

S O V D A

User Manual

Precision Fill 2.0

Rev 0.1.1. - November 17th, 2022

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Introduction

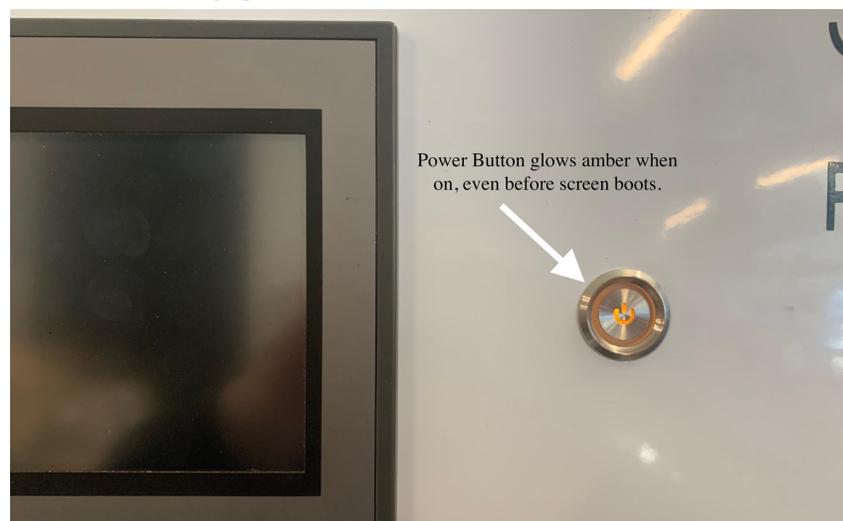
Thank you for purchasing a Sovda Precision Fill! The Sovda Precision Fill drastically reduces man hours and waste associated with coffee packaging. With the unique Fast Feed function, wholesale bagging can be achieved at a speed and efficiency second to none. Precise load cell computations and over/under 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. Push the center power button on the front of the machine to turn the machine on. The screen may take some time to load, but the power switch will immediately glow amber:



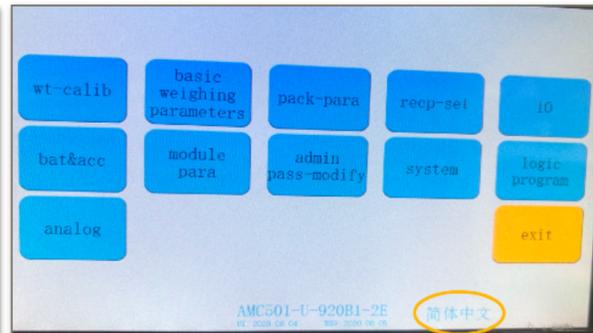
3. To power off the machine, simply press the power button again.

Changing the Language

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

On the home page Bottom left button > “0”, yellow button Bottom right > English or Chinese.

On home page Bottom left button > “0”, yellow button Bottom right > English or Chinese.

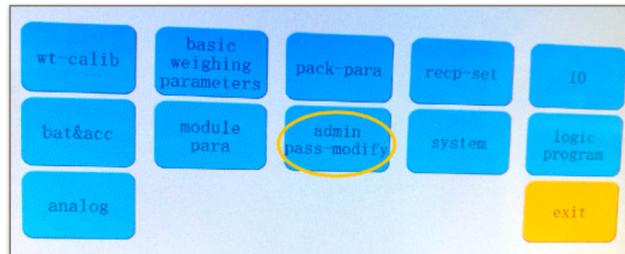


Changing the password

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:

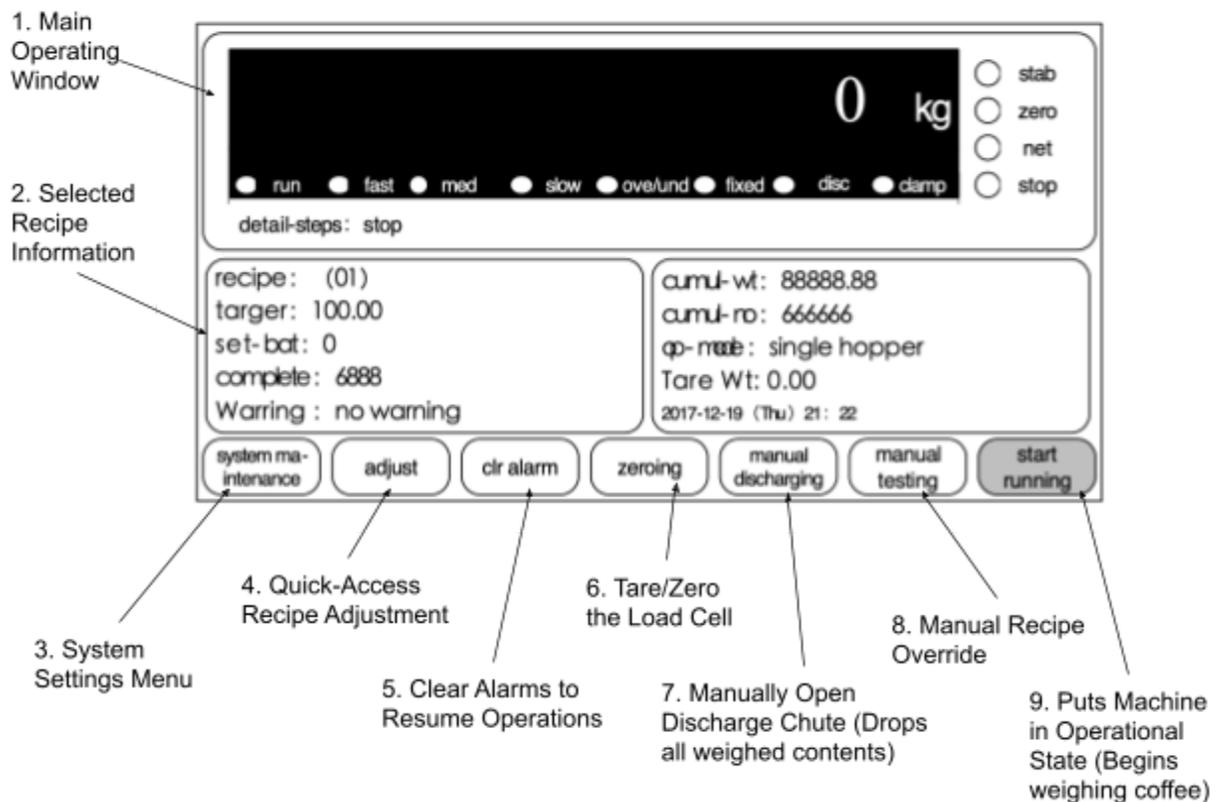
(home page menu) > system maintenance > admin pass modify > type the new password 1st time > OK > type the new password 2nd time > OK

*(home page page menu)>
system maintenance > admin
pass modify> type the new
password 1st time > OK >
type the new password 2nd
time > OK*



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.



【recipe】The current Recipe number and Recipe name are displayed (02)1kg

【target】The recipe targets output weight.

【set-bat】The desired amount of bag that constitutes a batch. For instance, you set a batch at 10 bags. Once 10 bags are filled, 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.

【cumul-wt】Total completed weight.

【cumulative-no】Total number of bags completed.

