

If you have the optional external probe, plug into the machine and set the interface to show its temperature (see page 19) to check individual temperatures of brews and/or hot water.

Note!
Although quick in response, the external probe cannot change temperature “immediately”. This is due to (1) the “mass” of the instrument and (2) sample rate. As such, the probe can be used to measure “real time” brew temperature but the temperature displayed will always be lagging a bit with respect to actual temperature.

Recommended maintenance and service scheme

Daily maintenance
- Clean steam wand (see page 25)
- Back flush groups (see page 26)
- Clean filter holder (see page 26)
- Clean drip tray

Weekly maintenance
- Clean group screen (see page 27)
- Clean group dispersion plate (see page 29)

Monthly maintenance
- Check brew pressure; adjust when necessary (see page 10)
- Check and replace if necessary:
  filter basket (see page 26)
  filter holder clip (see page 26)
  group seal (see page 27)
  group screen (see page 27)
- Check the functioning of your water treatment system

Service is restricted to persons having knowledge and practical experience of the appliance, in particular as far as safety and hygiene are concerned.

3 month service
monthly maintenance PLUS:

- Grease steam wand ball with food-safe grease and check play between nut and ball of steam wand; replace O-ring and/or nut when necessary
- Check anti-vacuum valve for leakage
- Check safety-valve on steam boiler for leakage
- Check opening pressure of expansion valves (one per group)
- Check free flow rate per group; clean system when necessary
- Check sealing of V-rings on piston, replace when necessary

6 month service
quarterly service PLUS:

- Check dispersion plate and base; replace when necessary
- Check tube from mix-block to hot water outlet for scale build-up; replace when necessary

12 month service
bi-annual service PLUS:

- Check injection line for scale build-up; replace when necessary
- Clean level probe and safety probe
- Replace:
  group screen
  filter basket and clip
  all seals on all pistons
- Replace anti-vacuum valve
- Renew water treatment filter cartridge

5 year service
yearly service PLUS:

- Replace all solenoid valves

For service procedures, we refer to the technical manual.

Service Record

(machine number: _____ , installation date:_____)

Date	Technician	Task	Comments
		first installation	water treatment system: pressure reducer setting:

⚠ Warning!

Service is restricted to persons having knowledge and practical experience of the appliance, in particular as far as safety and hygiene are concerned. Parts of the machine can reach a temperature close to 130 °C (266 °F). The steam/hot water boiler contains water and pressurised steam of 125 °C at 1.35 Bar overpressure (257 °F at 20 PSI), temperature and pressure in the coffee system may reach up to 96 °C at 12 Bar overpressure (205 °F at 175 PSI).

When servicing the machine it is sometimes necessary to keep the machine connected to the AC power outlet and the machine switched “ON”. In both cases there is a possibility that you touch a live wire.

☠ Danger

We cannot be held responsible for damage and/or injuries resulting from actions performed on our machines by non-qualified personnel.

Any qualified technician working on the machine is urged to thoroughly read the latest edition of the “Technical manual” which can be obtained via:

support@keesvanderwesten.com

When seeking contact with the e-mail address above, please forward the model and serial number of the machine in question.

Contact information

Kees van der Westen Espressonistic Works B.V.
Van Elderenlaan 6
5581WJ WAALRE
The Netherlands

Telephone *+31 40 2223433*
Email *support@keesvanderwesten.com*
Website *www.keesvanderwesten.com*

Ordering replacement parts
Order spare parts via:
spareparts@keesvanderwesten.com

Please supply machine details (model and serial number) and full contact information when ordering.