# *diyPresso Two*

quick installation & user guide

diyPresso

***diyPresso Two***
quick installation & user guide

***Illustrations and text***
Pieter Raat, Bernard Hulshof & Joop van Heekeren

***© 2026 diyPresso B.V.***
V1.1 October 2026

***Please read the safety warnings first!***

***Since the diyPresso Two is a DIY build kit, the builder is responsible for a proper assembly and for all safety aspects - including but not limited to electricity, pressure and temperature!***

Dear customer,

Thank you and congratulations on getting yourself a diyPresso Two! diyPresso Two is world's first espresso machine with milk steam wand designed for DIY enthusiasts and coffee lovers. We hope that you will enjoy the assembly and get the best extraction from your diyPresso Two in no time! All parts are manufacturerd with high quality and state-of-the-art technology and now it is up to you to assemble the DIY kit! Therefore, please follow carefully all steps in this assembly manual and read all the instructions of the Quick Installation & User Guide. Double check everythig before you start using your diyPresso Two.

Pieter, Bernard & Joop

Documentation & Design Files Licence (CC BY-SA 4.0). All documentation, schematics, assembly guides, and other design materials provided by diyPresso are released under the Creative Commons Attribution–ShareAlike 4.0 International (CC BY-SA 4.0) licence. Under this licence, users are permitted to share (copy and redistribute) and adapt (remix, transform, and build upon) the materials for any purpose, including commercial use, provided that:

- Attribution is given to diyPresso in a clear and visible manner;
- Any derivative works are distributed under the same licence (CC BY-SA 4.0);
- No additional restrictions are applied that would limit the freedoms granted by the licence.

The documentation are provided without any warranty, including but not limited to implied warranties of merchantability or fitness for a particular purpose.

# *diyPresso Two*

## Safety Warnings

diyPresso

***Read All Instructions:*** Before using the diyPresso Two, carefully read the Assembly Manual and Quick Installation & User Guide and follow all assembly and operational guidelines.

***Checking the appliance:*** After removing the packaging, make sure the product is complete and undamaged and that all accessories are present. Do not use the appliance if it is visibly damaged. Contact diyPresso Customer Services in case of doubt.

***Electric Shock Hazard:*** diyPresso Two contains electrical components. Avoid contact with water or any other liquids to prevent electric shock. Unplug the device before cleaning or performing any maintenance.

***Hot Surfaces:*** This appliance produces hot water and steam may form while it is in operation. The diyPresso Two becomes hot during use. Do not touch hot surfaces, including the coffee brewing- ans steaming parts, to avoid burns.

***Proper Ventilation:*** Ensure the diyPresso Two is used in a well-ventilated area. Do not block ventilation openings, and keep away from flammable materials or surfaces to avoid fire hazards.

***Overheating Risk:*** Even tough the boiler and thermoblock are equipped with an auto reset thermostat and the diyPresso has a software-based temperature protection, do not leave the device unattended while in operation. If the device overheats or emits strange odors, turn it off immediately and unplug it.

***Safe Use of Accessories:*** Only use compatible accessories or parts recommended by the manufacturer of the components. Using non-approved parts can result in injury or damage to the device. Incase of doubt, contact diyPresso.

***Children and Pets:*** Keep diyPresso Two out of reach of children and pets. The device contains small and sharp parts and produces hot liquids and steam, posing a potential risk of injury.

***Regular Inspection:*** Inspect the diyPresso Two regularly for signs of damage or leaks. If damaged or leaking, stop use immediately and inspect, repair or replace components.

***Pressure Release:*** diyPresso Two operates under high pressure during the brewing process. Ensure proper assembly and secure the components before use to prevent sudden release of pressure, which could cause injury.

***Cleaning:*** Always unplug the device before cleaning and make sure the components are not hot. Do not submerge in water or use harsh chemicals.

***Personal Injury:*** Since the diyPresso Two is a DIY build kit, diyPresso B.V. cannot be held responsible for any direct or indirect damage or injury resulting from or during assembly or use. In case of assembly, taking apart or modification of the device, please follow the Assembly Manual. Any tampering with electrical components or internal mechanisms could result in serious injury or device malfunction.

Be aware of sharp edges to avoid cutting yourself.

***Certification:*** All parts and components used are certified either CE or foodsafe or PED.

Keep this Instruction for Use. If the appliance is passed to other persons, they must also be provided with this Instruction for Use.

***Note:*** Misuse of diyPresso Two or failure to follow these safety warnings may void the warranty. Always prioritize safety during use.

