

S O V D A

User Manual

Precision Fill Mini

Rev 0.1.0. - October 31th, 2022

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Introduction

Thank you for purchasing a Sovda Precision Fill Mini! The Sovda Precision Fill Mini drastically reduces man hours and waste associated with coffee packaging. With the unique Fast Feed function, wholesale bagging can be achieved at a speed and efficiency second to none. Precise load cell computations and over/under triggers make retail bagging a breeze, even for clients with particular needs like grocery stores. An efficient, beautiful design and intuitive interface ensures both the operator and anyone who enters your roastery can appreciate this streamlined engineering.

Overview

This document details specific machine operating functions, UI information, troubleshooting, and best operating procedures. Operators should go through the accompanying “Commissioning & Training Guide” for a quick overview of key machine operations. More detailed information can be found below.

Powering the Machine On/Off

1. Make sure the air is connected and pressure is at 0.3mp.
2. Make sure the scale sensor protector is removed. Loosen the bolt and screw and remove them.



3. Push the center power button on the right underside of the machine to turn the machine on. The screen may take some time to load, but the power

switch will immediately glow amber:



4. To power off the machine, simply press the power button again.

Changing the Language

The Precision Fill Mini currently supports English and Chinese. To change the language:

On the home page System Settings > "0">OK, yellow button Bottom right > English or 简体中文.



Changing the password

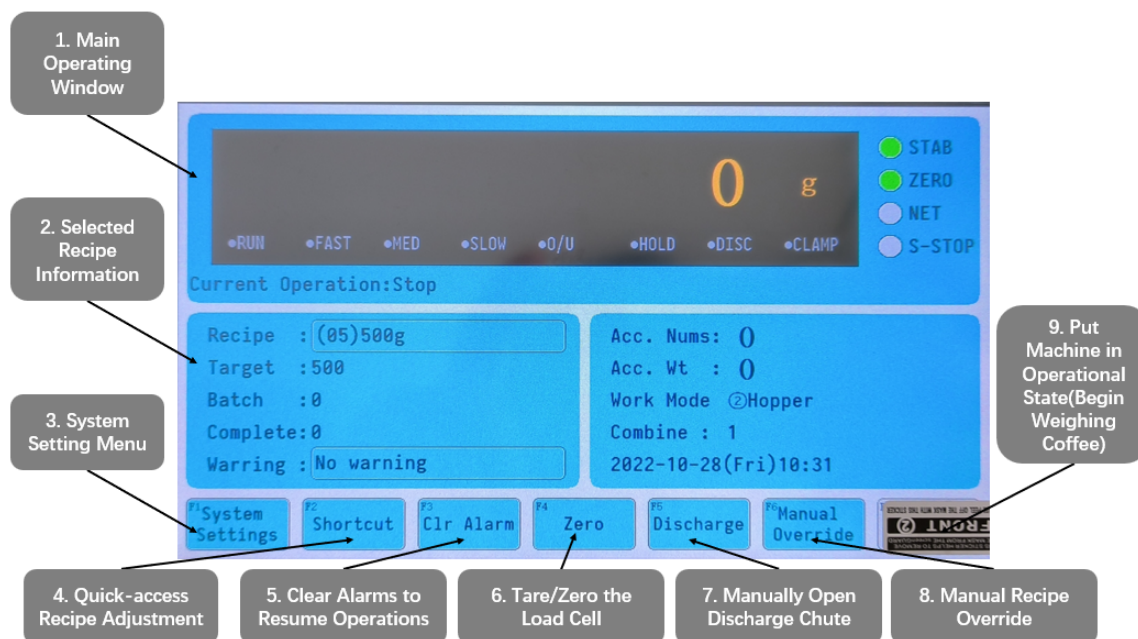
You will receive a password prompt when you go to system maintenance. By default the password is 0. You can change it and have it as short as you want. Here is how to change it:

(home page)> System Settings > "0"> OK > Password > "0"> OK > set > type the new password 1st time > OK > type the new password 2nd time > OK > (Back/Home)



Home Page

The Home Page is where all main menu items are organized and can be accessed. Additionally, the Home Page is the main operating page of the Precision Fill Mini.



【Recipe】The current Recipe number and Recipe name are displayed: (05)200g

【Target】The recipe targets output weight.

【Batch】The desired amount of bag that constitutes a batch. For instance, you set a batch at 10 bags. 10 bags are filled at each time, you can't fill more bags, unless you press "clr alarm" in order to continue bagging above the set batch.

【Complete】The number of packages completed this time.

【Warning】Displays the current alarm and alarm contents.

【Acc. Nums】Total number of bags completed.

【Acc. Wt】Total completed weight.



The gray color indicates the stop state, click on it to start packing.



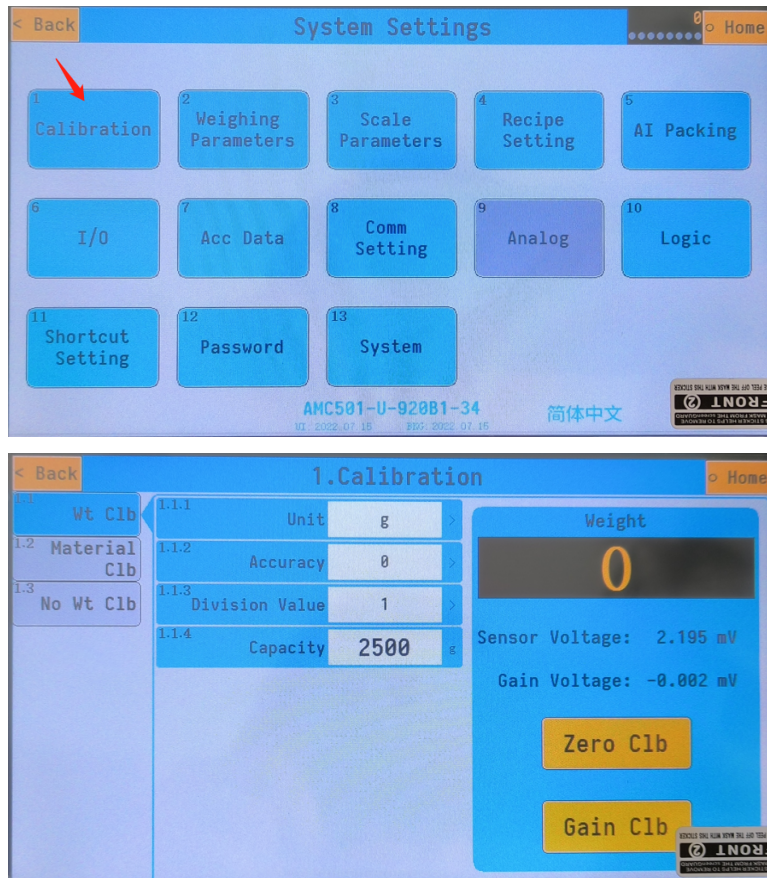
Click on Manual Override to discharge all coffee in the hopper.



When you have completed your desired amount of bags that are set in "Batch", you are not allowed to fill more bags. You'll need to hit the "Clr Alarm" button to continue to fill the bags over the limit amount of bags you set. (see how to set a cycle).

Weight Settings

(home page) > System Settings > Calibration > choose the type of calibration method and conduct the calibration > click Home/Back.



- **Unit:** Type of unit will be shown
- **Accuracy:** The amount of decimal
- **Division Value:** The interval in which it will show the weight. 1 means it will show every 1g.

Recipes

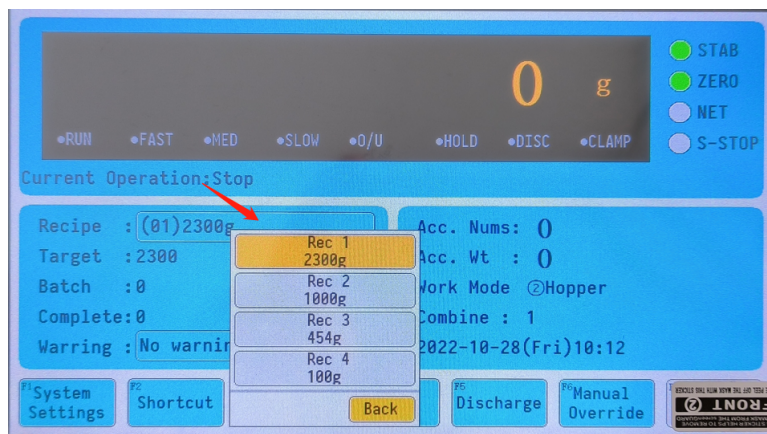
The Sovda Precision Fill Mini comes pre-set with five common recipes (recipe 1 to 5). Here are the recipes pre-entered:

Recipe #	Value shown	Value
1	2,3 kg	81 ounce
2	1 kg	/
3	454 g	1 lb
4	100 g	
5	500 g	

Note: For some smaller bags where Med feed is not used, the Med/Fast Feed chamber will retain approximately 500g. For bags over 125g use of Med Feed is recommended and will reduce retention.