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

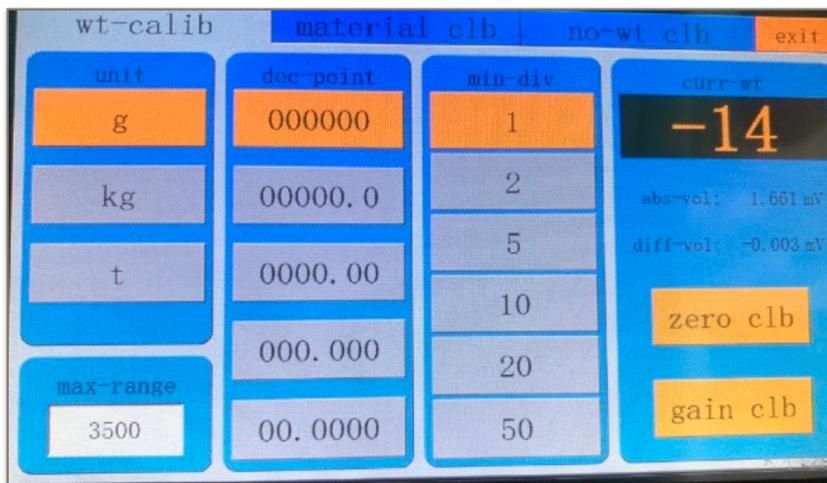
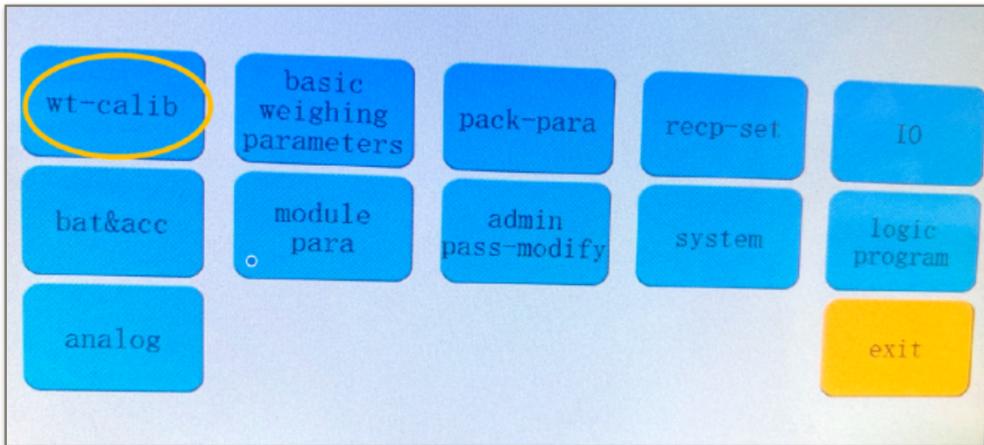
 click on manual discharging to discharge all coffee in the hopper.

clr alarm

When you have completed your desired amount of bags that are set in "set-bat", 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 page menu) > system maintenance > wt-calib > choose what you prefer for unit, dec point and min-div > click exit. **[Image 7]**



- **unit:** Type of unit will be shown
- **ec-point:** The amount of decimal
- **Min-div:** The interval in which it will show the weight. 0.002 means it will show every 2g.

Recipes

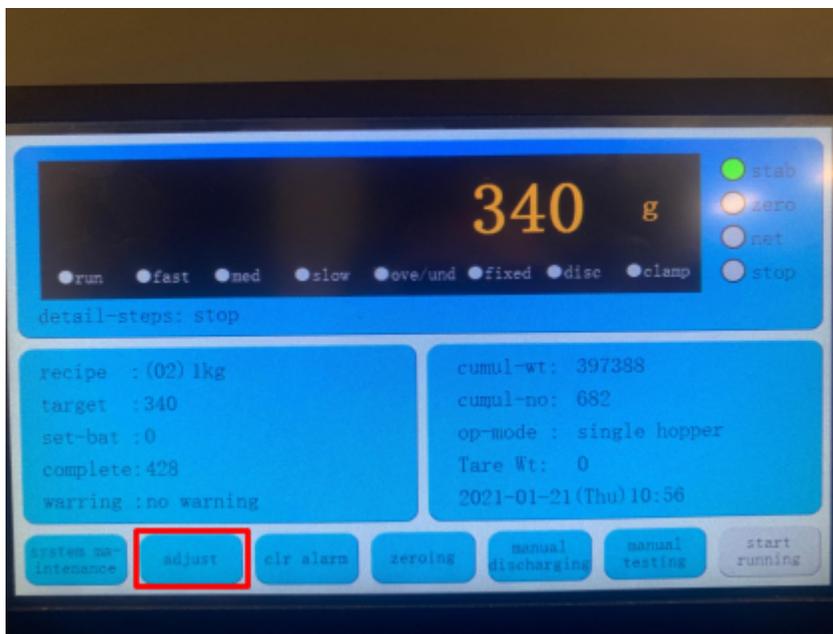
The Sovda Precision Fill comes pre-set with five common recipes (recipe 1 to 5).
. Here are the recipes pre-entered:

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

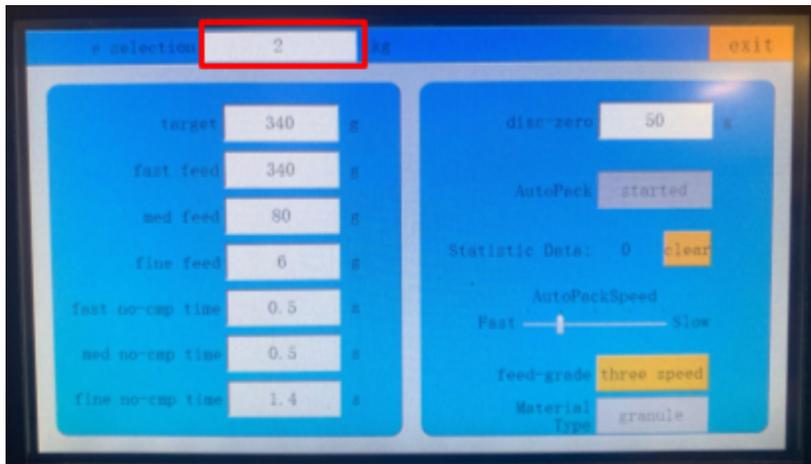
Note: For some smaller bags where Med feed is not used, the Med/Fast Feed chamber will retain approximately 500g. For bags over 125g use of Med Feed is recommended and will reduce retention.

Selecting a Recipe

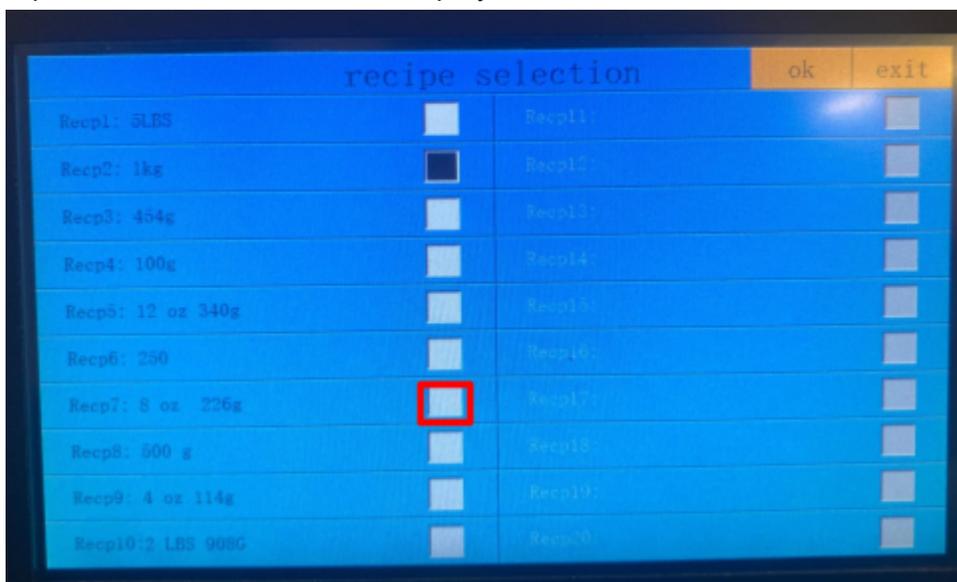
1. On the Home Screen, tap “adjust”:



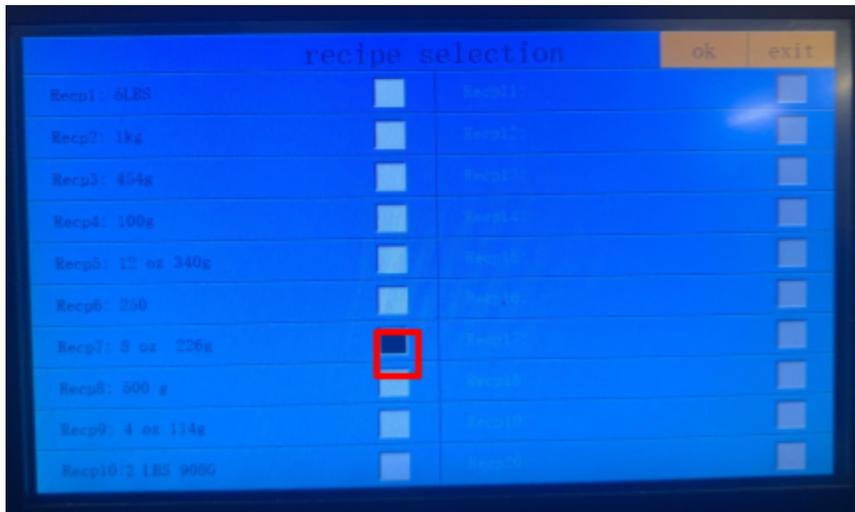
2. Tap the white text box displaying the current recipe name:



3. Tap the check box next to the recipe you would like to use:



4. Verify the correct recipe box is blacked out:



5. Hit exit. Your new recipe will be displayed on the Home Screen.

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.