***Technical data:***
Mains voltage: 230V AC 50Hz
Absorbed power: 2300W
Dimensions: 390x270x365 mm
Heat source: Copper boiler and thermo block
Pump pressure brew group: 1-16bar (max 10 bar advised)
Pump pressure steam wand: 2,5bar
Volume Waterreservoir: 1,5 liter
Power cord length: 90° 1000 mm, Schuko Male to C13
Weight: 18 kgs

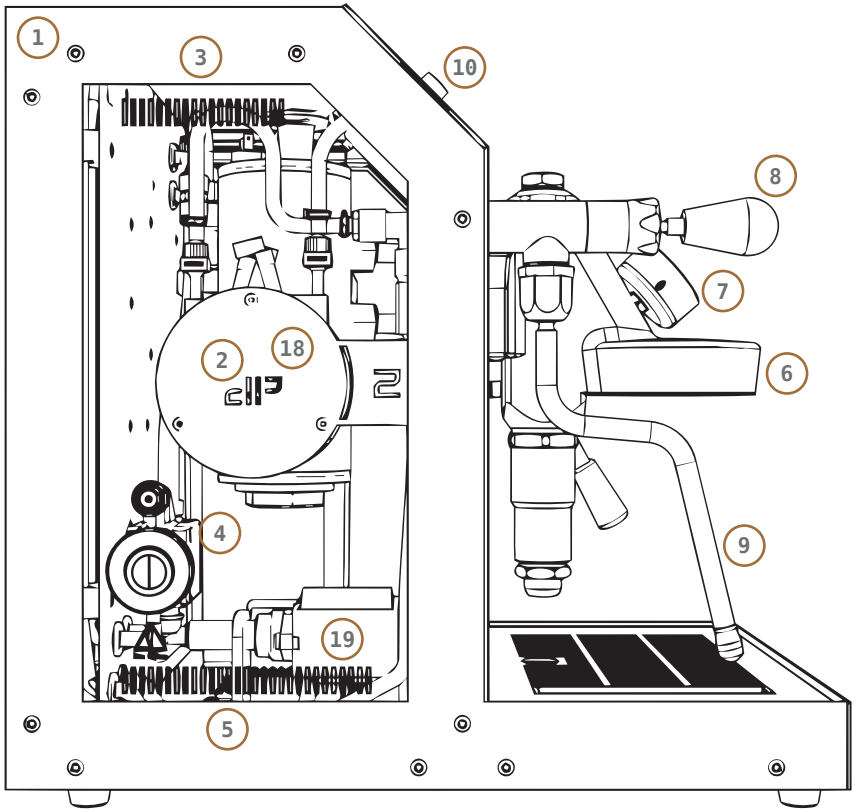
***Disposal:*** The appliance must not be disposed of with household waste, but taken to an authorised waste separation and recycling centre.