Selecting a Recipe

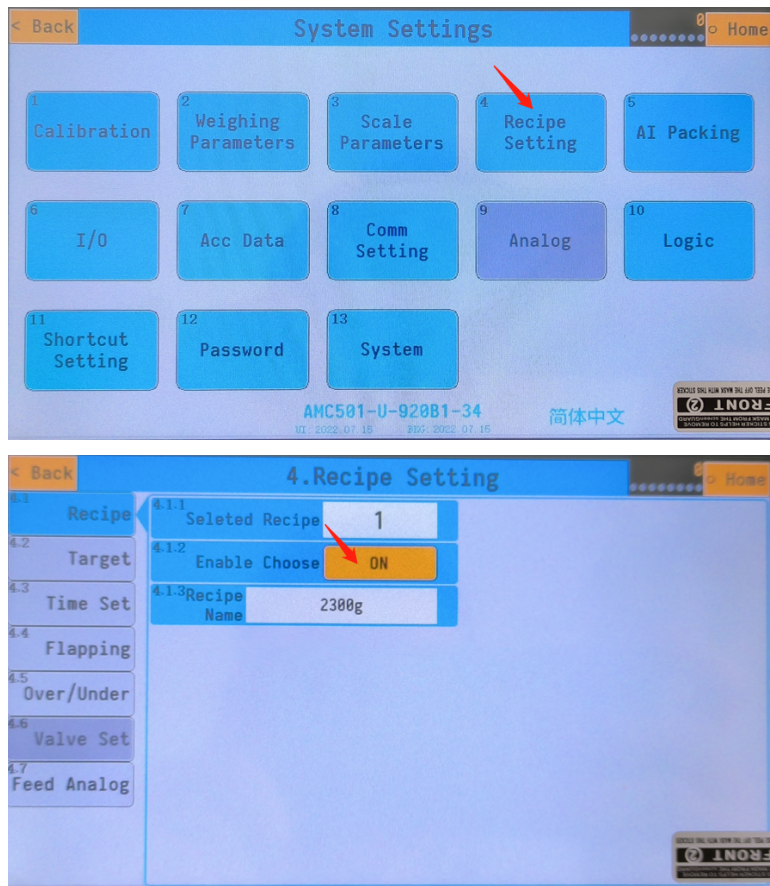
On the Home Screen, click Recipe > select a recipe > Back



Note:

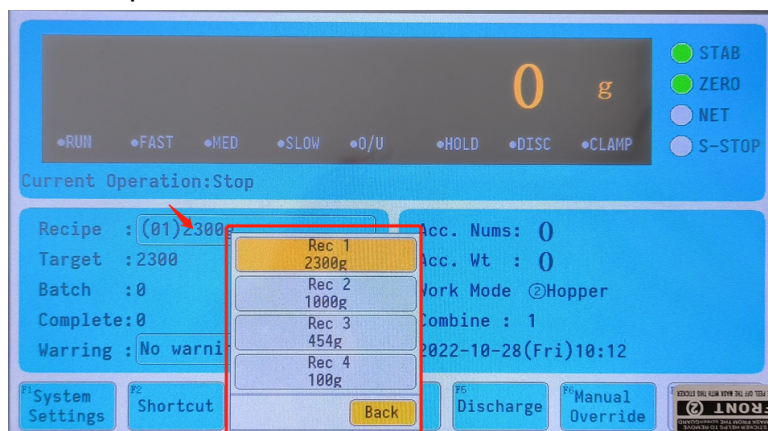
To make sure you are able to select a recipe like above, you need to switch on the “Enable Choose” like below steps

Tap System Settings > “0” > OK > Recipe Setting to display the current recipe setting page, then click **on/off** on the right of Enable Choose.



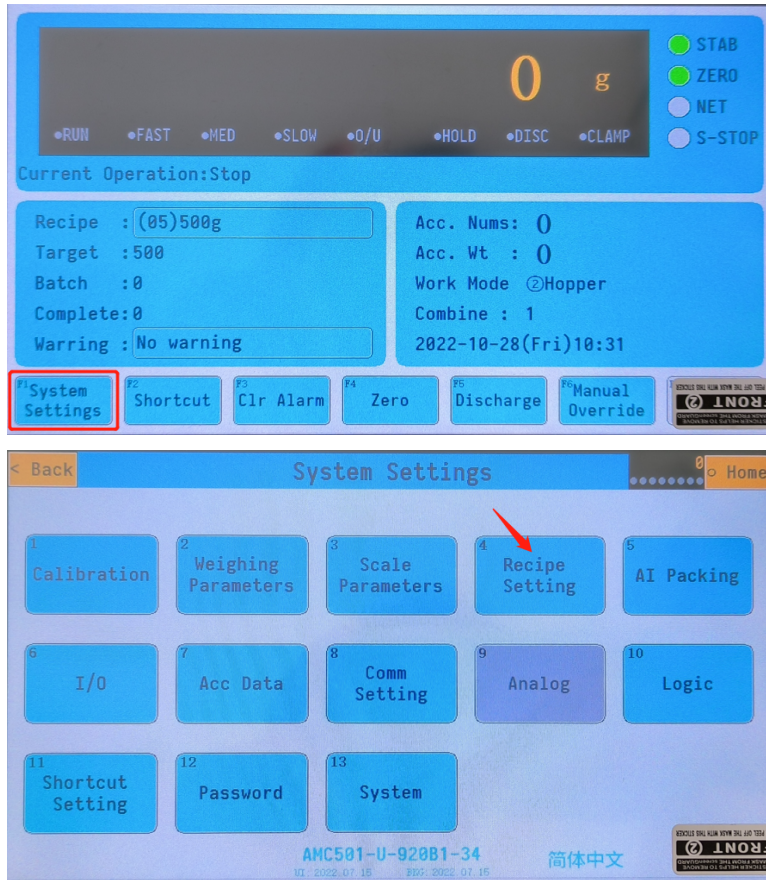
Add a new Recipe

Before you add a new recipe, you can click the Recipe to check current recipes, there are 4 recipes now.

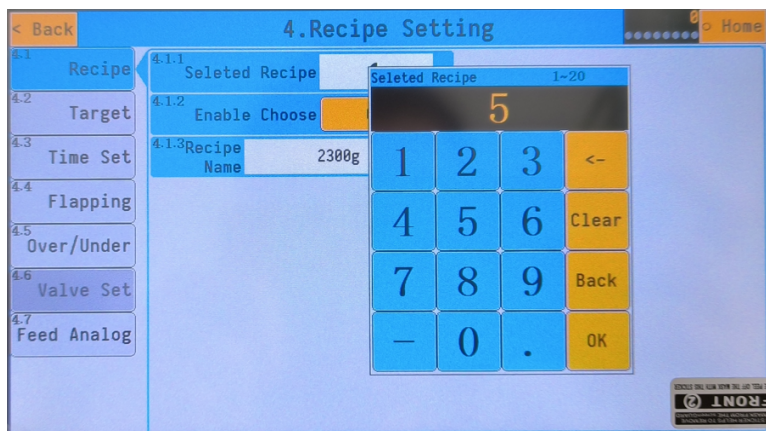


For example, you can add a new recipe called “500g” according to the following steps.

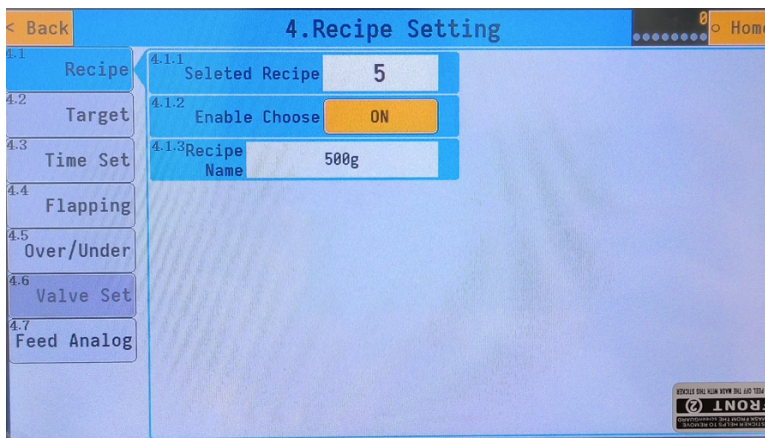
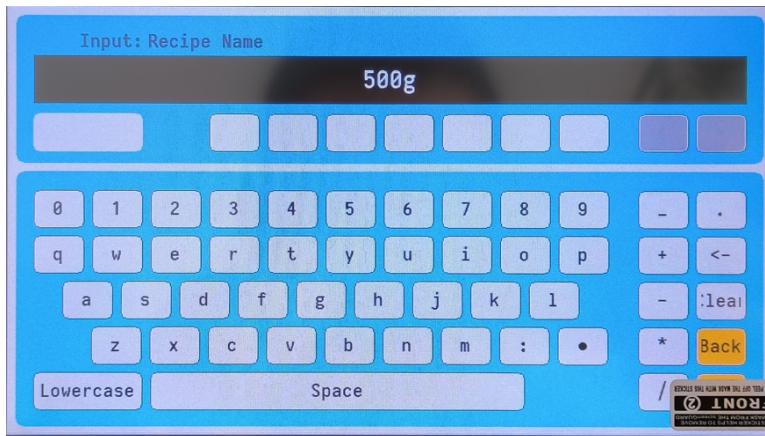
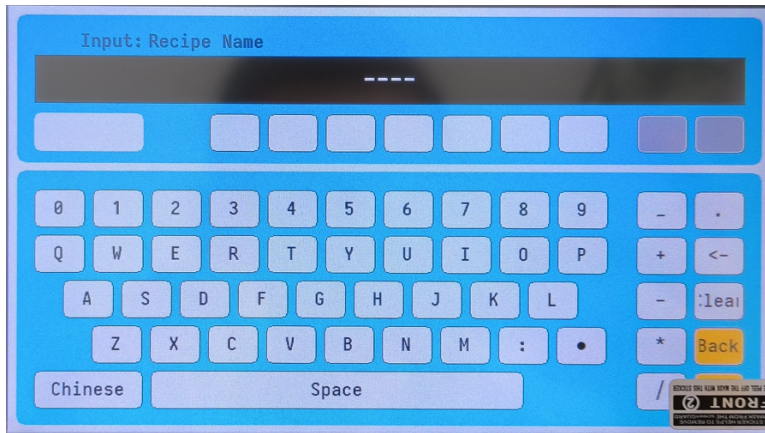
1. Tap System Settings > “0” > OK > Recipe Setting to get to the recipe data page