(home page page menu) > adjust > target (click on number on top screen) > choose recipe in list > Exit



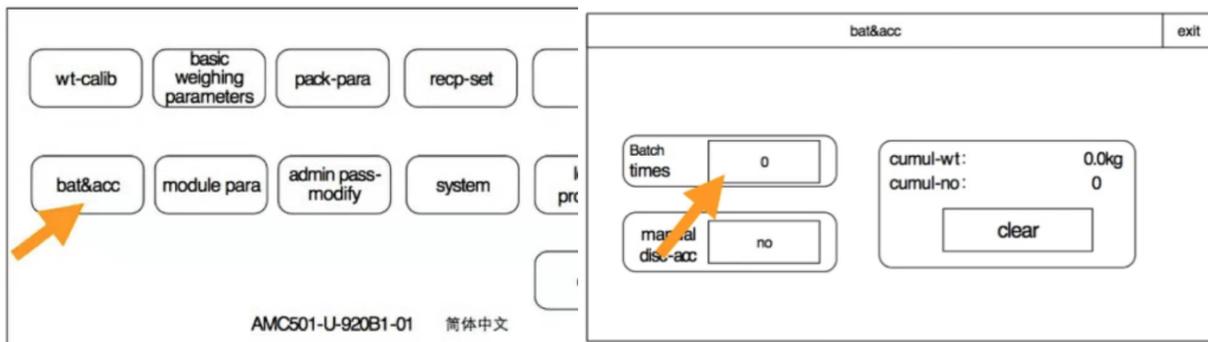
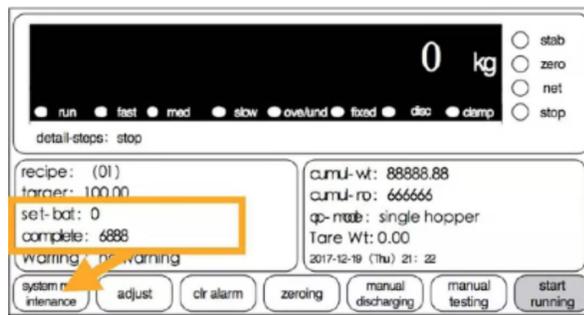
How to use set-bat function

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 maintenance > bat&acc >batch times (i.e. number of bags)
> enter your number of bag > exit



How to tare the amount of bag filled

On the home page click on the right box in orange. A pop up window asks you "Clear cumulative weight and t" click OK.



Changing Outlet Heads

Sovda offers a variety of different outlet heads designed to optimize your bag filling experience for your specific packaging. Please contact your TBA to inquire about our different options, including our customization service for unique packaging requirements. 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:

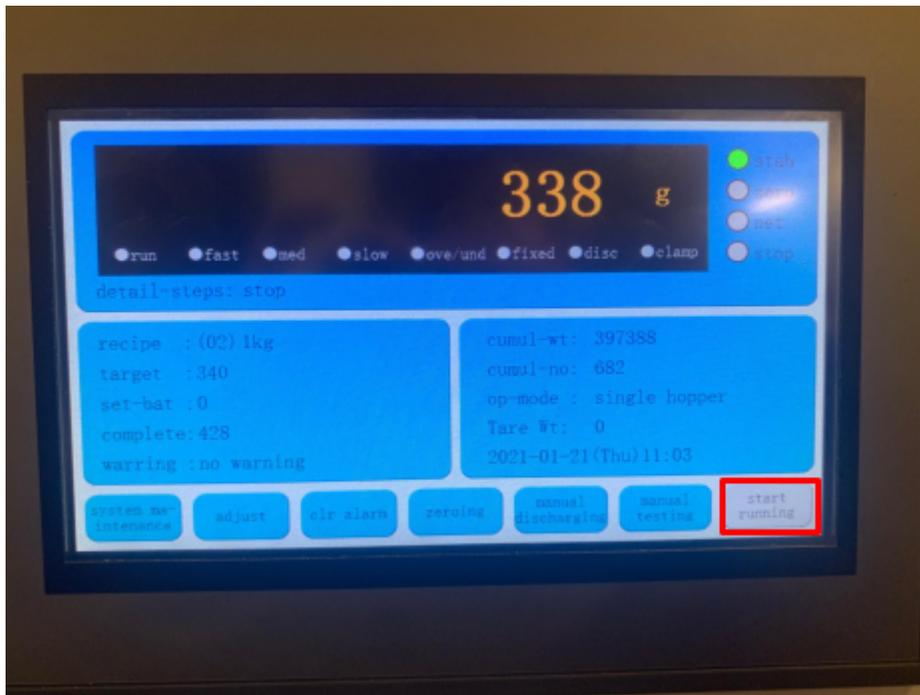


A note about our 3D printed filling heads

Our 3D printed filling heads can 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

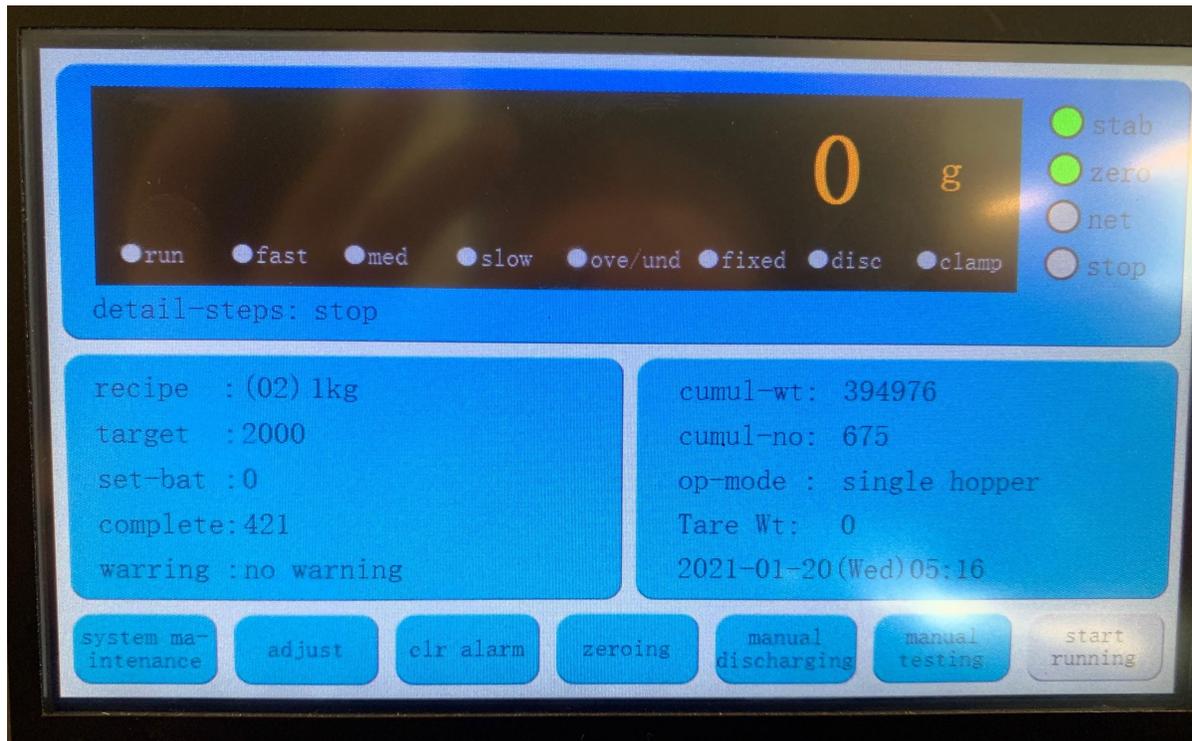
1. Ensure your air compressor is running, air to the machine is on, and the machine is powered on. Make sure the air pressure is at 0.3mp.
2. Ensure the foot pedal is plugged in and oriented in a comfortable operating position.
3. On the Home Screen, tap “start running”