# *diyPresso Two*

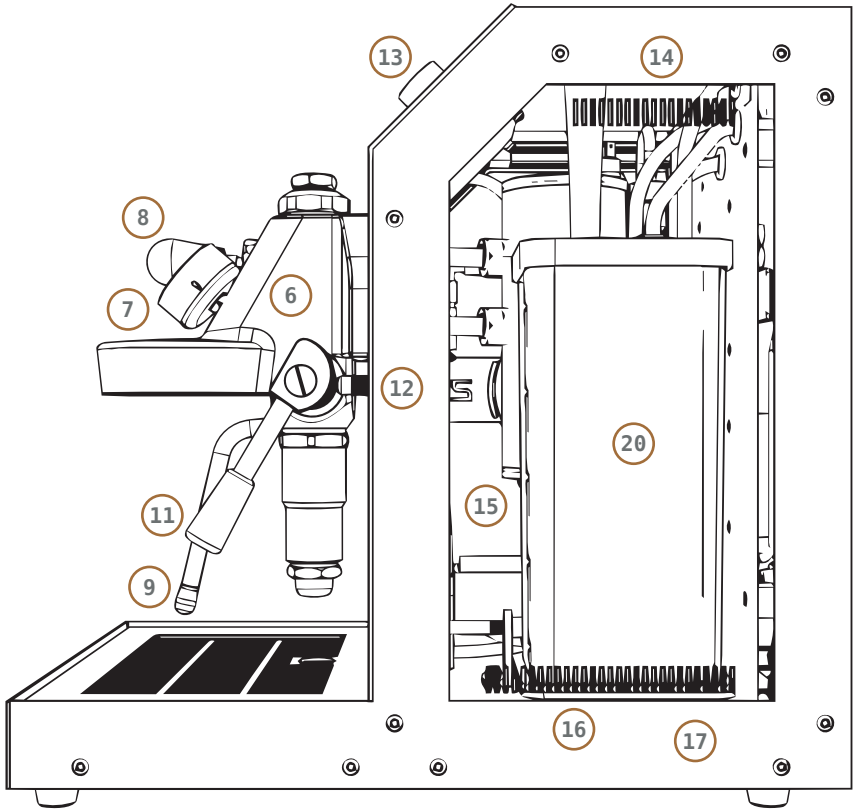
quick installation & user guide

diyPresso

## Side view left

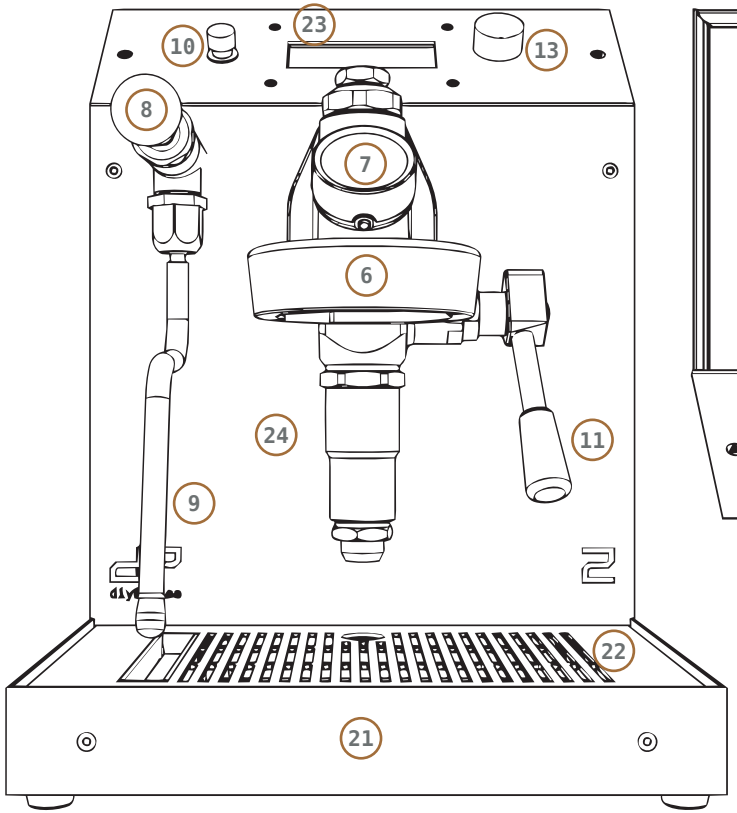



## Side view right

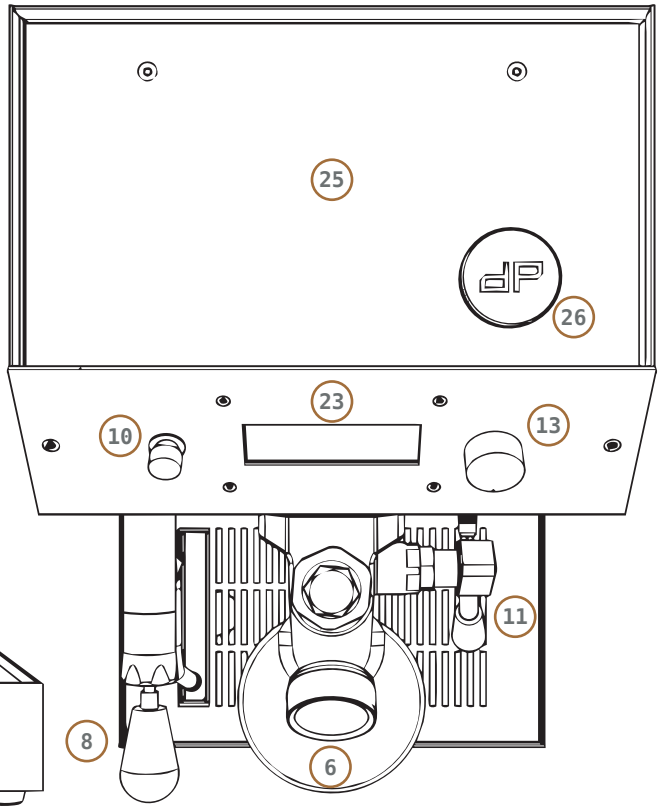



1. Stainless steel side panel, left
2. Acrylic side panel, left
3. Ventilation openings
4. Over Pressure Valve (OPV)
5. Ventialtion openings
6. E61 lever brewing group
7. Pressure gauge
8. Steamer joystick
9. Steam wand
10. Steamer button
11. Brewing lever
12. Microswitch
13. Rotary push-turn button
14. Ventilation openings
15. Acrylic side panel, right
16. Ventilation openings
17. Stainless steel side panel, right
18. Thermoblock for steamer
19. Pump
20. Water reservoir