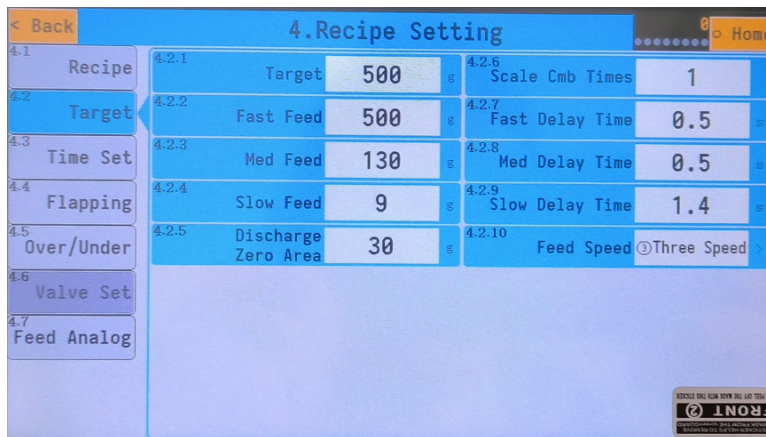
2. Click the right area of Selected Recipe > enter “5” > OK to add a new recipe number



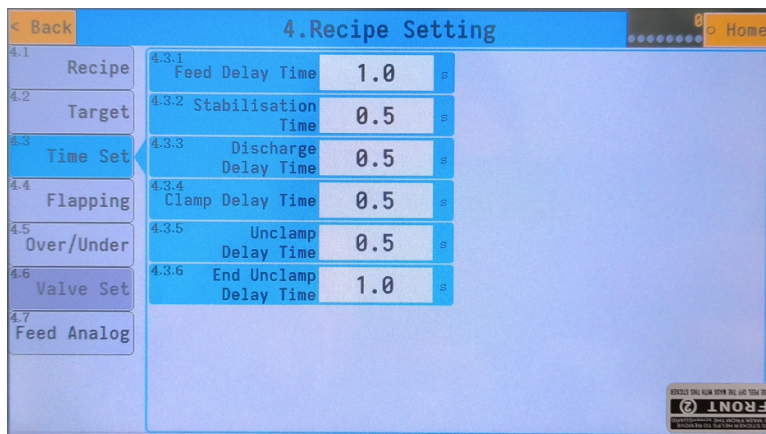
3. Click Recipe Name to edit the name of the new recipe, enter “500g” as the name and click OK to complete naming



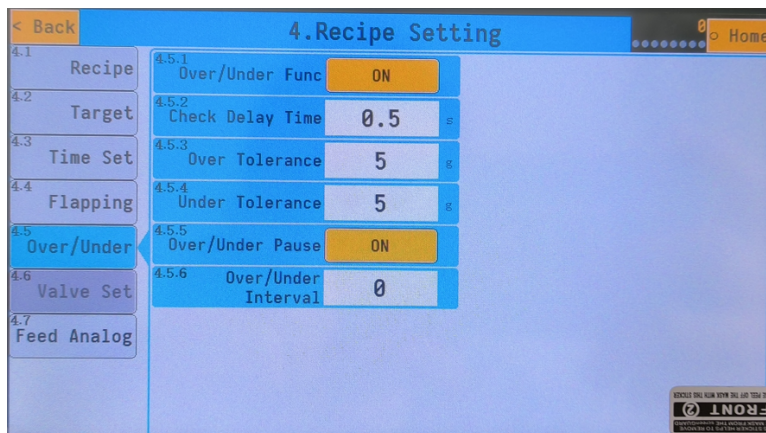
4. Click Target to input the parameters, click the white rectangular box to input the value



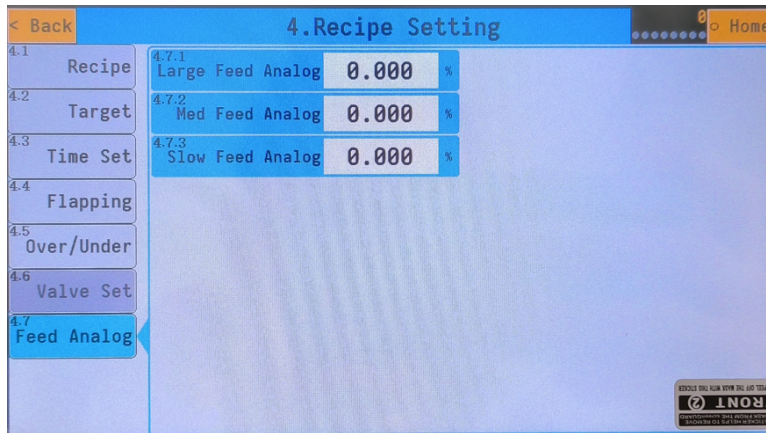
5. Click Time Set to edit the settings



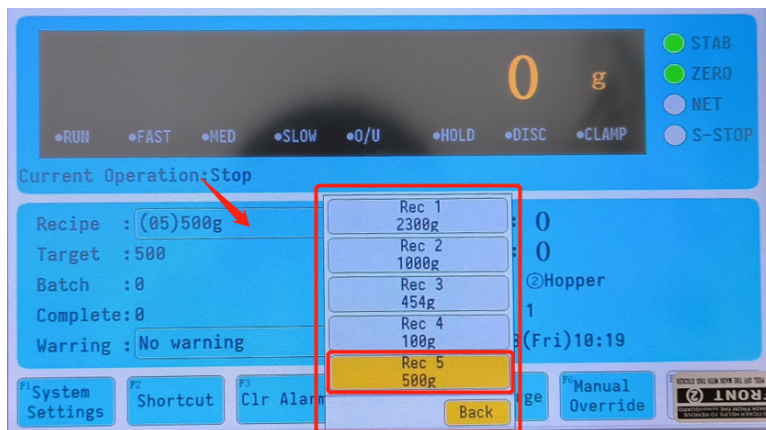
6. Click Over/Under to edit the settings



7. Generally, you don't need to set Flapping, Valve Set and Feed Analog, just keep what they were.



8. Click Back/Home to complete the settings, and you have got your 5th recipe



Modifying a Recipe

Some explanations first:

There is only one parameter you can modify in a recipe; the weight per bag. The rest of the settings (speed of feeder, delay, have already been set).

If you have a recipe between 100g and 2.5kg, you can modify an existing recipe as follows:

- A recipe for a bag that is lower than 1kg: Modify recipe 3, 4, or 5 (454g, 100g, 500g)
- A recipe higher than 1 kg: Modify recipe 1 or 2

Note:

The reason for this is that for a recipe higher than 1 kg, the feeder uses two vibration speeds. For recipes less than 1kg, the vibrator uses one speed.

For **How to modify the recipe parameters**, you can refer to steps 1, 4, 5, 6 and 7 in [Add a new recipe](#).

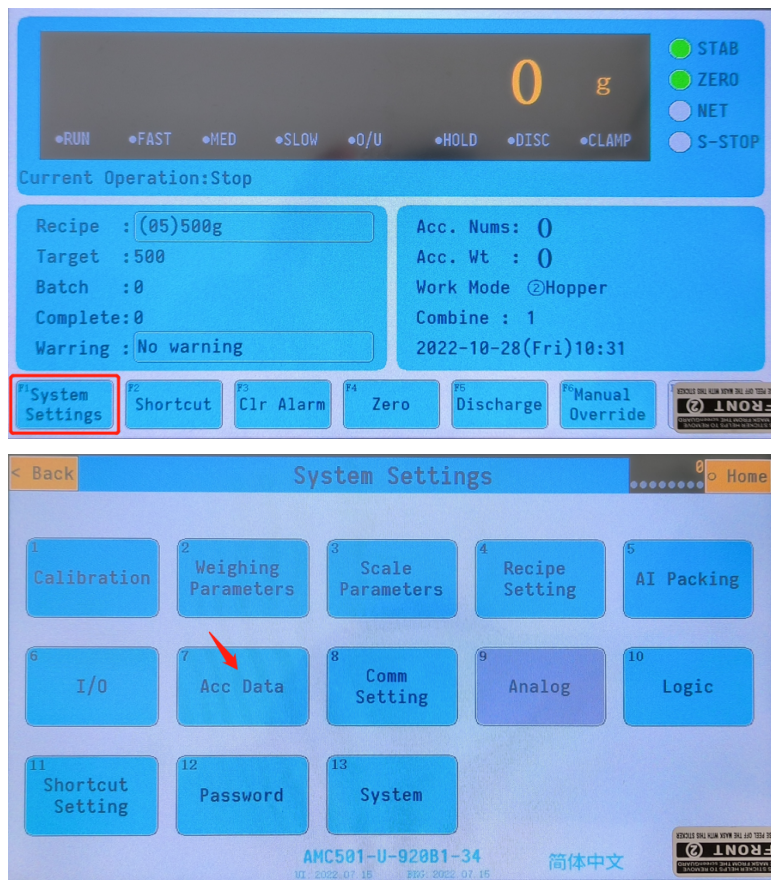
How to use set-bat function

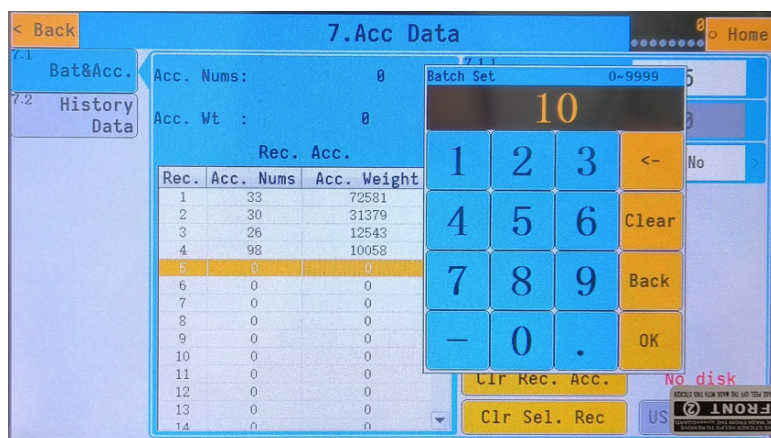
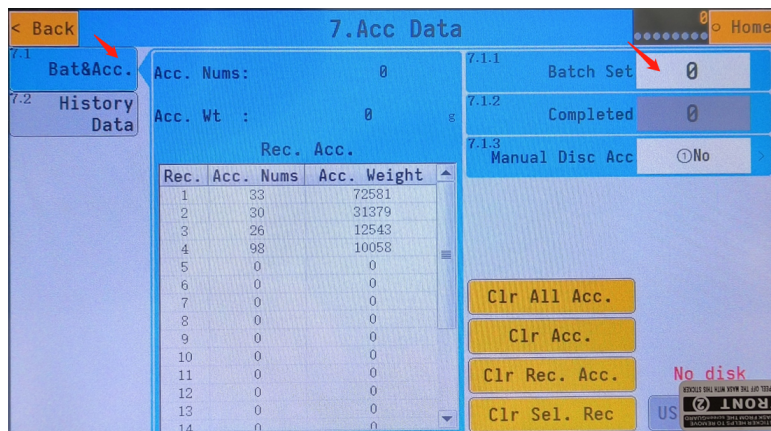
a) Some explanations

