
Multihead Weigher

Instruction Manual



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1. PREFACE

Thank you for using our Multihead Combination Weighers. This manual is dedicated to helping our customers operate and maintain the machine, which also specifies the regular usage and basic maintenance methods.

1.1 BASIC INTRODUCTION

- This machine adopts factorial theory, which means it will choose one combination which is closest to the target weight from plenty of qualified combinations.
- This machine is particularly applicable for weighing granular products and in pipelining operation.

1.2 NOTICE

- (1) Please read this manual carefully before operation
- (2) Environmental requirements:
 - Temperature: 0 ~ 40°C;
 - Humidity: 35-85%;
 - Power: AC 220±5V, 50-60HZ;
 - Installation place: On rigid, horizontal and no vibration place;
 - Earth line: Make sure the machine is connecting effectively to the earth;
 - Keep away from the disturbing sources;
 - Food packaging should be operated under aseptic and non-dust environment. .
- (3) No bumping or strong pressures on weigh hoppers.
- (4) Check and empty the rest product inside the machine before running.
- (5) Press Zero to empty hoppers before the first running.
- (6) Turn off the power before repairing and cleaning the machine.
- (7) When electronic part fails, non-electronic-engineer is prohibited to repair the machine.
- (8) Be careful and cautious when cleaning and repairing the machine, because there is certain distance between the weigher and the ground if the weigher is installed on the top of the packaging machine.
- (9) Direct current for the connection signals with other equipments (packing machine, conveyor, etc.), should be no more than 30V, the overloading current should be no more than 100mA.
- (10) It is prohibited to touch the hopper while the machine is running.

2. SPECIFICATIONS

Weigh head	10			14			20
Application	Small Granule	Normal Granule	Salad	Small Granule	Normal Granule	Salad	Twin VFFS
Weigh Range	5-200 g	10-1000 g	20-3000 g	5-200 g	10-2000 g	20-5000 g	10-1000*2g
Max. Speed	65	65	50	120	120	80	130
Accuracy	$\pm 0.1-1.0$	$\pm 0.1-1.5$	$\pm 0.1-2.0$	$\pm 0.1-1.0$	$\pm 0.1-1.5$	$\pm 0.1-2.0$	$\pm 0.1-1.5$
Weigh Bucket	0.5 L	1.6L/2.5L	5L	0.5 L	1.6L/2.5L	5L	1.6L
Net Weight	280kg	320kg	500kg	350kg	400kg	700kg	900kg
Control Panel	7" / 9.7" Touch Screen						
Power Supply	220V/50HZ or 60HZ; 10-15A; 1000-1500W;Single Phase						
Drive System	Stepper Motor						

3. WORKING THEORY

3.1 FEEDING

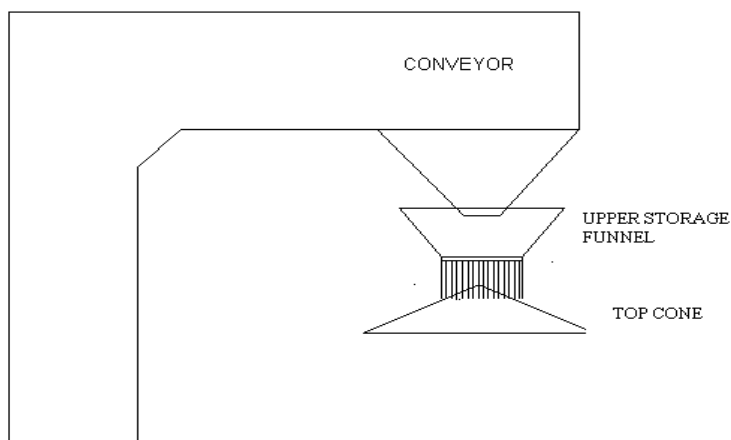
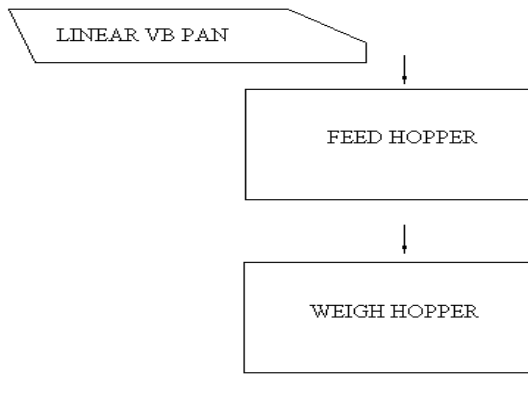


Chart 3-1-1

Product is firstly delivered by Conveyor into upper storage funnel, then discharged and distributed to linear vibrator pans with the help of the top cone. Product thickness can be changed by adjusting the height of storage funnel post. As shown in Chart 3-1-1.