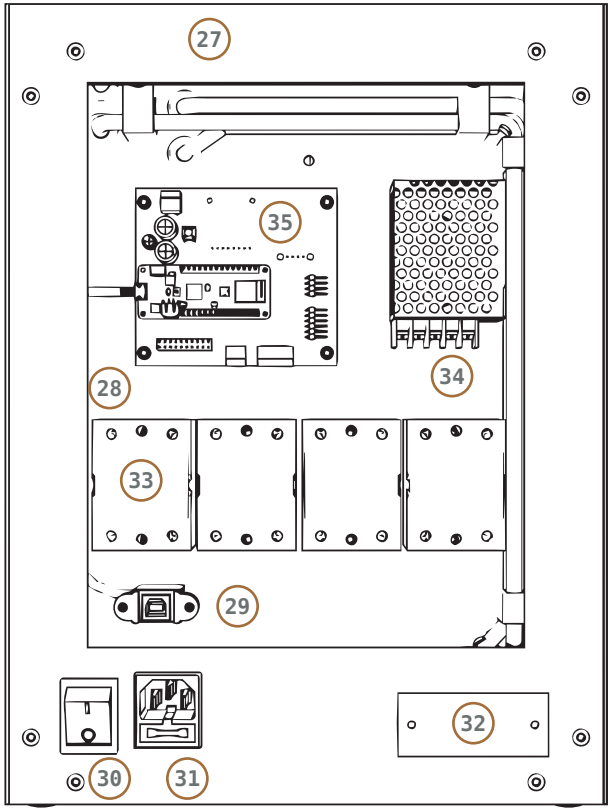
## Front view




## Top view




## Rear view




21. Stainless steel drip tray panel
22. Stainless steel drip tray raster
23. Screen
24. Stainless steel front panel

25. Stainless steel top panel
26. 3D printed refill cap

27. Stainless steel rear panel
28. Acrylic rear panel
29. USB socket
30. On/off switch
31. C13 power socket 230V AC
32. Serial tag
33. Solid Stat Relays (SSR)
34. Power supply
35. PCB

## *First time power on instructions*

Before we switch the On/off button and power the diyPresso Two up, there are some important steps to take and notices to read:

- Plugin the power cable and plug it into a power socket.
- Put a glass under the E61 brewing group.
- Make sure the lever of the E61 brew group is pointing downwards.
- Turn the diyPresso Two on by flipping the On/Off switch.
- Check if the display turns on.
- Follow the instructions on the screen.

Once done, follow the next steps.