The machine has a function called “set-bat” for setting batches. Use it to set a number of packages to complete. This is your batch. When the batch is completed it will stop filling. To continue filling when your number of batches is completed, click on “clr alarm” in the main menu.

b) How to set number of bag in a cycle

System Settings > Acc Data > Batch Set > enter your number of bag(i.e. “10”) > OK > Home/Back



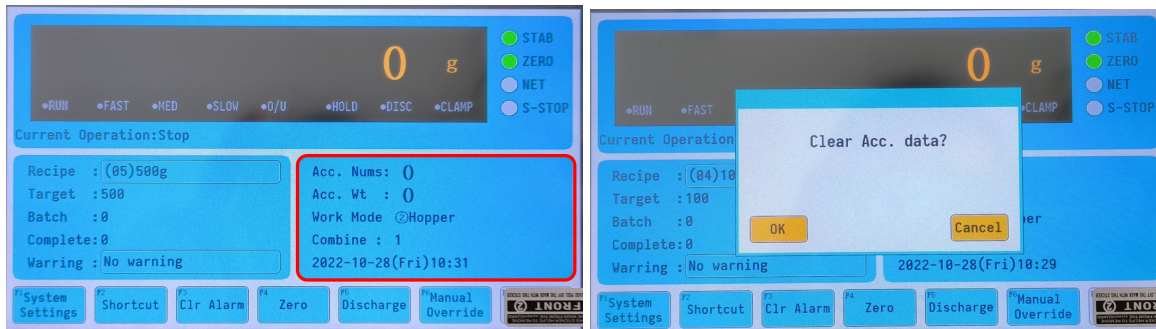


Note:

If the Batch Set is set "0", that means this function is not activated. Only when the value is set with a number bigger than 0, the Batch function will be activated.

How to tare the amount of bag filled

On the home page click on the right box in red. A pop up window asks you "Clear Acc. Data ?" click OK.



Changing Outlet Heads

Sovda offers various outlet head attachments to fit every type of coffee bag, from 5 lb wholesale selections to small retail bags. Regardless of which head you choose, swapping heads is very easy:

1. Holding onto the attached head, loosen the tri-clamp until the clamp can swing out of the engagement area:



2. Slide the tri-clamp and head off of the outlet:



3. Place the tri-clamp around the flange on the desired head:



4. Slide the head and tri-clamp onto the outlet:




5. Orient the head direction and tighten the tri-clamp:

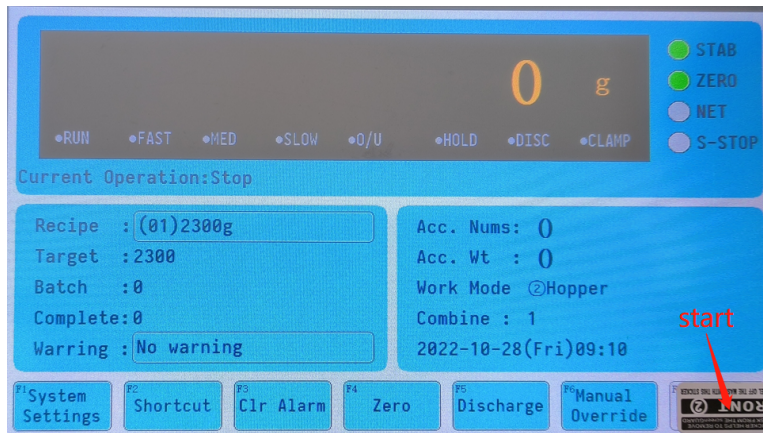


A note about our filling heads

Our outlet heads provide superior ergonomics and help reduce packing time, however they are more delicate than traditional stainless steel heads. For this reason, we consider these heads to be classified as a consumable. To extend the life of your filling head, avoid dropping, colliding with, or otherwise putting excessive force on the heads while in use or otherwise. When your head does break, you can repair it using cyanoacrylate glue (super glue). If you need a replacement, please contact sales or your Technical Brand Ambassador.

Operating Your Precision Fill Mini

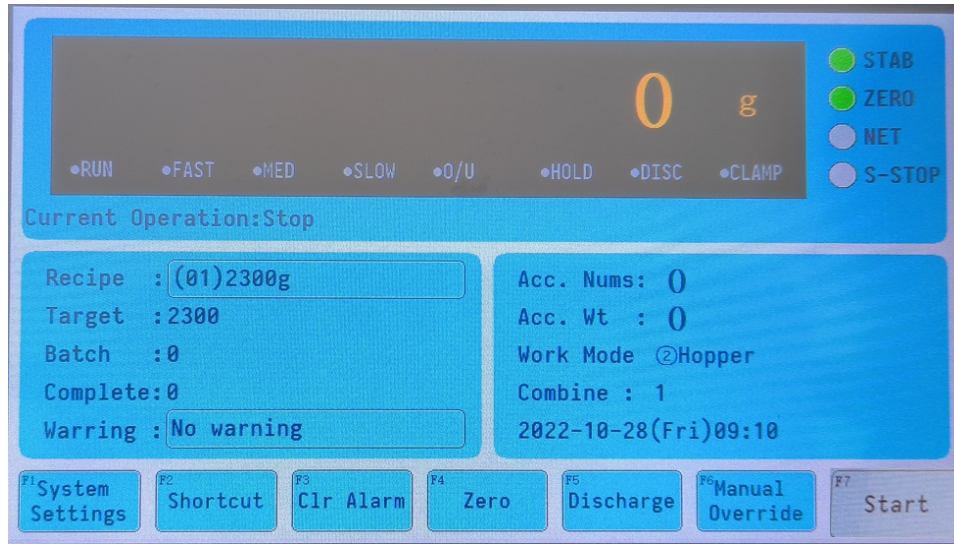
1. Ensure your air compressor is running, air to the machine is on, and the machine is powered on. Make sure the air pressure is at 0.3 MPa.
2. Ensure the foot pedal is plugged in and oriented in a comfortable operating position.
3. On the Home Screen, tap “start” ()





4. You should immediately hear the weighing cycle begin. Once the weight stabilizes, place your bag on the head and step on the foot pedal to discharge coffee.

HMI Function Explanations

Home



Buttons

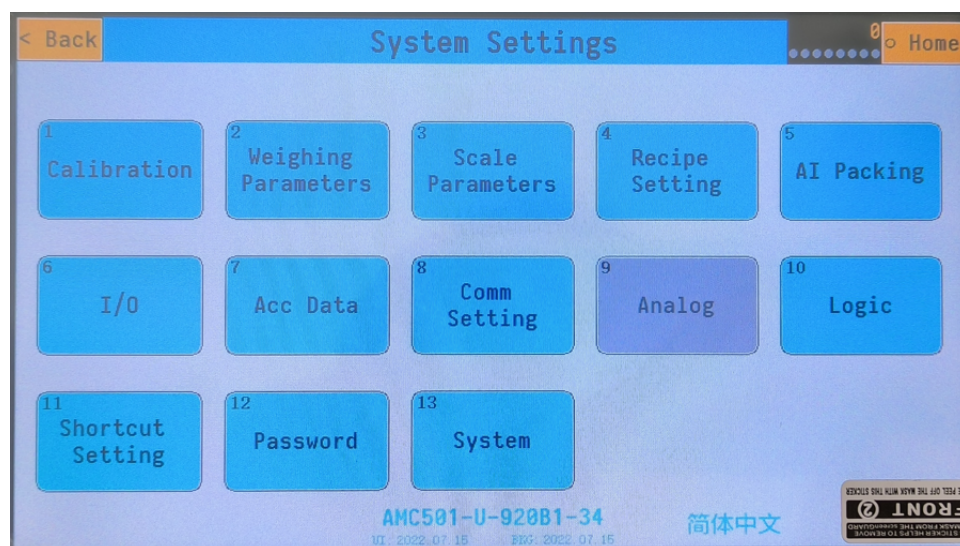
- **System Settings:** Opens the System Settings page
- **Shortcut:** Opens the Shortcut parameter page of the set recipe.
- **Clr Alarm:** Clears all alarms, allowing machine to continue operation
- **Zero:** Zero/Tare the load cell
- **Discharge:** Manually drops all weighed coffee.
- **Manual Override:** Allows for a manual override of machine automation for specific testing and use cases.
- **Start**(): Puts the machine in an operational state. Initial weighing cycle will commence.
- **Stop**(): Takes the machine out of operational state. The weight cycle will stop.