3.2 PRODUCT DISTRIBUTION AND WEIGHING



Product is distributed evenly from Top Cone into each Linear Feeder Pan and stored in Feed Hopper. When Weigh Hopper finishes the previous weighing and discharging the combination, the products in Feed Hopper will be dropped to Weigh Hopper to be weighed and combined. As shown in Chart 3-2-1.

3.3 COMBINATION

The machine CPU will proceed the weight data received from each Weigh hopper, and calculate out numerous qualified combinations which comply with the target weight, then choose the best one to discharge. As shown in Chart 3-3-1.

(1) The parameters related with “weight in weigh hopper”: ‘AFC’, ‘Main AMP’, ‘Line AMP’, ‘Average Combine Hoppers’, ‘Average Hopper Weight%’.

AFC Disable: The bigger ‘Main AMP’ (Main VB Amplitude) and ‘Line AMP’ (Linear VB Amplitude) are, the heavier weigh hoppers are.

AFCT: The bigger ‘Average Combine Hoppers’ is, the lighter Single Hopper Weight is.

AFCW: The bigger ‘Average Hopper Weight%’ is, the heavier each hopper weight is.

(2) The parameters related with combination: ‘OPTIMUM’, ‘Combined Hoppers’

OPTIMUM: the bigger this value is, the higher the accuracy is. As shown in chart 3-3-2, if the ‘OPTIMUM’ is 98, then the best combination ‘9’ will be selected and there is no need finding other combinations.

Combined hoppers: The bigger this value is, the higher the pass rate is. As shown in Chart 3-3-2, if there is no qualified combination weight, and meanwhile the numbers of the actual combined hoppers \geq the numbers of ‘Preset Combined HOPPERS’, then it will be forced to discharge in order to increase the whole running continuity. If the numbers of the actual combined hoppers $<$ the numbers of ‘Preset Combined HOPPERS’, then it will recombine again after the discharged weigh hopper is fed.

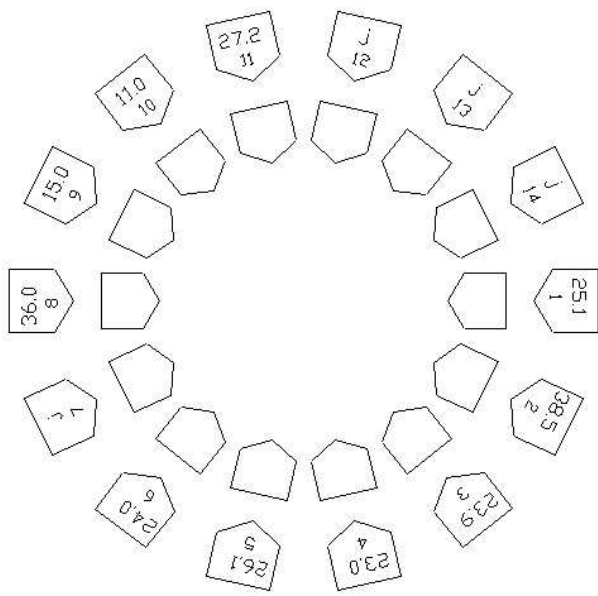


Chart 3-3-1

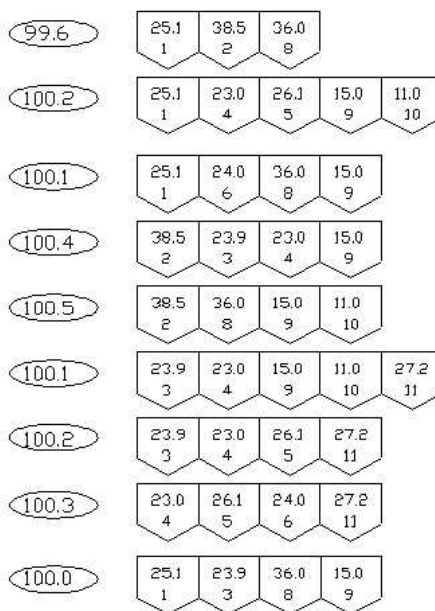


Chart 3-3-2

3.4 DISCHARGE

There are four ways to discharge weighed products to next equipment:

- (1) **Discharge directly (No Timing Hopper):** Product is directly discharged from the discharge chute gate.
- (2) **Discharge by Timing Hopper (One Timing Hopper):** firstly, Product is stored in timing hopper after dropping from weigh hopper, and then dumped to next equipment. This function is to collect products and shorten the dropping time. As shown in Chart 3-4-1

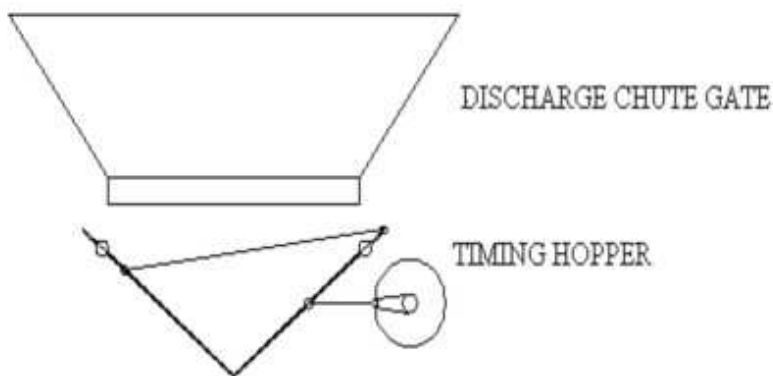


Chart 3-4-1

- (3) **Timing Hopper Distribution (Two Timing hopper):** Firstly, Product is stored in timing hopper after

dropping from the weigh hopper, and then dumped to next two packaging machines according to the 'dumping asking signals'. This function is to make full use of high speed combination weigher. As shown in Chart 3-4-2

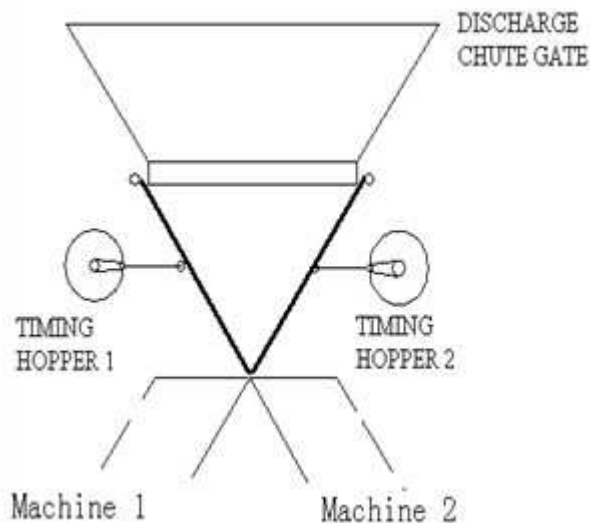
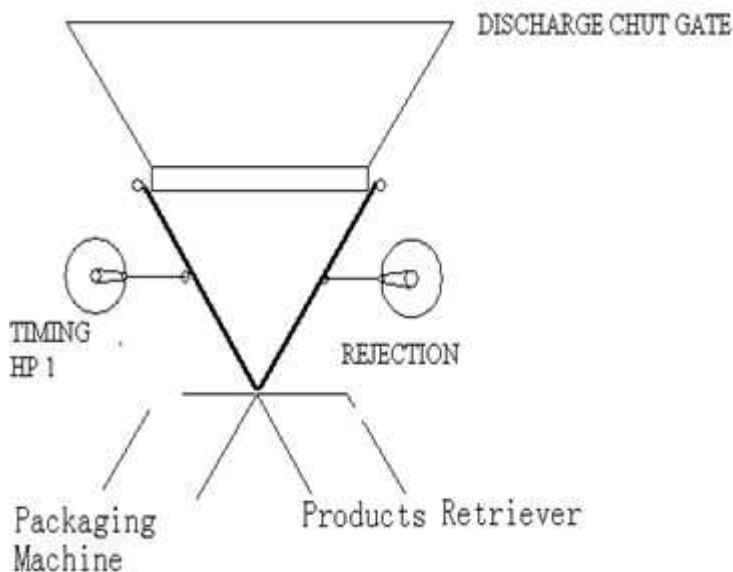