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

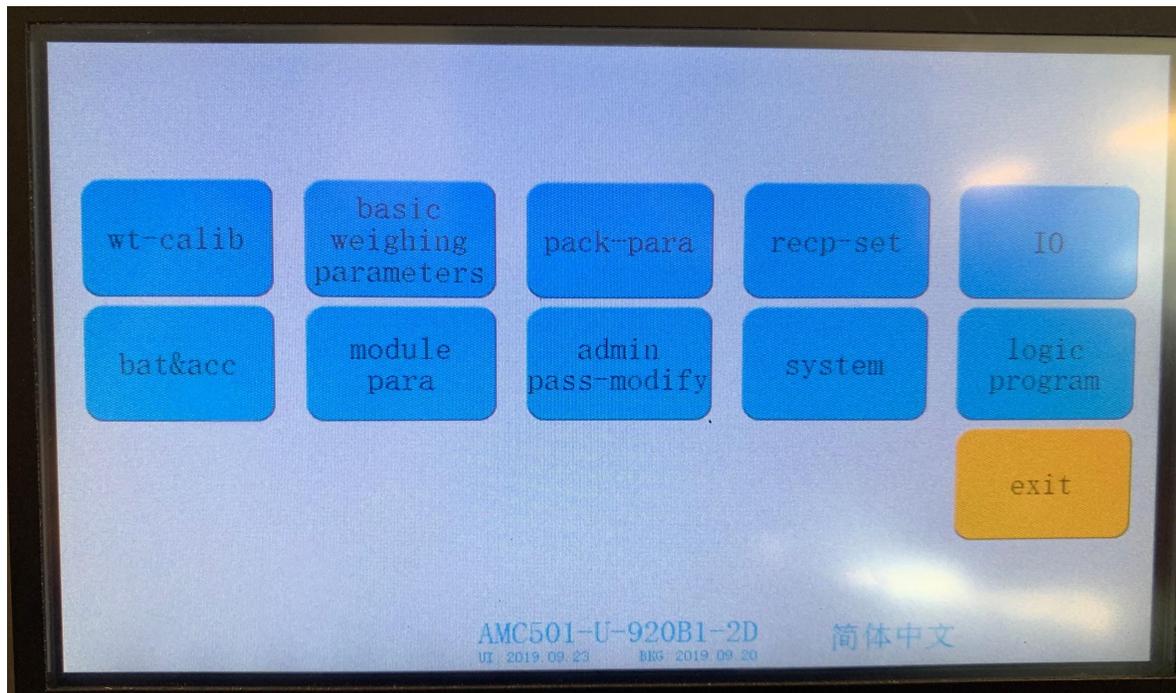
- **system ma-intenance:** Opens the System Settings page
- **adjust:** Opens the Recipe settings for quick adjustment
- **clr alarm:** Clears all alarms, allowing machine to continue operation
- **zeroing:** Zero/Tare the load cell
- **manual discharging:** Manually drops all weighed coffee.
- **manual testing:** Allows for a manual override of machine automation for specific testing and use cases.
- **start running:** Puts the machine in an operational state. Initial weighing cycle will commence.
- **stop running:** Takes machine out of operational state. The weight cycle will stop.

Text

- **detail-steps:** Indicates current machine operation stage
- **recipe:** Displays selected recipe name
- **set-bat:** Counts number of batches completed in your current group
- **warring:** Indicates whether there is an equipment operations warning

- **complete:**
- **cumul-wt:** Total weight filled
- **cumul-no:** Total batches processed

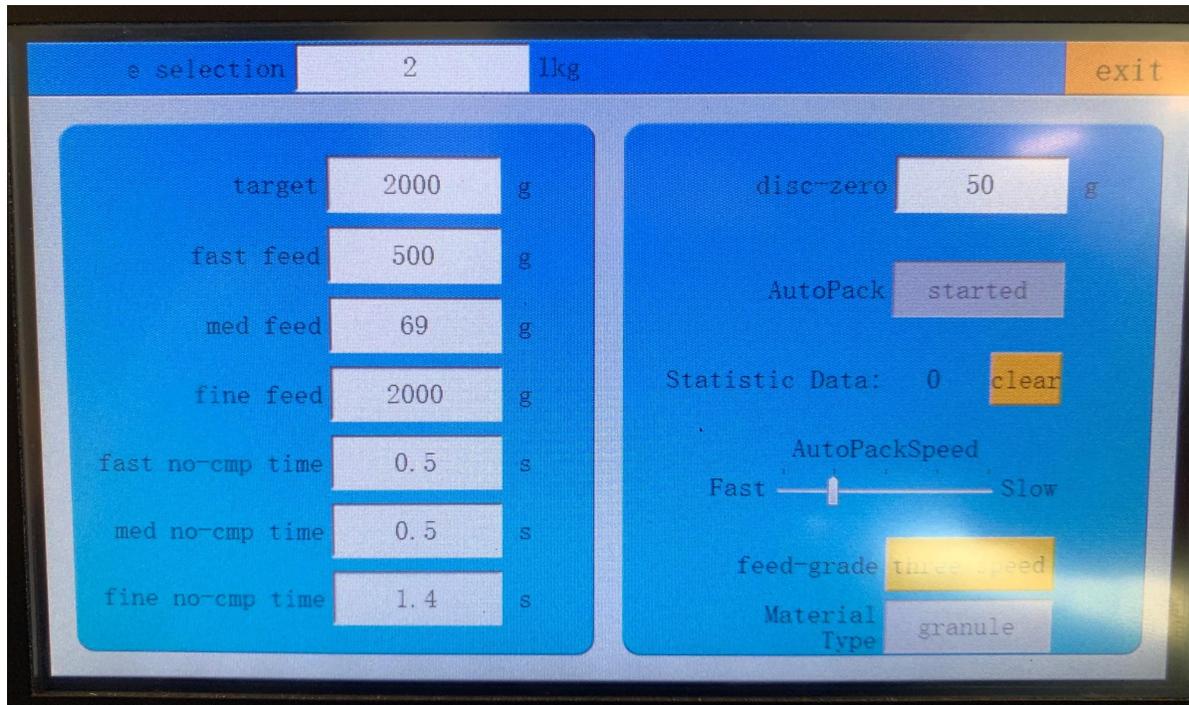
System Settings



Buttons

- **wt-calib:** Opens the Weight Calibration Settings screen
- **basic weighing parameters:** Opens the Weighing Parameters screen
- **pack-para:** Opens the Scale Parameters screen
- **recp-set:** Opens the Recipe Settings screen
- **IO:** Opens the Input/Output logic settings screen
- **bat&acc:** Opens the Batch Settings screen
- **module para:** Opens the PLC Settings screen
- **admin pass-modify:** Opens the Password Settings screen
- **system:** Opens the System Settings screen
- **logic program:** Opens the Program Logic settings screen
- **exit:** Return to home screen