Text

- **Current Operation:** Indicates current machine operation stage
- **Recipe:** Displays selected recipe name
- **Batch:** Counts number of batches completed in your current group
- **Warning:** Indicates whether there is an equipment operations warning
- **Complete:** number of bags that has been completed by now

- **Acc. wt:** Total weight filled
- **Acc. Nums:** Total batches processed

System Settings



Buttons

- **Calibration:** Opens the Weight Calibration Settings screen
- **Weighing parameters:** Opens the Weighing Parameters screen
- **Scale Parameters:** Opens the Scale Parameters screen
- **Recipe Setting:** Opens the Recipe Settings screen
- **AI Packing:** Opens the AI Packing setting screen
- **IO:** Opens the Input/Output logic settings screen
- **ACC Data:** Opens the Batch Settings screen
- **Comm Setting:** Opens the PLC Settings screen
- **Logic:** Opens the Program Logic settings screen
- **Shortcut Setting:** Opens the Shortcut Setting screen
- **Password:** Opens the Password Settings screen
- **System:** Opens the System Settings screen

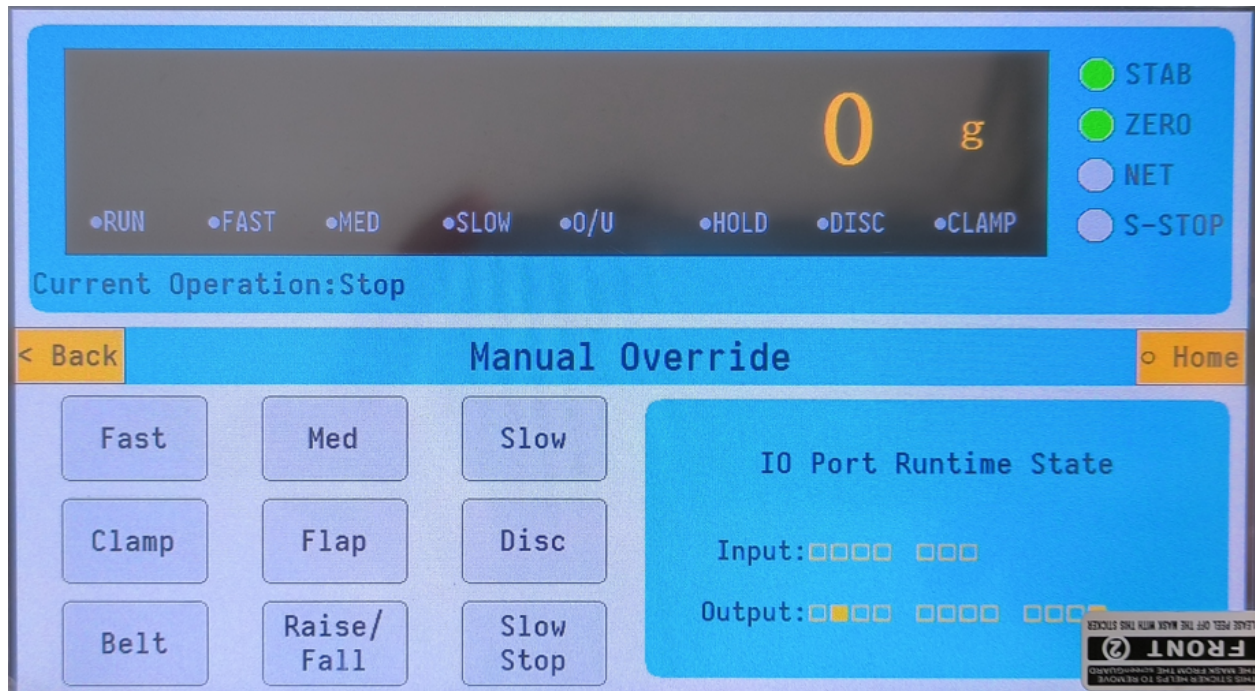
Shortcut

Shortcut	
4.2.1 Target	500 g
4.2.2 Fast Feed	500 g
4.2.3 Med Feed	130 g
4.2.4 Slow Feed	9 g
5.1.1 AI Pack	OFF
4.2.10 Feed Speed	③Three Speed >
4.2.5 Discharge Zero Area	30 g

Text

- **Target:** Target output weight for the recipe (The amount going into the bag)
- **Fast Feed:** Fast Feed value (see Recipes: [Modifying a Recipe](#))
- **Med Feed:** Med Feed value (see Recipes: [Modifying a Recipe](#))
- **Slow Feed:** Slow Feed value (see Recipes: [Modifying a Recipe](#))
- **AI Pack:** switch on/off to choose if use or not use the intelligent packing function

Manual Testing

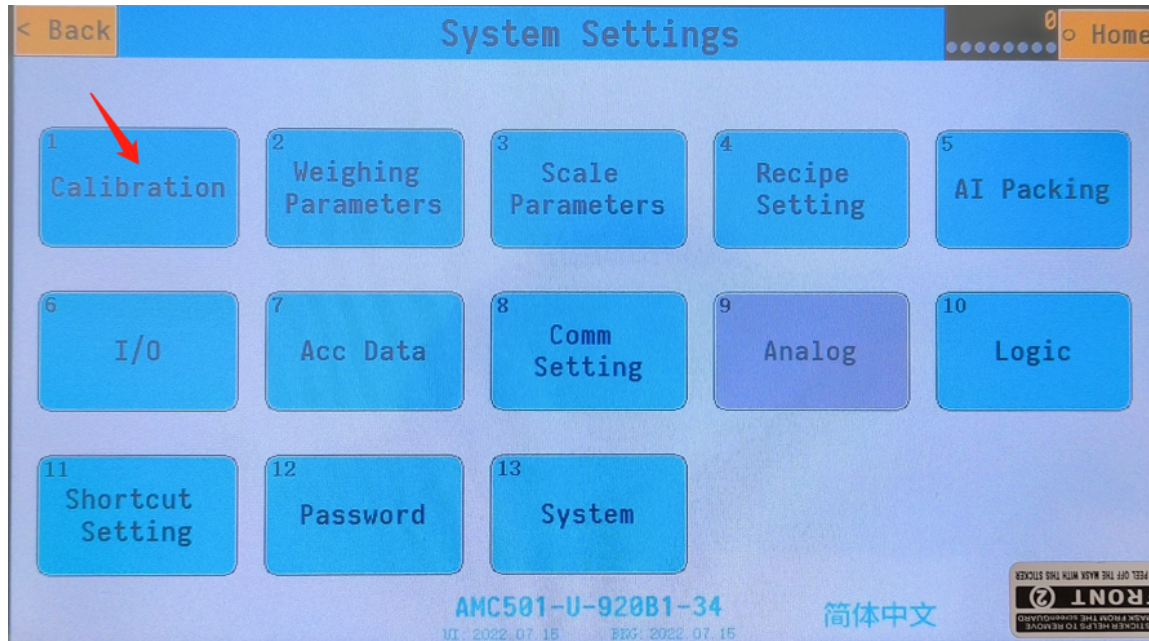


Buttons

- **Fast:** Manually actuate Fast Feed
- **Med:** Manually actuate Med Feed
- **Slow:** Manually actuate Slow Feed
- **Clamp:** Manually actuate foot pedal
- **Flap:** Not used
- **Belt:** Not Used
- **Raise/Fall:** Not Used

Calibration

From the [Systems Settings](#) page, press the “**Calibration**” button to access the calibrations menus.



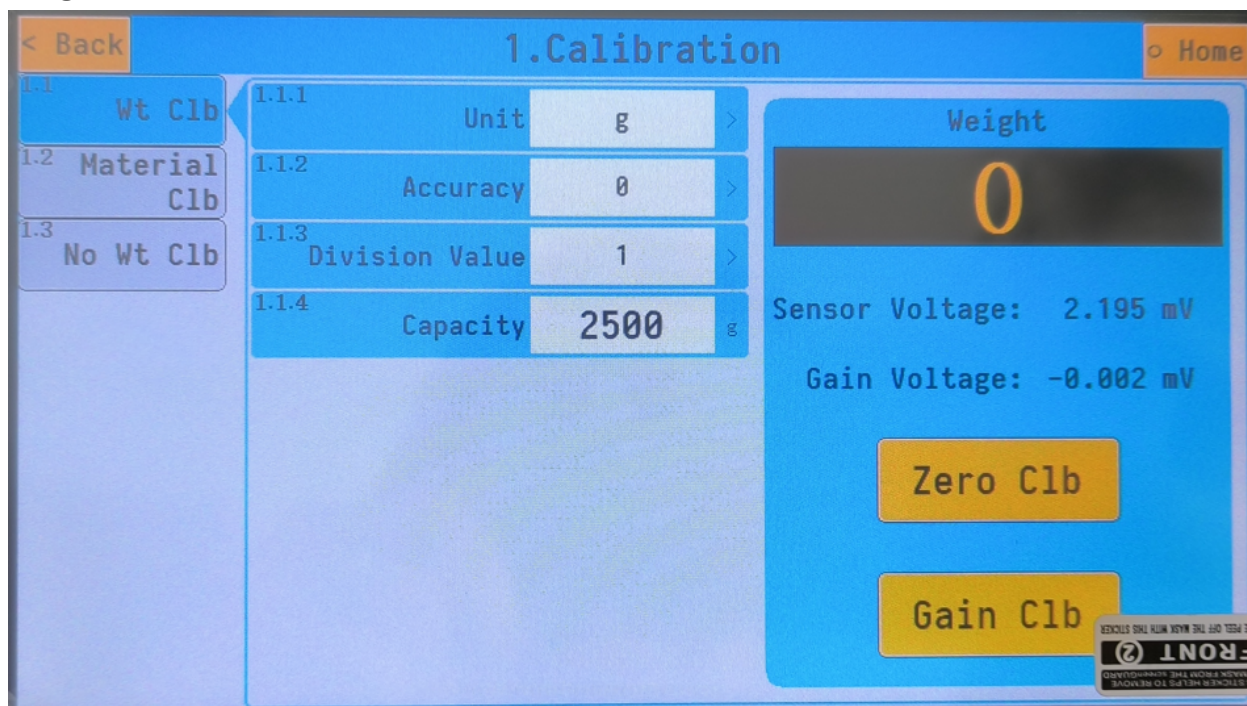
There are three ways to calibrate the scale of your Precision Fill Mini:

1. Weight Calibration (abbreviated as “Wt-Clb”): Calibrate with a known mass.
2. Material Calibration (abbreviated as “Material Clb”): Calibrate by dispensing some coffee into the machine’s weighing chamber, then discharge that material and weigh on a calibrated scale; enter that calibrated weight.
3. No Weight Calibration (abbreviated as “No Wt Clb”): calibrate via raw voltages

Note:

No Weight Calibration is a method of calibration used in the initial manufacturing of the machine, and as such we do not recommend use and will not be mentioned below.