Chart 3-4-2

(4)**Timing Hooper Classification (One Timing Hopper + Rejection timing hopper):** Firstly, Product is stored in timing hopper after dropping from Weigh Hopper; the timing hopper can shorten the dropping time of the products. When there are unqualified products, they will be checked by the motor in rejection timing hopper, then the rejection timing hopper will reject them to recycle. This action can avoid unqualified products dumping into next procedures. As shown in Chart 3-4-3



4. MACHINE STRUCTURE

4.1 MAIN PARTS

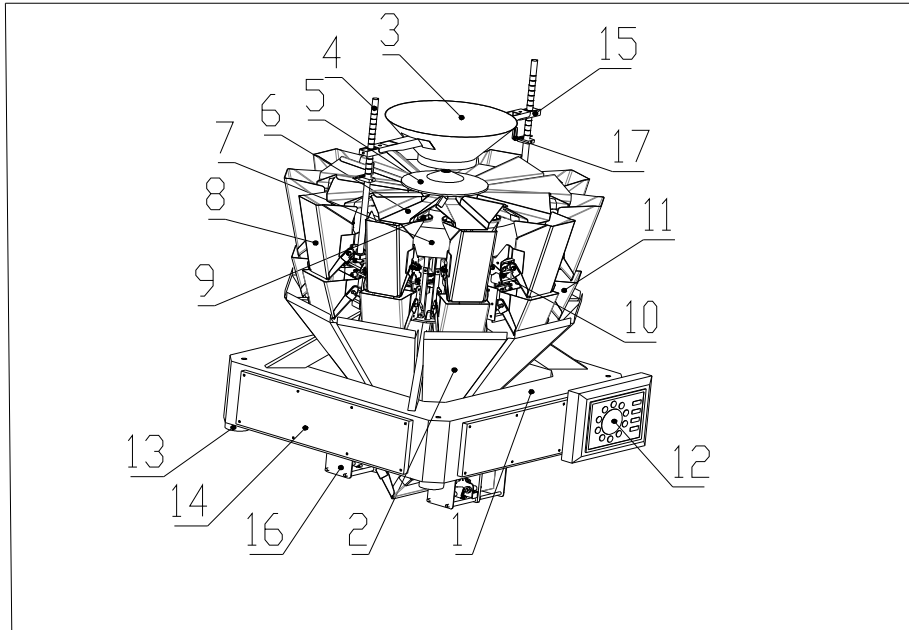


Chart 4-1-1

Part No.	Description	Note	Part No.	Description	Note
1	Machine Frame		10	Actuator	
2	Discharge Chute		11	Weigh Hopper	
3	In-feed Funnel		12	Touch Screen	
4	Supporting Post		13	Plastic Screw	
5	Top Cone		14	Base Cover	
6	Linear Feeder Pan		15	Sensor Clamp	
7	Upper Cover		16	Timing Hopper	
8	Feed Hopper		17	Photo Sensor	
9	Linear Vibrator				

4.2 PARTS INSTALLATION

4.2.1 HOPPER INSTALLATION

(1)As shown in Chart 4-2-1.Grasp the hopper's side with right hand and lift the active lever with left hand. Then, put the upper lever of the hopper on the 'U' shape slot of the lower actuator axis.

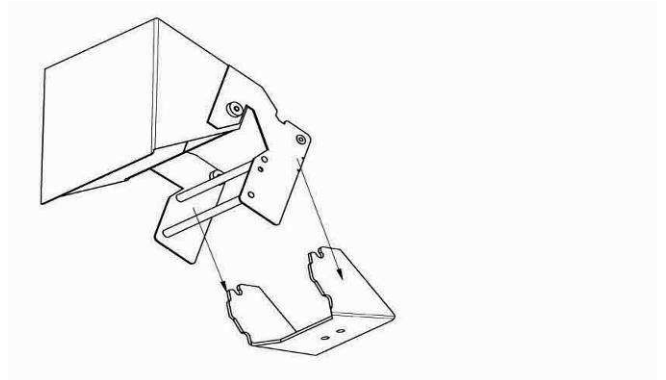


Chart 4-3-1

Chart 4-2-1

(2)As shown in the chart 4-2-2, push the lower lever of the hopper into the groove of the lower actuator axis.