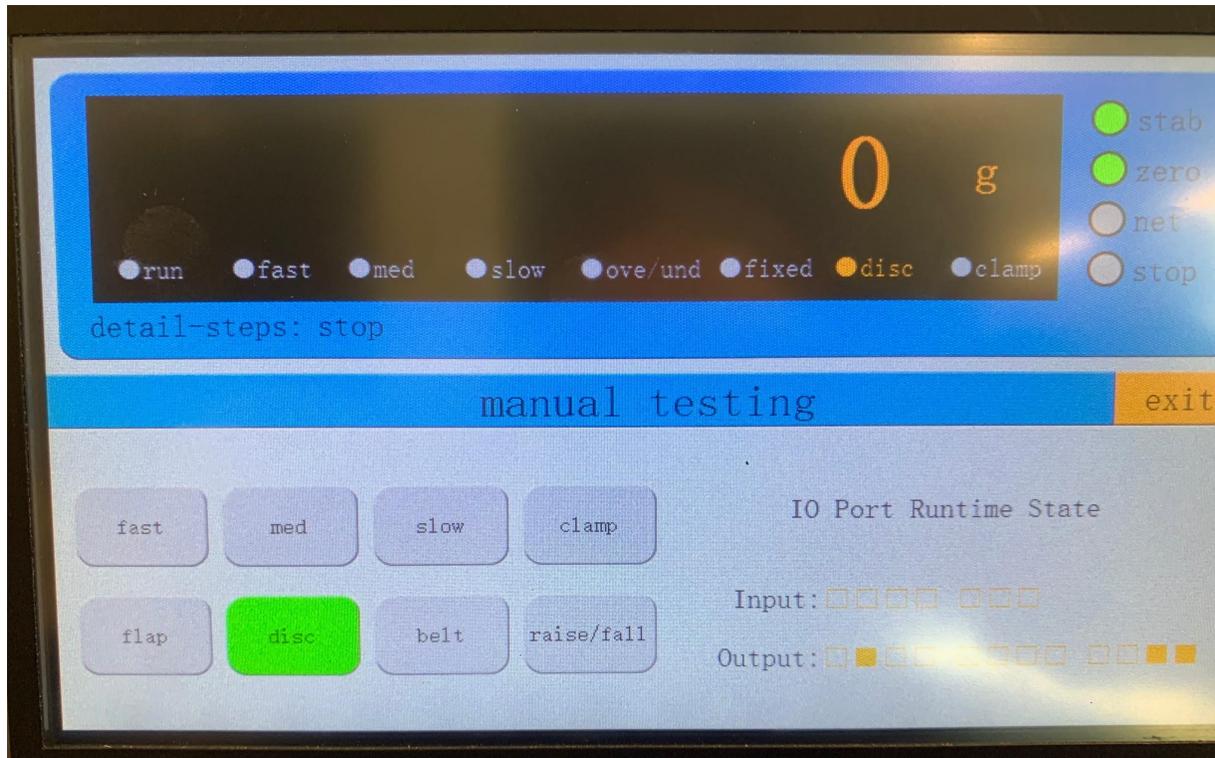
Quick Adjust



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](#))
- **fine feed:** Slow Feed value (see Recipes: [Modifying a Recipe](#))
- **fast/med/fine no-cmp time:** When each feed speed is over, it will stay in that feed mode for a certain amount of time. For example, if fast no-cmp 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.
- **disc-zero:** When there are beans \leq the amount of disc-zero, it will trigger delay for unloading. For example disc-zero is 50g, when unloading is almost finished, but there is still 30g in the gauging tank, it will delay the unloading, letting all the beans to unload.
- **feed-grade:** Toggle between two and three feeds.

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

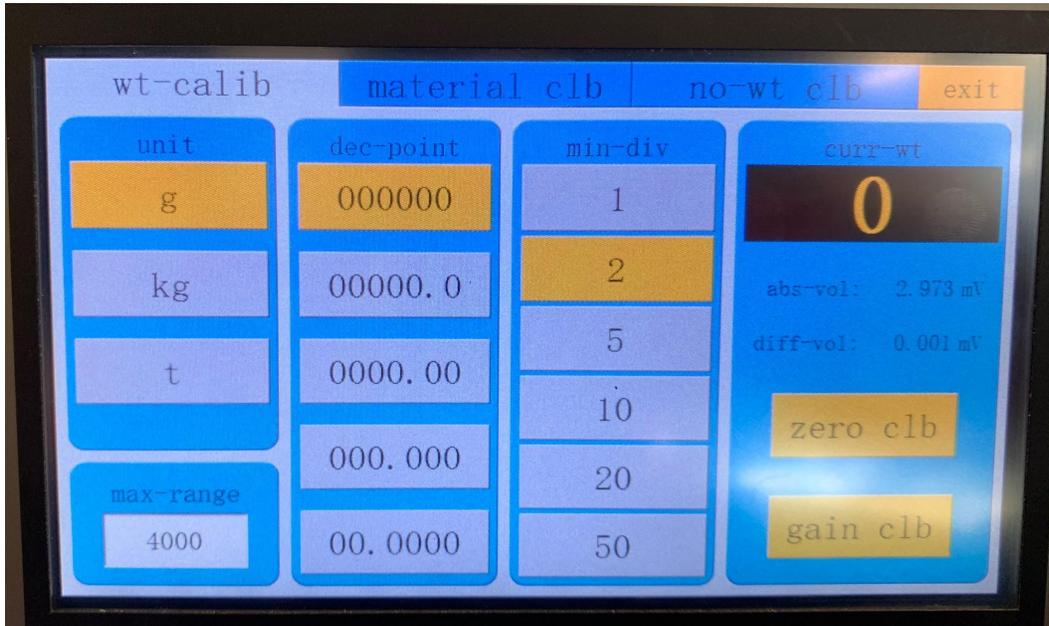
From the [Systems Settings](#) page, press the “**wt-calib**” button to access the calibrations menus.

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

1. Weight Calibration (abbreviated as “wt-calib”): 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, dec-point, etc...) refer to the [Weight Settings](#) section.

Buttons

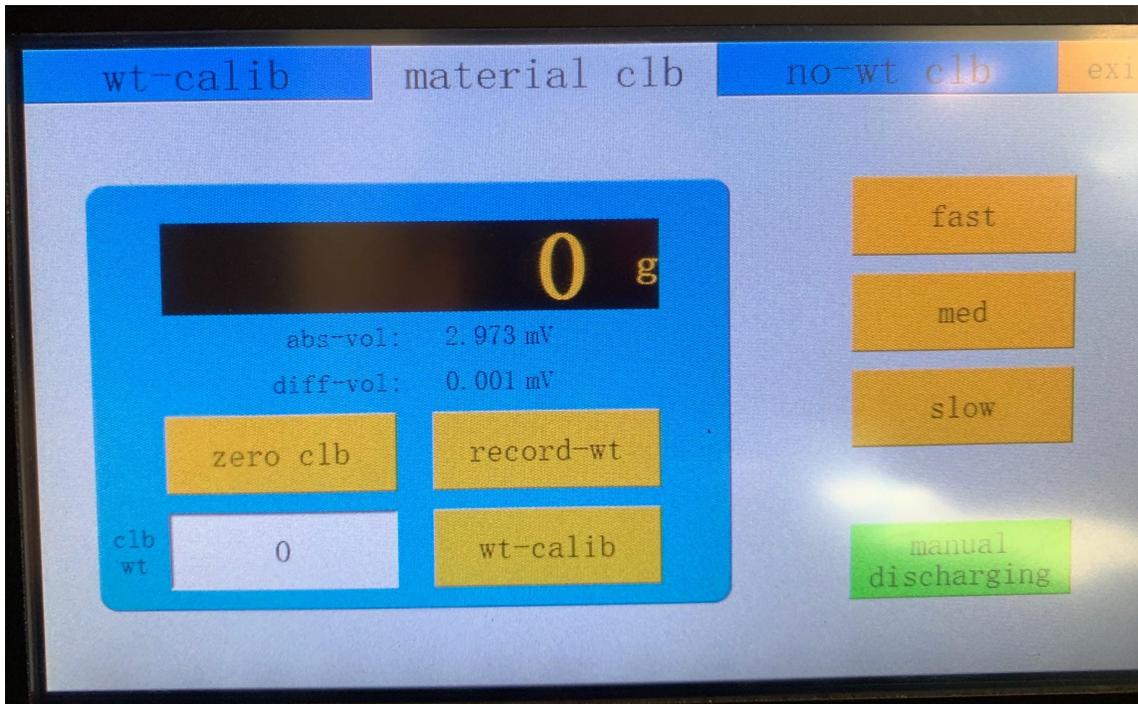
- Zero Calibration (abbreviated as “**zero clb**”): sets the zero offset. This is a “tare” operation for the scale.
- Gain Calibration (“**gain clb**”): sets the gain value for the load cell.

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 “abs-vol” to stabilize.
2. Press the “**zero clb**” button. Wait for the zero calibration to complete.
3. Place a calibrated mass into the weighing chamber. Wait for “abs-vol” 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 “**exit**” button on the top right of the HMI. You may be prompted to enter your admin password to save changes.