Weight Calibration



On the weight calibration screen, you can calibrate the scale with a known, calibrated, mass.

Note:

For descriptions of the other functions found on this screen (Unit, Accuracy, etc...) refer to the [Weight Settings](#) section.

Buttons

- Zero Calibration (abbreviated as “**Zero Clb**”): sets the zero offset. This is a “tare” operation for the scale.
- Gain Calibration (“**Gain Clb**”): sets the gain value for the load cell.

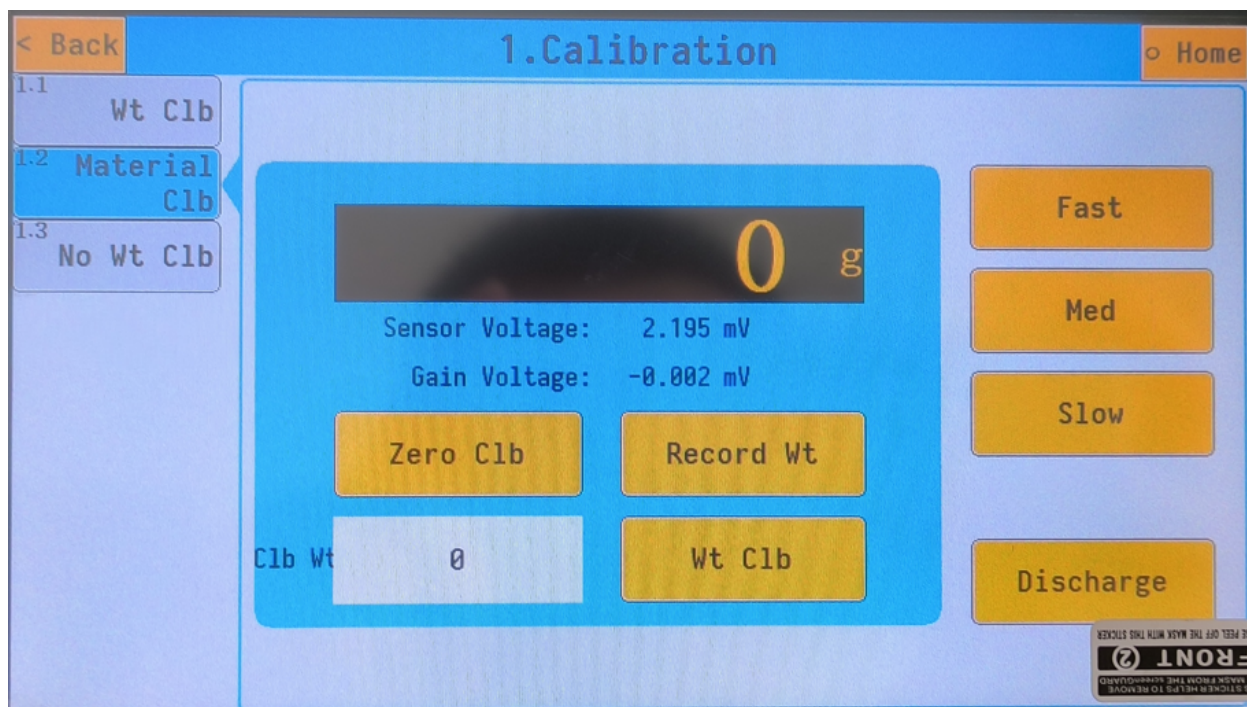
Instructions for performing a calibration

1. Ensure that there is no material or foreign matter in the weighing chamber and the discharge gate is in the closed position. Wait for “Sensor Voltage” to stabilize.
2. Press the “**Zero Clb**” button. Wait for the zero calibration to complete. You will get a zero calibration successful notification when completed.
3. Place a calibrated mass into the weighing chamber. Wait for “Sensor Voltage” to stabilize and press the “**Gain Clb**” button.
4. Enter the the mass value using the digit pad and press “**Ok**”

5. Remove the mass from the weighing chamber and press the **“Back/Home”** button. You may be prompted to enter your admin password to save changes.

Your Precision Fill Mini has now been calibrated using the weight calibration method.

Material Calibration

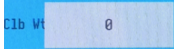


Buttons

- **Zero clb:** Zero Clb
- **Record Wt:** Record
- **Wt Clb:** Wt Clb
- **Fast:** Manually actuate Fast Feed
- **Med:** Manually actuate Med Feed
- **Slow:** Manually actuate Slow Feed
- **Discharge:** Toggles the open/close position of the discharge gate

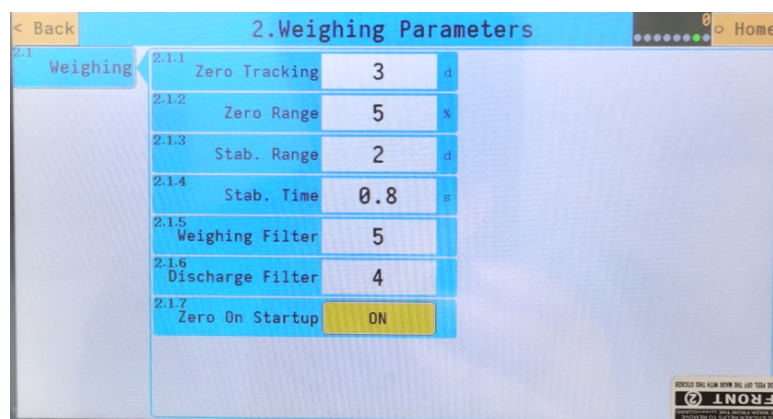
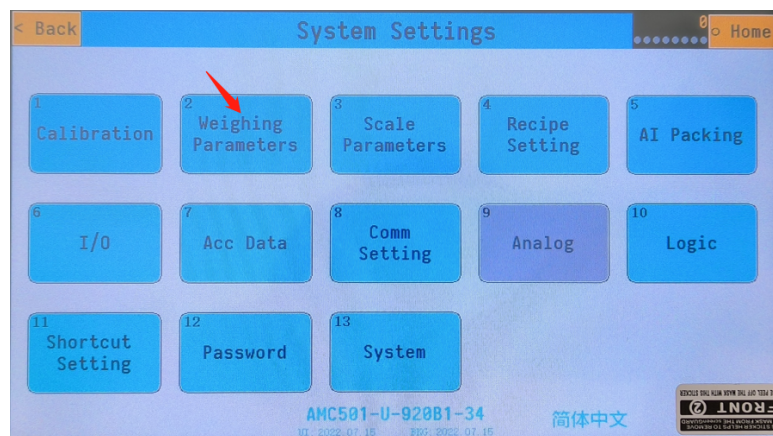
Instructions for performing a calibration

1. Ensure that there is no material or foreign matter in the weighing chamber and the discharge gate is in the closed position. Wait for “Sensor Voltage” to stabilize.
2. Press the **“Zero Clb”** button. Wait for the zero calibration to complete.
3. Press the **“Fast”**, **“Med”**, or **“Slow”** feed buttons to dispense some coffee into the weighing chamber. We recommend approximately 2,500 grams (2.5kg).

4. Press the **“Record Wt”** button. This captures necessary information to complete the calibration.
5. Dispense the measured coffee into a bag or container by pressing the **“Discharge”** button to toggle the discharge gate to the open position. Ensure you have all of the coffee that was recorded by the machine in the previous step.
6. Using a calibrated scale, measure the mass of the coffee collected in step 5. Note: this should exclude the mass of the bag or container used to collect the sample.
7. Press the **“Clb Wt”** input field () and enter the mass measured in step 6. Press the **“Wt Clb”** to calibrate the scale's gain.
8. Press the **“Back/Home”** button. You may be prompted to enter your admin password to save changes.

Your Precision Fill Mini has now been calibrated using the material calibration method.

Weighing Parameters Set

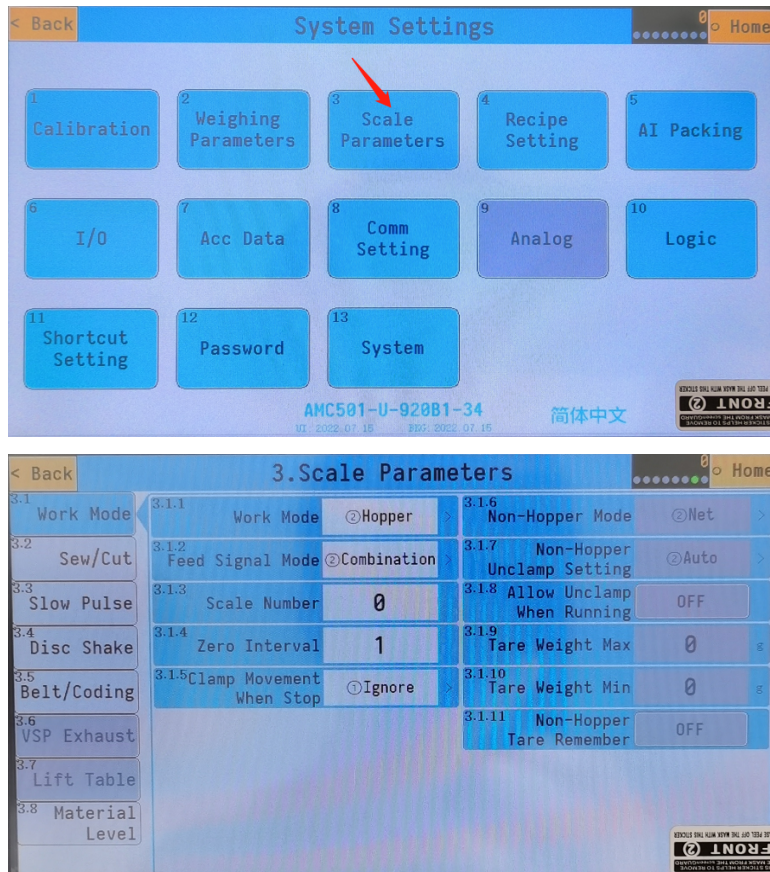


Text

- **Zero Tracking:** If the weight display is 0.5g, it's within the range of plus or minus amount of MDV, it will automatically become 0.
- **Zero Range:** Based on zero point, the zero clearing operation will not be successful if it exceeds this range. For example the max range is 1000g, you do 50%, if there is 600 grams in the gauging tank, you will not be able to use zero function.
- **Stab. Range:** In the stability time range, the weight change is considered stable within this range
- **Stab. Time:** A weight comparison is conducted within this time range. If the weight does not exceed the stability range, it is considered stable
- **Weighing Filter:** Weighing Signal Level (0 is no filter, 9 is highly filtered. Use the lowest value with adequate signal integrity. Default is 2)
- **Discharge Filter:** Discharge Signal Level (0 is no filter, 9 is highly filtered. Use the lowest value with adequate signal integrity. Default is 2)