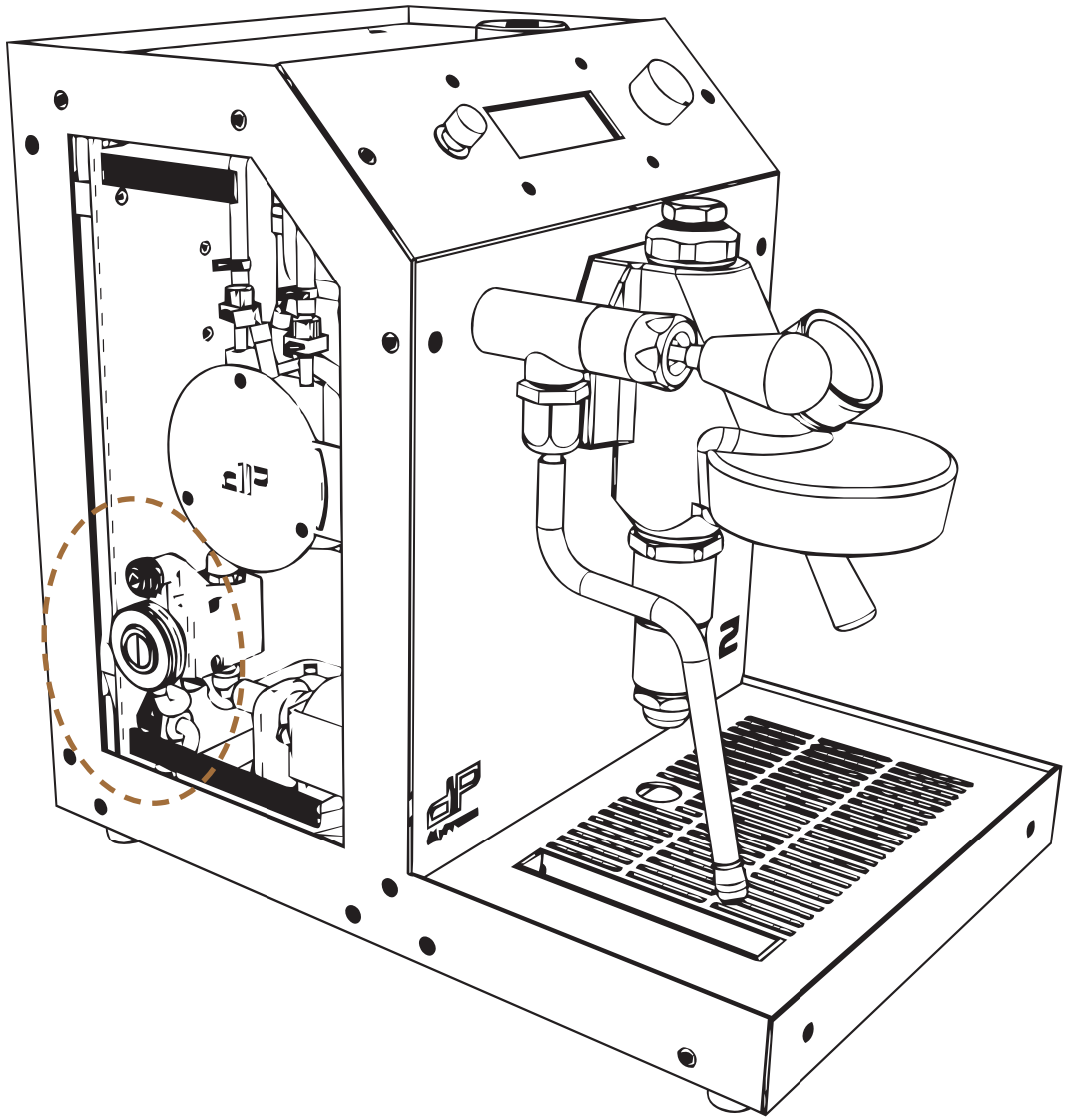
***IMPORTANT NOTICE:***

- Before first use, make sure you have flushed at least three full reservoirs of water in order to rinse the inner spaces of the reservoir, tubes, boiler and E61 brewing group.
- Before first use, make sure you have flushes the steamer for at least 3 times, 30 seconds in order to rinse the inner spaces of the tubes, joystick and steam wand.

## *Adjustment of the pressure*

The regular pressure for espresso is 9 bar. You can modify the pressure by turning the controller at the OPV, located on the left side panel. Use a coin or a large screwdriver to turn the screw of the OPV. In order to check the current pressure, use the blind filter. This is the metal cup without perforations. Remove the 2 cups filter from the portafilter and place the blind filter. Then turn the portafilter in the E61 brewing group. Pull the brewing lever up. The pressure will increase and this is shown on the pressure gauge. Once the pressure is stable, this is the set pressure. To increase the pressure, turn the screw of the OPV to the right, to decrease, turn the screw to the left. If the pump stops, pull down the lever and repeat the cycle.

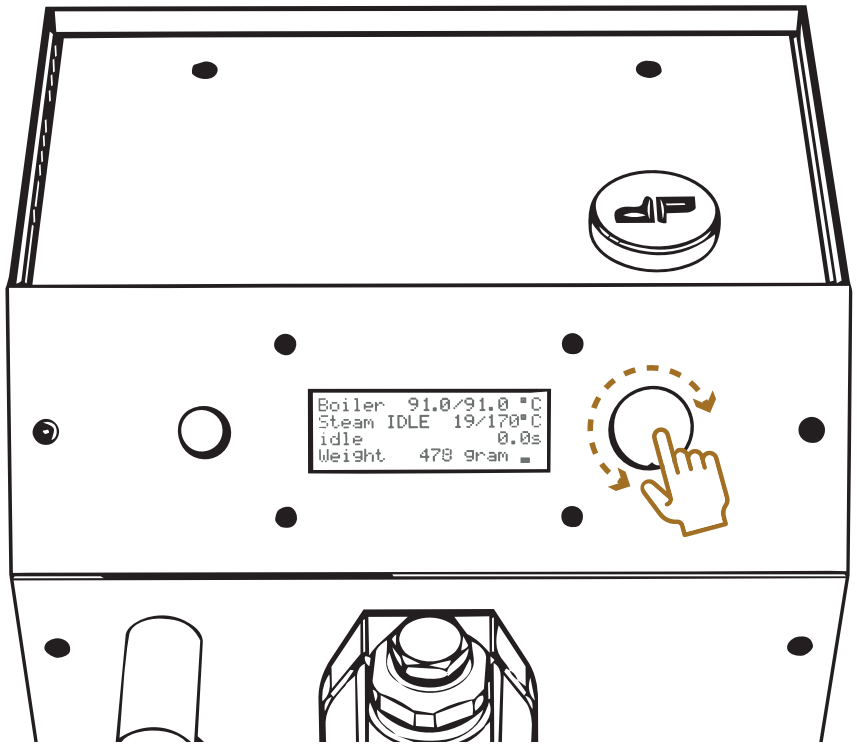
The aim is 9 bar, but off course, your personal preference can be different. Please note: ***don't exceed 10 bar!***