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

Material Calibration

**Buttons**

- **zero clb:** Zero Clb
- **record-wt:** Record
- **wt-calib:** Wt Clb
- **fast:** Manually actuate Fast Feed
- **med:** Manually actuate Med Feed
- **slow:** Manually actuate Slow Feed
- **manual discharging:** Toggles the open/close position of the discharge gate

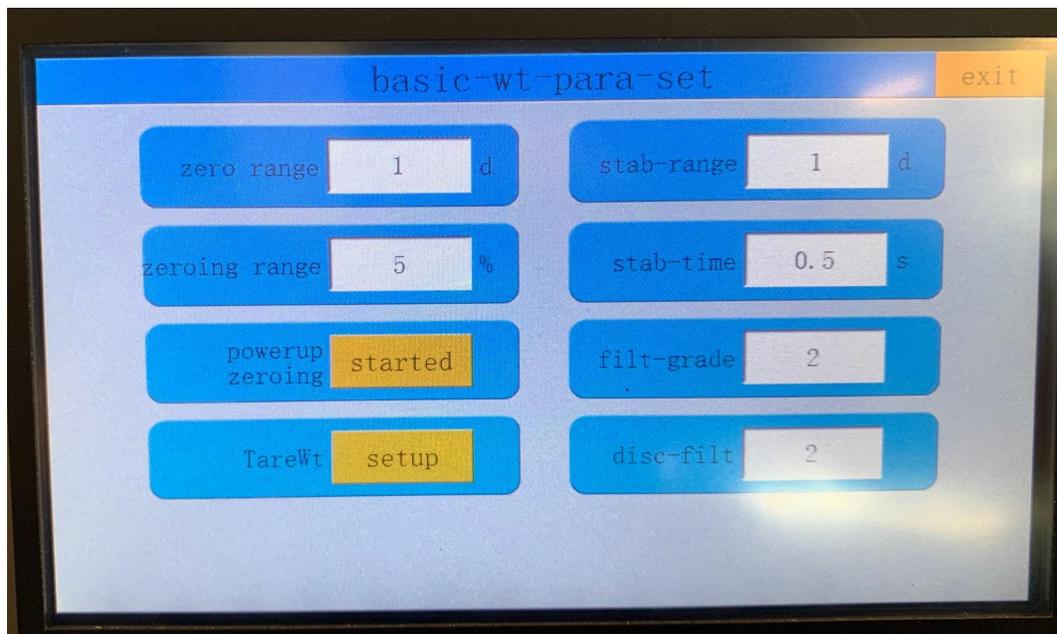
Instructions for performing a calibration

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 “abs-vol” 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 “**manual discharging**” 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.

- 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.
- Press the “**clb wt**” input field () and enter the mass measured in step 6. Press the “**wt-calib**” to calibrate the scale’s gain.
- Press the “**exit**” button on the top right of the HMI. You may be prompted to enter your admin password to save changes.

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

Basic Weight Parameters Set

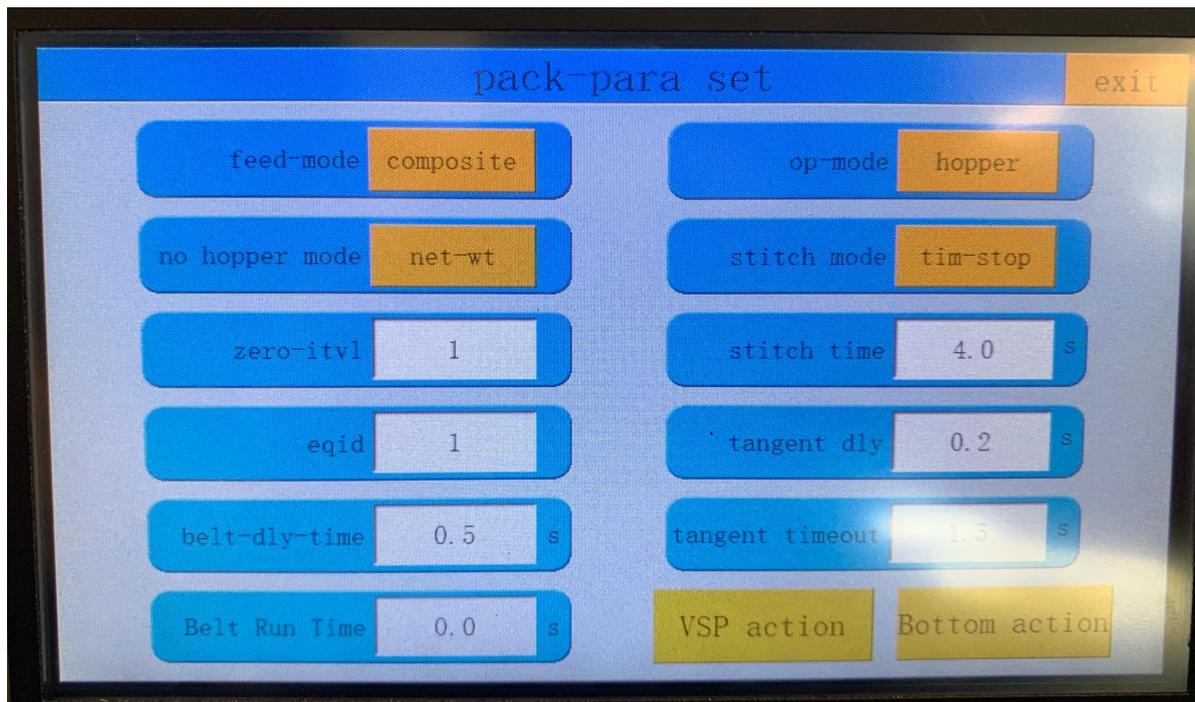


Text

- **zero range:** If the weight display is 0.5g, it's within the range of plus or minus amount of MDV, it will automatically become 0.
- **zeroing 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.
- **powerup zeroing:** Toggle whether or not you want the machine to tare/zero on Startup
- **TareWt:** Tare Weight setup
- **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
- **filt-grade:** Weighing Signal Level (0 is no filter, 9 is highly filtered. Use the lowest value with adequate signal integrity. Default is 2)
- **disc-filt:** Discharge Signal Level (0 is no filter, 9 is highly filtered. Use the lowest value with adequate signal integrity. Default is 2)

Pack Parameters Set



Title

- **pack-para set:** Scale Parameters

Buttons

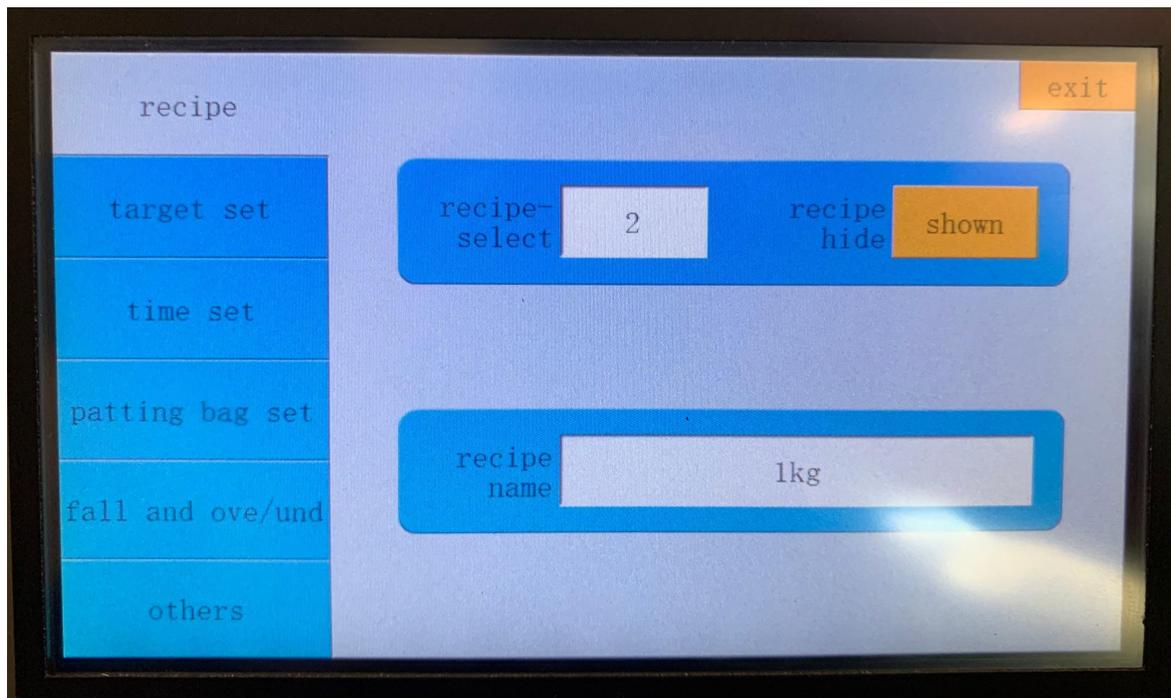
- **VSP Action:** VSP
- **Bottom Action:** Bottom Filling

Text

- **feed-mode:** Toggle between 2 and 3 Feed Modes
- **no hopper mode:** Toggle for Non-Hopper Mode
- **zero-itvl:** Zero Interval
- **eqid:** Number of load cells (leave at 1)