- **Zero On Startup:** Toggle whether or not you want the machine to tare/zero on Startup

Scale Parameters Set



Title

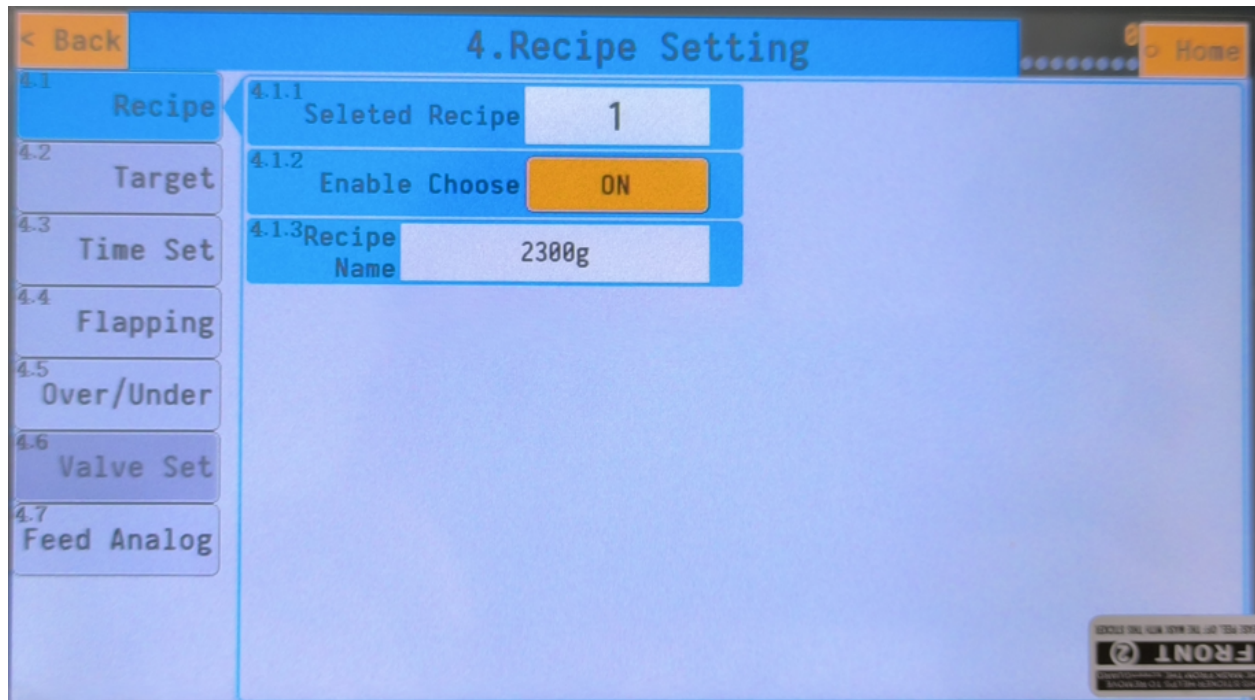
- **Scale Parameters:** Scale Parameters

Work Mode

- **Work Mode:** Toggle between different working modes
- **Feed Signal Mode:** Toggle between different feeding modes
- **Scale Number:** Scale number, 0~7
- **Zero Interval:** conduct a zero operation before next feeding after a certain number of bags of packing
- **Clamp Movement When Stop:** clamp mechanism movement after stop
- **Non-Hopper Mode:** Toggle for packing mode selection for no hopper working mode
- **3.1.6~3.1.11 are not used**

3.2~3.8 are not used in this machine.

Recipe Page: Recipe



Titles

- **Recipe:** Allows you to select and rename recipes
- **Target:** Main recipe settings for Target, Fast Feed, Med Feed, and Slow Feed
- **Time Set:** Organized Delay Settings page. Changing these values is generally not advisable.
- **Flapping:** not used
- **Over/Under:** Over/Under Settings. Changing these values is generally not advisable.
- **Valve Set:** not used.

Text

- **Selected Recip:** currently selected recipe
- **Enable Choose:** enable to choose recipe on the Home page.
- **Recipe Name:** current recipe name

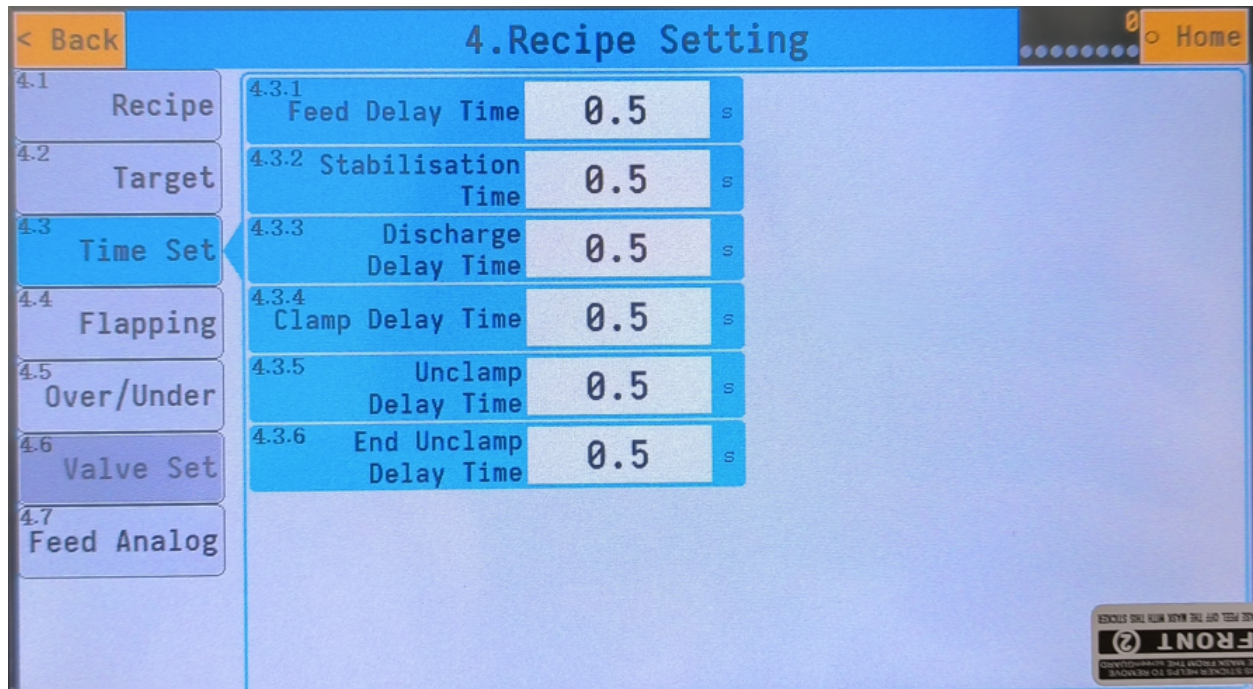
Recipe Page: Target

4. Recipe Setting	
4.2.1	Target 2300 g
4.2.2	Fast Feed 1100 g
4.2.3	Med Feed 70 g
4.2.4	Slow Feed 9 g
4.2.5	Discharge Zero Area 30 g
4.2.6	Scale Cmb Times 1
4.2.7	Fast Delay Time 0.1 s
4.2.8	Med Delay Time 0.5 s
4.2.9	Slow Delay Time 1.4 s
4.2.10	Feed Speed ③ Three Speed >

Text

1. **Target:** Target output weight (see Recipes: [Modifying a Recipe](#))
2. **Fast Feed:** Fast Feed value (see Recipes: [Modifying a Recipe](#))
3. **Med Feed:** Med Feed value (see Recipes: [Modifying a Recipe](#))
4. **Slow Feed:** Slow Feed value (see Recipes: [Modifying a Recipe](#))
5. **Discharge Zero Area:** Discharge Delay
6. **Scale Cmb Times:** Not Used
7. **Fast/Med/Slow Delay Time:** When each feed speed is over, it will stay in that feed mode for a certain amount of time. For example, if Fast Delay Time is 4s, the fast feed gate will still open for 4s, after it hits fast feed target weight. It's essentially a delay time.
8. **Feed Speed:** Feed Mode toggle between different feeding grades.