## *diyPresso Two screen*

Once you have powered up your diyPresso Two, after the start-up screen, the main screen appears. On this screen you can find the current status and values of the machine.

1. Boiler temperature vs setpoint of boiler temperature.
2. Steamer status. IDLE / HEAT / RDY / STM and its temperature. Controlled by the button, left of screen. Long press the button to go back to status IDLE.
3. Machine status: Idle/pre-infusion/ infusion/extraction
4. Weight: current weight (holding capacity) of the water reservoir. During extraction: extraction weight.
5. Steam temperature vs setpoint of steam temperature.
6. Timer: extraction time of last shot
7. Indicator of water level



### *diyPresso Two Settings menu*

Push the button right of the screen to enter the menu. The main menu shows the submenus. On the top right, you can see your position in the menu.

```
SETTINGS          1/7
>Brew              ->
Steam              ->
Reservoir          ->
```

Turn the button to move the cursor (>) and push the button to open a submenu. In a submenu, each line shows a setting and its current value.

```
BREW              1/6
>Temperature  98.0°C
 Pre-infusion   3.0s
 Infusion       1.0s
```

To change a setting, move the cursor to it and push the button. The screen shows MODIFY. Turn the button to change the value and push the button again to confirm.

```
MODIFY          BREW
Temperature
  98.5 °C
[TURN]  [PRESS] = OK
```

Choose “< Back” at the end of a submenu to go back to the main menu. Choose “< Exit” at the end of the main menu to leave the menu. If you have changed a setting, the screen asks if you want to save your changes. Turn the button to YES and push the button to save. NO is selected first: push the button on NO to leave the menu without saving.

```
SETTINGS
Save changes?

   [NO]   YES
```

Your changes are only used after saving. If you start a shot while you are in the menu, the menu closes and unsaved changes are lost.

Some items carry out an action, like taring the reservoir. These ask “Are you sure?” first. NO is selected first: turn the button to YES and push the button to

carry out the action. An action is saved immediately.

The last item of each submenu (before "< Back") sets the settings of that submenu back to their defaults, for example "Set brew defs" in Brew. The screen asks for confirmation; NO is selected first. Like a changed setting, this is only saved when you leave the menu and choose YES at "Save changes?". The tare of the reservoir and the shot counter are not changed.

```
BREW
Reset brew to
default values?
   x[NO]   YES
```

***The menu has these submenus:***

| Submenu | Contents |
|---|---|
| Brew | brew settings and shot counter |
| Steam | steam settings |
| Reservoir | tare and weight trim of the reservoir |
| Boiler PID | temperature controller of the boiler (advanced) |
| Steam PID | temperature controller of the steamer (advanced) |
| System | status, WiFi, knob direction, commissioning, reset and version |

***Brew***

1. Temperature: This is the value for the temperature setpoint of the boiler. Default is 98.0°C.

2. Pre-infusion: This is the pre-infusion time, the period that the pump is on to wet the puck. Default is 3.0 s.

3. Infusion: Infusion time indicates the time the pump is off and the puck can settle. Default is 1.0 s.

4. Extraction: Extraction time or shot time is the time the pump is on again after pre-infusion and infusion, actually extracting the espresso.
   Default is 25.0s.

5. Shot counter: Counts the number of shots that have been made. Push the button to reset the counter to 0. The screen shows the current count and asks “Reset counter?”.

   Shot counter  1234
   Reset counter?