- **belt-dly-time:** Not Used
- **Belt Run Time:** Not Used
- **op-mode:** Operation Mode Toggle
- **stitch mode:** Not Used
- **stitch time:** Not Used
- **tangent dly:** Tangent Delay Time
- **tangent timeout:** Tangent Timeout

Recipe Page: recipe



Titles

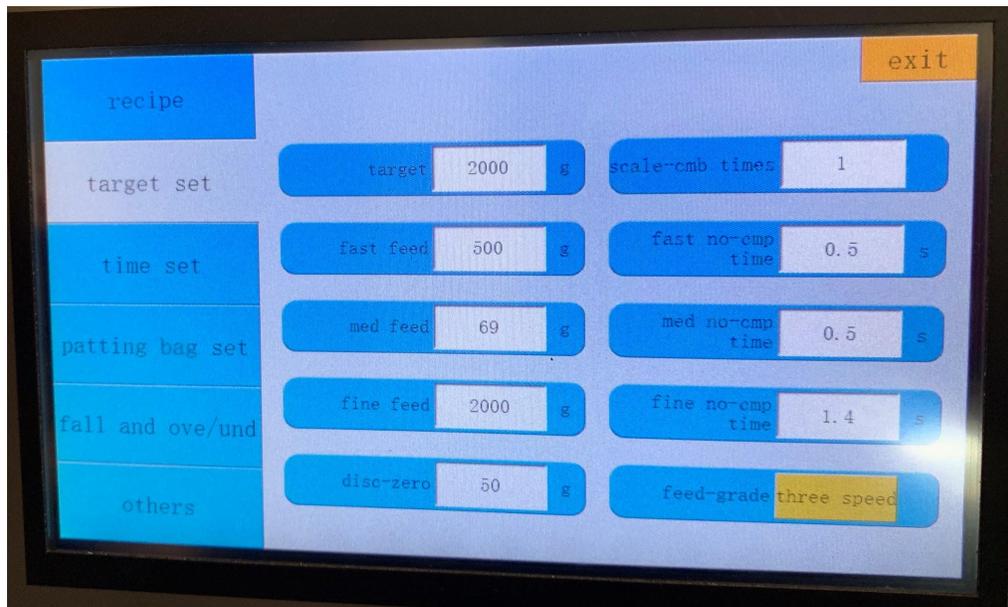
- **recipe:** Allows you to select and rename recipes
- **target set:** Main recipe settings for Target, Fast Feed, Med Feed, and Slow Feed
- **time set:** Organized Delay Settings page. Changing these values is generally not advisable.
- **patting bag set:** Not Used
- **fall and ove/und:** Over/Under Settings. Changing these values is generally not advisable.
- **others:** Factory Settings. Changing these values is generally not advisable.

Text

- **recipe-select:** Selected Recipe

- **recipe hide:** Hide Recipe
- **recipe name:** Recipe Name

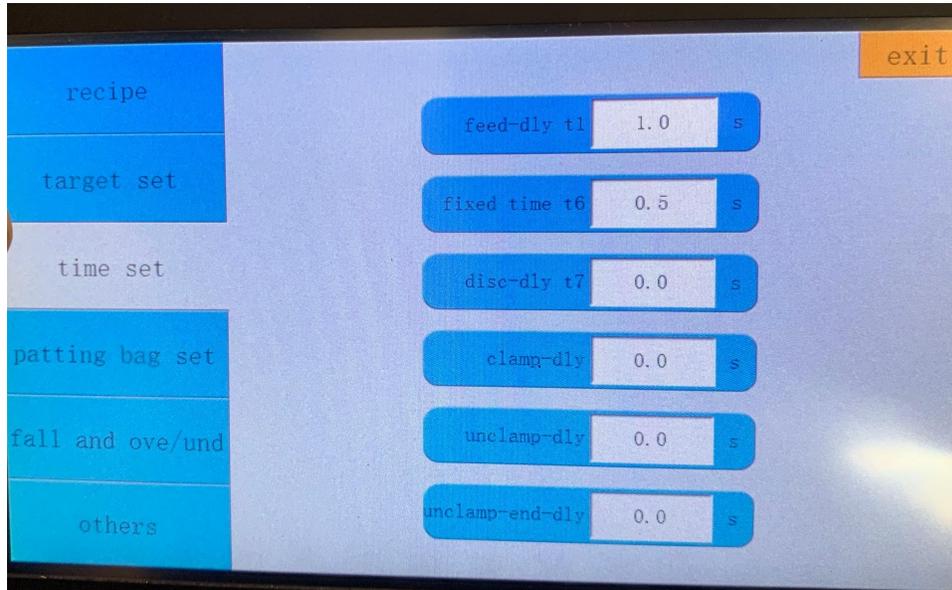
Recipe Page: Target Set



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. **fine feed:** Slow Feed value (see Recipes: [Modifying a Recipe](#))
5. **disc-zero:** Discharge Delay
6. **scale-cmb times:** Not Used
7. **Fast/med/fine no-cmp time:** When each feed speed is over, it will stay in that feed mode for a certain amount of time. For example, if fast no-cmp 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-grade:** Feed Mode toggle between 2 and 3 feeds.

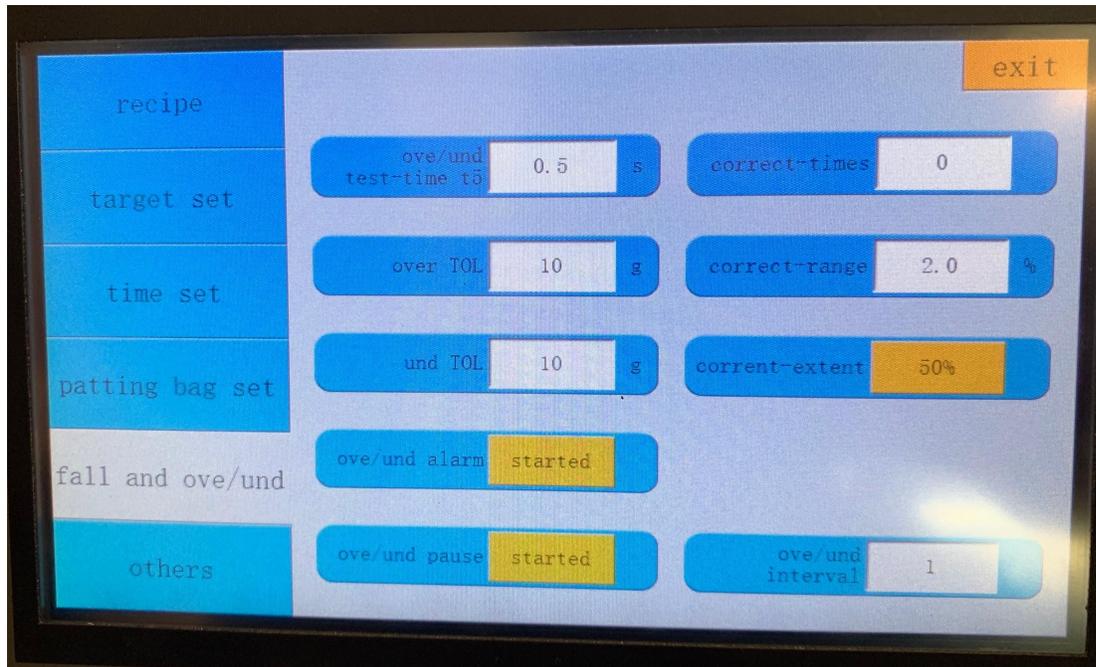
Recipe Page: Time Set



Text

- **feed-dly t1:** Loading Delay time
- **fixed time t6:** Stabilization Time
- **disc-dly t7:** Discharge Delay Time
- **clamp-dly:** Clamp Delay Time
- **unclamp-dly:** Unclamp Delay Time
- **unclamp-end-dly:** End Unclamp Delay