Recipe Page: Time Set



Text

- **Feed Delay Time:** Delay time before starting feeding
- **Stabilization Time:** Stabilization Time, waiting time after feeding
- **Discharge Delay Time:** Discharge Delay Time, waiting time after feeding is done before close the discharge door
- **Clamp Delay Time:** Clamp Delay Time, waiting time after getting clamp signal and assume the clamp action is done during this delay time
- **Unclamp Delay Time:** Unclamp Delay Time, waiting time before automatically unclamp
- **End Unclamp Delay Time:** End Unclamp Delay, waiting time after unclamp is done

Recipe Page: Over/Under

4. Recipe Setting	
4.1 Recipe	4.5.1 Over/Under Func <input type="button" value="ON"/>
4.2 Target	4.5.2 Check Delay Time <input type="text" value="0.5"/> s
4.3 Time Set	4.5.3 Over Tolerance <input type="text" value="5"/> %
4.4 Flapping	4.5.4 Under Tolerance <input type="text" value="5"/> %
4.5 Over/Under	4.5.5 Over/Under Pause <input type="button" value="ON"/>
4.6 Valve Set	4.5.6 Over/Under Interval <input type="text" value="0"/>
4.7 Feed Analog	

Text

- **Over/Under Func:** Over/under target value checking every time after feeding done, toggle between on and off
- **Check Delay Time:** Check Delay Time, waiting time after feeding done before check over/under
- **Over Tolerance:** Over tolerance, value that system uses to judge it is over the target
- **Under Tolerance:** Under tolerance, value that system uses to judge it is under the target
- **Over/Under Pause:** Over/Under Pause, stop or not when over/under tolerance happens, toggle between on and off
- **Over/Under Interval:** Interval of doing the over/under check, it checks every time when set as "0"

Acc Data

7. Acc Data

Acc. Nums: 0

Acc. Wt : 0 g

Rec. Acc.

Rec.	Acc. Nums	Acc. Weight
1	33	72581
2	30	31379
3	26	12543
4	98	10058
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0

Batch Set 0

Completed 0

Manual Disc Acc ①No

Clr All Acc.

Clr Acc.

Clr Rec. Acc.

Clr Sel. Rec

No disk

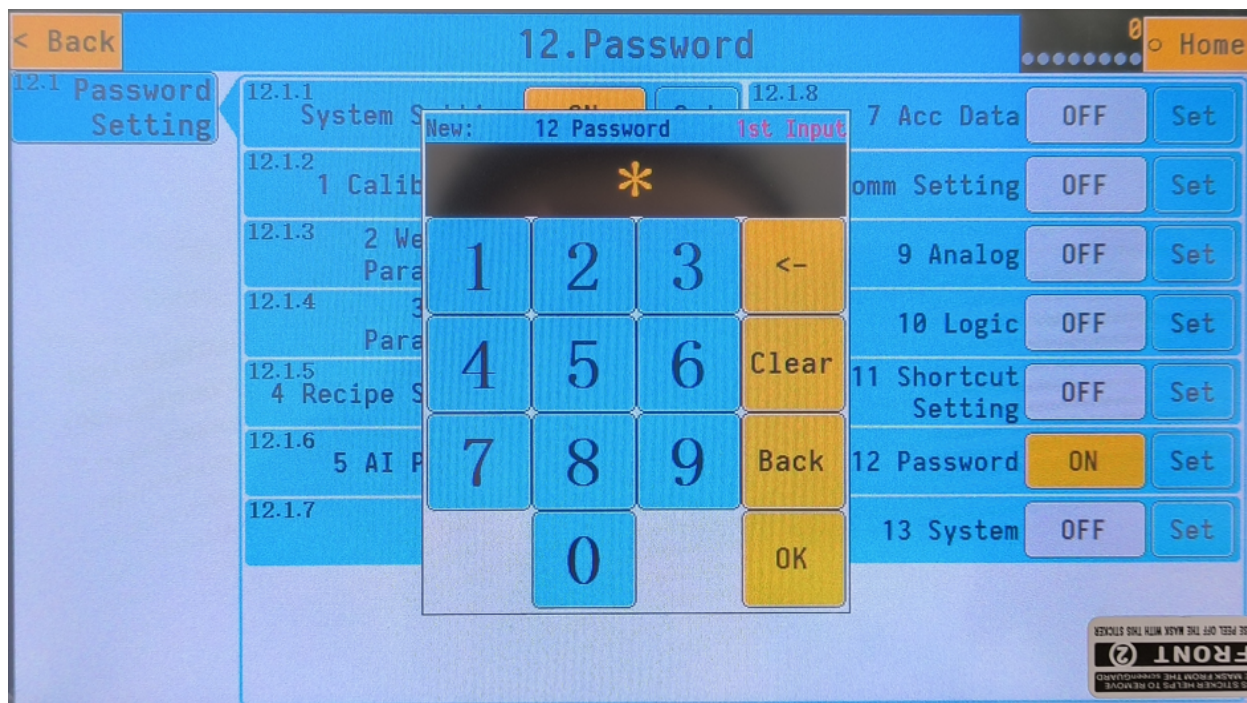
Title:

- **Bat&Acc.:** Batch Setting
- **History Data:** view the history packing data of the machine.

Text:

[See "How to use set-bat functions"](#)

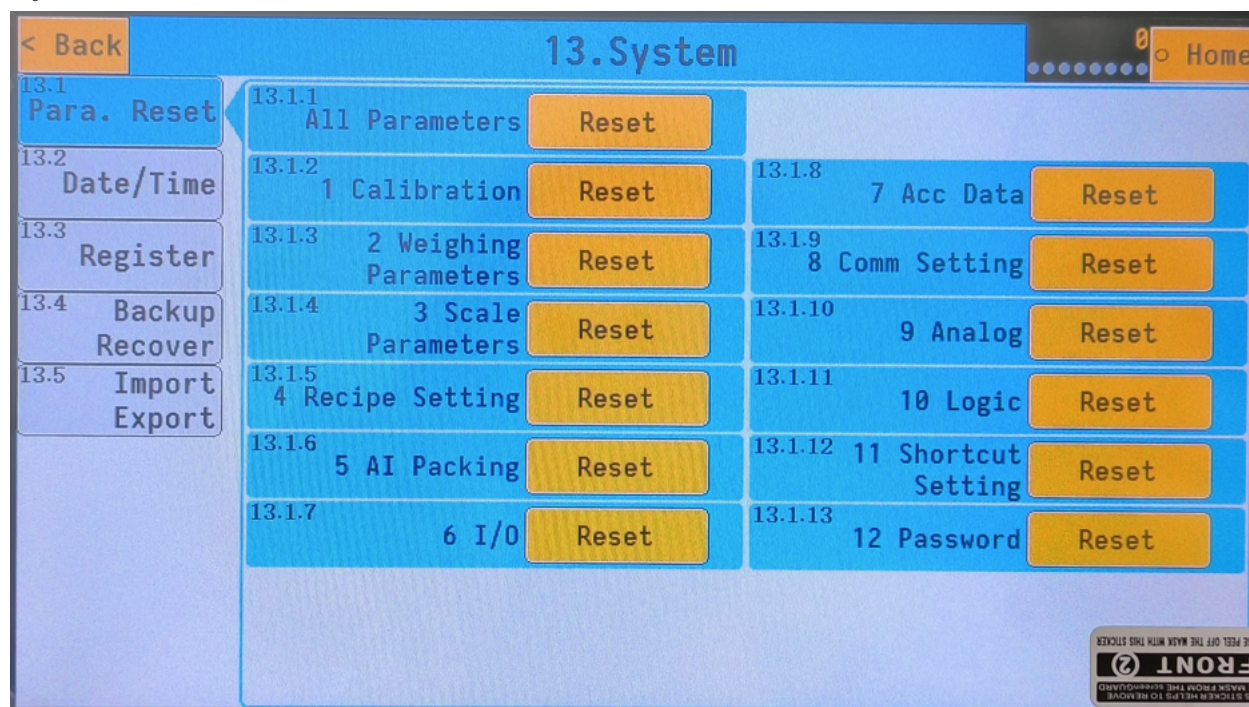
Password



Toggle between on and off buttons to choose if you enable the password for a certain setting.

See [Setting the Password](#) for more information

System: Parameter Reset



Titles

- **Para. Reset:** Set parameters back to factory settings
- **Date/Time:** Date/Time settings
- **Register:** Registration entry and information
- **Backup/Recovery:** Backup/Recovery options
- **Import/Export:** Import/Export recipe data

Buttons:

- **All Parameters:** Factory Reset all parameters
- **Calibration:** Reset Weight Calibration
- **Weighing Parameters:** Reset Recipe Parameters
- **Scale Parameters:** Reset Pack Parameters
- **Recipe Setting:** Reset Module Parameters
- **AI Packing:** Reset AI Packing Parameters
- **I/O:** Reset I/O Settings
- **Acc. Data:** Reset Acc data
- **Comm Setting:** Reset communication parameters
- **Analog:** Reset Analog parameters
- **Logic:** Reset Logic Settings
- **Shortcut Setting:** Reset shortcut interface configuration
- **Password:** Reset password

Troubleshooting

Problem	Possible Cause	Solution
Machine Will Not Power On (Power Switch does not glow amber)	Machine is not plugged in	Check both ends of the power cord to ensure they are properly seated.
	Electrical supply is not correct	Ensure voltage, polarity and grounding at wall outlet are correct
	On-Board Circuit Breaker Tripped	Ensure the NXB-63 Circuit Breaker located inside the left machine access panel is flipped towards the front of the machine, indicating “red” rather than “blue.” Note: Do not reset the circuit breaker more than once. Recurring tripped circuit breakers indicate a larger problem.
Power Button glows Amber, screen remains black	Screen needs time to start	Wait at least 30 seconds to see if the screen boots
	Capacitors need to be discharged	Unplug the machine. Press the power button so it is detented in, then wait 60 seconds. Press the power button again so it is in its outward/off position and plug the machine back in. Try powering machine on again
Cycle does not initiate when “start running” is pressed	No coffee in machine hopper	Ensure there is product in the hopper
	No air pressure to machine	Ensure your air compressor is running, no air valves are shut off, and there is pressurized air service to the machine. Pressure gauge should read 0.3MPa

Coffee weight is not hitting the target	Fine Feed Setting is wrong	See “Adjusting a Recipe”
Coffee weight is inconsistent	Med Feed Setting is wrong	See “Adjusting a Recipe”