   [NO]  YES

6. Set brew defs: Sets settings 1-4 back to their defaults. The shot counter is not changed.

### *Steam*

1. Temperature: This is the value for the temperature setpoint of the thermoblock. Default is 165.0°C.

2. Pump power: Adjust the power for the steam pump. Standard is 100%.

3. Set steam defs: Sets settings 1-2 back to their defaults.

### *Reservoir*

1. Tare (full): Here you can tare the balance of the reservoir. Fill up the reservoir, looking on the side of the diyPresso so you can make sure not to overflow the reservoir. When the reservoir is full, push the button on this item and confirm with YES. The diyPresso will know the reservoir is tared and will after this stop automatically when the water runs out.

2. Weight trim: Here you can compensate the balance below the reservoir. If the balance (load cell) is slightly inaccurate, you can compensate for this with this setting. Default is 0.00%.

3. Set reservoir defs: Sets the weight trim back to 0.00%. The tare is not changed.

### *Boiler PID*

These are the settings of the temperature controller (PID controller) of the boiler. The controller sets the heating power from three parts: the proportional part (P),

the integral part (I) and the derivative part (D). We have pretuned your machine, so normally you should not have to change these settings. If needed, you can always go back with Set boiler PID defs at the end of this submenu, or System > Reset defaults.

1. P-Gain: Proportional gain of the PID temperature controller. The proportional part gives more power the further the temperature is below the setpoint. A higher value reacts stronger, but can make the temperature swing. Default is 6.0.

2. I-Gain: Integral gain. The integral part slowly builds up as long as the temperature is not at the setpoint, so the setpoint is reached exactly. A higher value builds up faster, but can cause overshoot. Default is 0.05.

3. D-Gain: Derivative gain. The derivative part reacts to how fast the temperature changes and dampens the swing. Default is 150.

4. DFF factor: The Dynamic Feed Forward (DFF) Factor used for tuning the aggressiveness of the DFF. The DFF adds heating power during a shot based on the reservoir outflow, to compensate for the cold water that enters the boiler. Default is 70%, range: 0%-150%.

5. DFF decay: How fast the extra power of the DFF fades out after the shot. A lower value fades out faster. Default is 0.970, range: 0.900-1.000.

6. Feedforward: This is the static feed forward setting for the PID controller. This is the amount of power that is needed to float the temperature. This setting compensates for heat loss towards the environment. Default is 5.5%.

7. Windup min: The low limit of the integral part of the controller. This prevents the integral part from building up too far (wind-up). Default is -15%.

8. Windup max: The high limit of the integral part of the controller, see setting 7. Default is 8%.

9. Integr. band: The integral part of the controller only builds up when the temperature is within this band around the setpoint. Far from the setpoint, for example while heating up, the proportional part does the work. Only used when Cond. integr is ON. 0 = no band. Default is 4.0°C.

10. Cond. integr: Conditional integration. When ON, the integral part does not build up when the heater is already at full or zero power, or when the temperature is outside the Integr. band. This prevents overshoot. Default is ON.

11. I-down fact.: Above the setpoint, the integral part goes down this many times faster than it builds up. A higher value reduces overshoot. Default is 1.0 (same speed), range: 1.0-5.0.

12. Brew I-hold: When ON, the integral part is held during the temperature dip after a shot. This prevents overshoot after each shot. Default is ON.

13. Hold timeout: The Brew I-hold ends at the latest this long after the shot. Default is 180 s.

14. Dip window: The Brew I-hold only starts when the temperature drops below the setpoint within this time after the shot. Default is 60 s.

15. Set boiler PID defs: Sets settings 1-14 back to their defaults.

### *Steam PID*

These are the settings of the temperature controller of the thermoblock of the steamer. Like the boiler, we have pretuned your machine, so normally you should not have to change these settings. The steamer uses two sets of gains: one while the steam pump is off (heating up and ready) and one while the steam pump runs (steaming).

1. P-Gain: Proportional gain while the steam pump is off. See Boiler PID, setting 1. Default is 3.5.

2. I-Gain: Integral gain while the steam pump is off. Default is 0.05.

3. D-Gain: Derivative gain while the steam pump is off. Default is 50.

4. Feedforward: The feed forward for the thermoblock. Default is 3.0%.

5. Pump P-Gain: Proportional gain while the steam pump runs. Default is 5.0.

6. Pump I-Gain: Integral gain while the steam pump runs. Default is 0.10.

7. Pump D-Gain: Derivative gain while the steam pump runs. Default is 50.

8. Windup min: The low limit of the integral part, see Boiler PID, setting 7. Default is -5%.

9. Windup max: The high limit of the integral part. Default is 100%.

10. Integr. band: The band around the setpoint in which the integral part builds up, while the steam pump is off. See Boiler PID, setting 9. Default is 5.0°C.