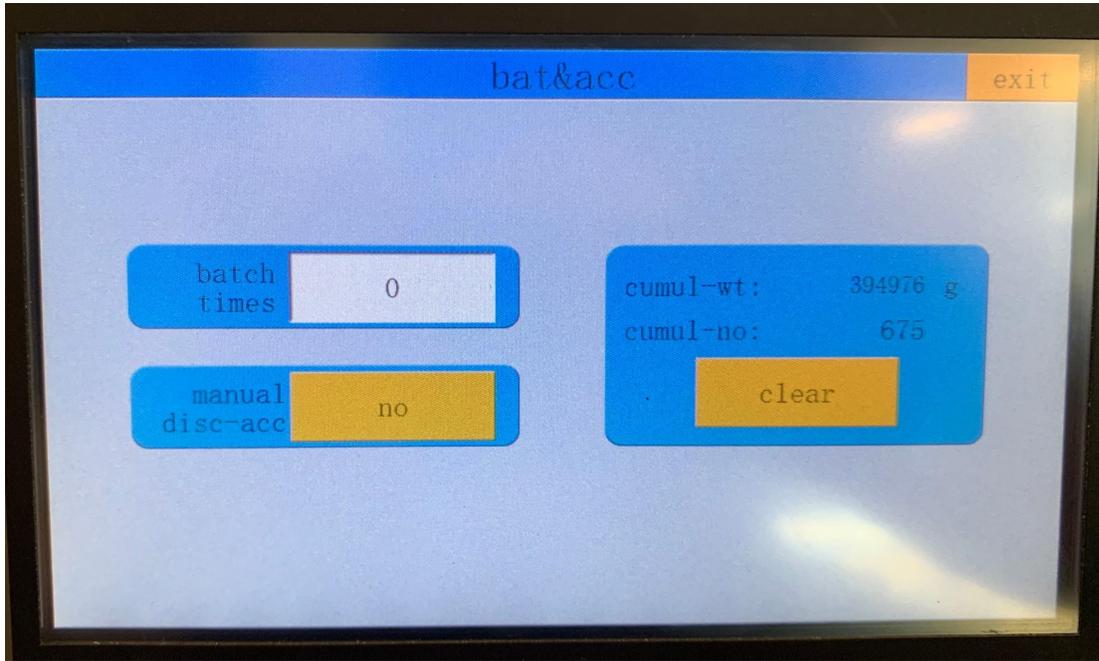
Recipe Page: Fall and ove/und



Text

- **ove/und test-time t5:** Ove/Und Delay time
- **over TOL:** Over Tolerance
- **und TOL:** Under Tolerance
- **ove/und alarm:** Ove/Und Alarm
- **ove/und pause:** Ove/Und Pause
- **correct-times:** Correction Time for AI auto correct functionality.
 - ***Changing this value is generally not advised.**
- **correct-range:** Correction Range for AI auto correct functionality.
 - ***Changing this value is generally not advised.**
- **Corrent-extent:** Correction Width for AI auto correct functionality.
 - ***Changing this value is generally not advised.**
- **ove/und interval:** Acceptable amount Over/Under target

Bat&Acc

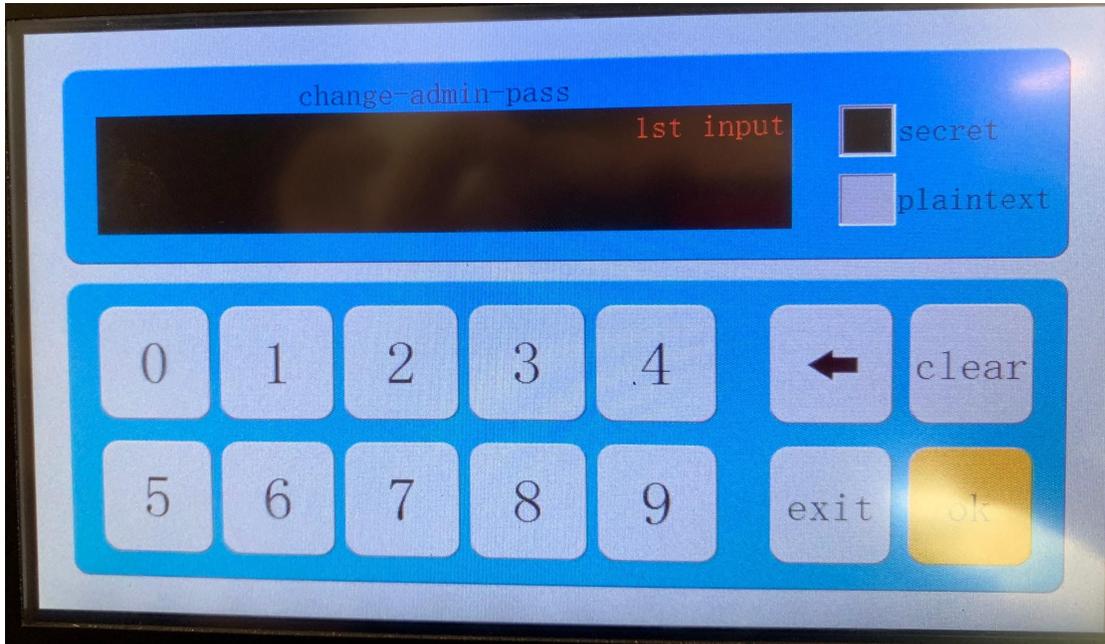
**Title:**

- **bat&acc:** Batch Setting

Text:

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

Password

**Title**

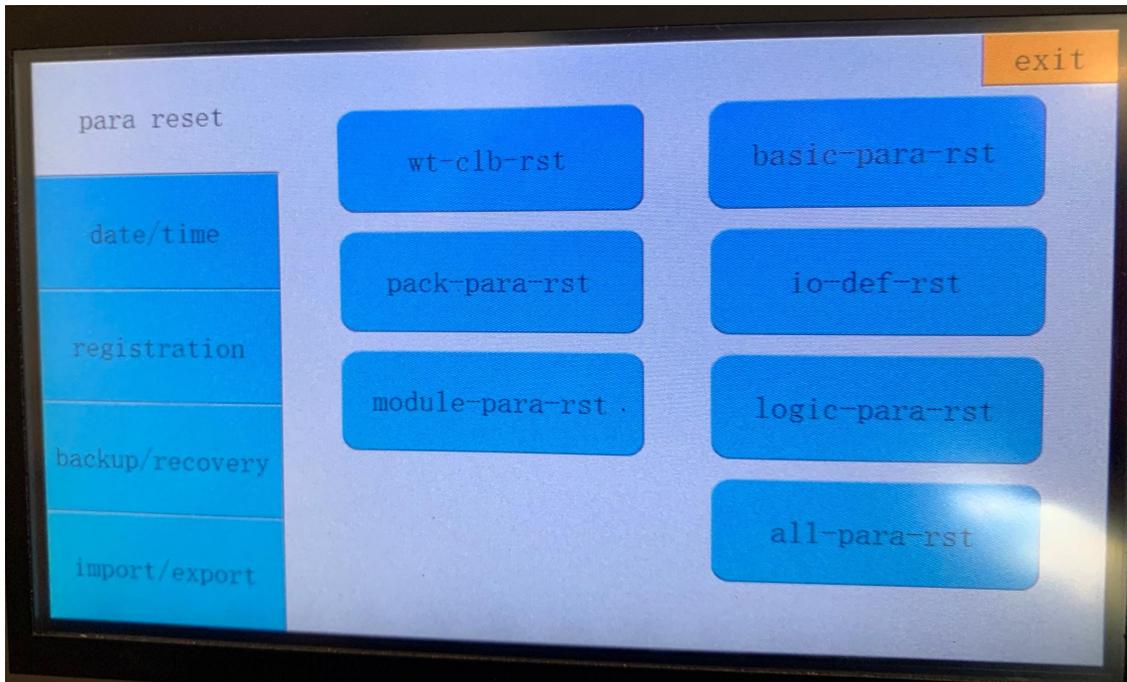
- **change-admin-pass:** Change Admin Password

Text

- **secret:** Password will be hidden when this is toggled.
- **plaintext:** Password will be shown when this is toggled.

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

System: Parameter Reset

**Titles**

- **para reset:** Set parameters back to factory
- **date/time:** Date/Time settings
- **registration:** Registration entry and information
- **backup/recovery:** Backup/Recovery options
- **import/export:** Import/Export recipe data

Buttons:

- **wt-clb-rst:** Reset Weight Calibration
- **pack-para-rst:** Reset Pack Parameters
- **module-para-rst:** Reset Module Parameters
- **basic-para-rst:** Reset Recipe Parameters
- **io-def-rst:** Reset I/O Settings
- **logic-para-rst:** Reset Logic Settings
- **all-para-rst:** Factory Reset all parameters

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”