11. Pump I band: The same, while the steam pump runs. 0 = no band. Default is 0.0°C.

12. Cond. integr: Conditional integration, see Boiler PID, setting 10. Default is ON.

13. I-down fact.: See Boiler PID, setting 11. Default is 3.0.

14. Set steam PID defs: Sets settings 1-13 back to their defaults.

### *System*

1. Status: Shows the machine status: the status of the brew process and of the boiler, and possible errors of the brew process, the boiler and the reservoir. Push the button to go back.

2. WiFi: To put the diyPresso in a WiFi network: OFF, ON or CONFIG-AP. (setting not yet activated)

3. Knob dir: The direction of the rotary push-turn button: NORMAL or REVERSE. With REVERSE, turning left and right are swapped. The new direction is used after saving.

4. Commissioning: Restarts the commissioning sequence. Push the button

and confirm with YES. The menu closes and the commissioning starts.

5. Reset defaults: Back to factory settings. Push the button and confirm with YES. The tare and weight trim of the reservoir and the commissioning status are kept.

6. Firmware: Shows the firmware (software) version, for example 2.0.0-B2.

7. Hardware: Shows the machine model and hardware revision, for example “One r1” or “Two r1”.

### *Extra features*

The diyPresso Two includes several advanced features, with more functionality planned for future updates.

1. Extend the extraction: Once an extraction has finished, you can continue brewing by pressing the right button. The pump will start again and extraction will resume. To stop the extraction, return the lever to the vertical position.

2. Sleep mode: After 1 hour of inactivity, the machine automatically enters Sleep Mode. In this state, the boiler is no longer actively heated to maintain temperature.

   To wake the machine, simply press the right button.

   Would you like to put the machine to sleep sooner? Press and hold the right button for a few seconds to enter Sleep Mode manually.

## *First extraction*

Now you're all set to extract your first coffee. Add around 18 grams of coffee in the 2-cups filter. Use the tamper to equalize the grind and provide a litte pressure to make the grind compact. Turn the portafilter into the E61 brewing group. Place a cup underneath the portafilter and pull the brewing lever up.The extraction process starts.

The software will run the extraction according to the settings. It will also stop the extraction process automatically. Nevertheless, always push the brewing lever in the vertical position once the extraction is finshed.

There are many factors involved in the perfect extraction. To name a few: coarseness of the grind, weight of the grind, pressure delivered to the grind, extraction time, pressure and temperature. If the extraction is very fast, you will need to increase the coarseness of the grind. It will take some time and some shots to find the best settings for a good result. And note: every coffee bean is different so adjustment of the grind is a recurring action when changing the beans.

***IMPORTANT NOTICES:***

- the brewing lever has three positions:
    - vertical: the valve in the brewing group is closed, the pump is not activated
    - 45 degrees: the valve in the brewing group is open, the pump is not activated
    - 90 degrees: the valve in the brewing group is open, the pump is activated through the microswitch

- always pull the lever to its vertical position once the extraction process is finished. This will close the valve and release the overpressure and the microswitch will switch off. Leaving the lever at 90 degrees, might result in overheating.

- Before first use, make sure you have flushed at least three full reservoirs of water in order to rinse the inner spaces of the reservoir, tubes, boiler and E61 brewing group.

## *First time steaming*

Now let's steam!

Push the button left of the screen. On the screen, the steam status will change into 'Steam HEAT' and the temperature indicator will rise untill it reaches its setpoint. Once the setpoint is reached, the status will change into 'Steam RDY'; you're ready to steam. You will need to activate the pump: press the button once more, left of the screen. The status changes into 'Steam STM'. Then pull the lever of the joystick in any direction. This will open the valve and steam will exit the steam wand. When you're done steaming, pull the joystick lever in its middle position. To de-activate the pump, press the button one more time. If you long-press the button, the steamer status will go back to 'Steam IDLE'.

***IMPORTANT NOTICES:***

- There will always be some unheated water in the steam wand during the heating process. Pre-steam before actually steaming your milk.

- Always have the tip of the steam wand below the level of your milk to avoid splashes.

- Steamer button workings:
  IDLE - HEAT x RDY - STM
  short press: HEAT x RDY
  or long press: IDLE

- Before first use, make sure you have flushes the steamer for at least 3 times, 30 seconds in order to rinse the inner spaces of the tubes, joystick and steam wand.

Enjoy playing around in your search for the best extraction. Thanks for being part of the new coffee experience and if you have some feedback, we are happy to hear from you!

diyPresso