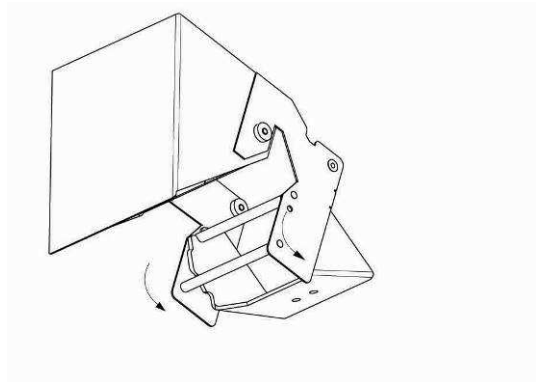


Chart 4-2-2

(3)As shown in the chart 4-2-3, fix the complete hopper on the lower axis of the actuator.

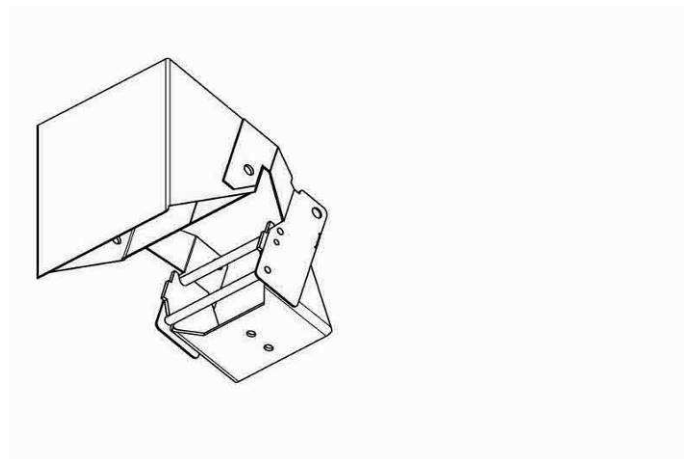


Chart 4-2-3

4.2.2 LINEAR VIBRATION PAN INSTALLATION

Waterproof Vibration Pan: As shown in Chart 4-2-4, loosen the locking handle, and then insert slanting section “a” of the Feeder Pan into section “b” of the Vibrator. Level the Feeder Pan and tighten the locking handle.

NOTICE: Each Linear Feeder Pan should be well installed without bumping with each other.

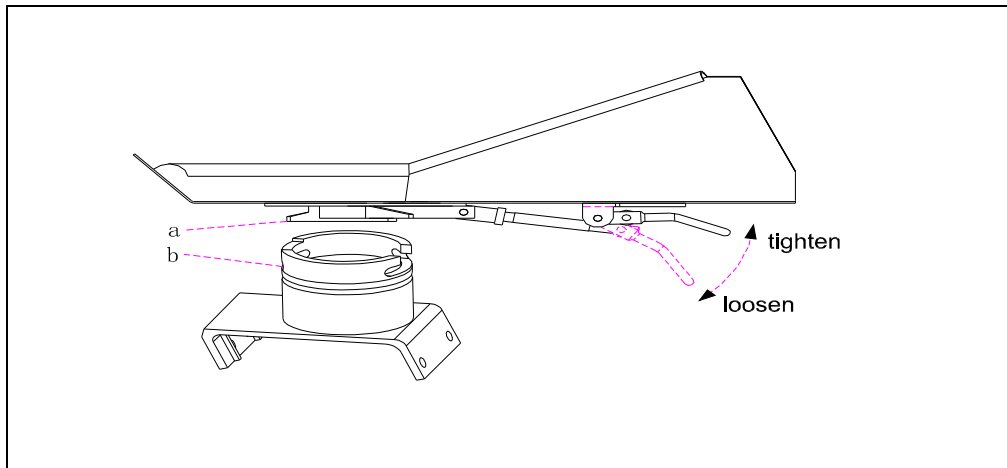



Chart 4-2-4

5. DAILY OPERATION

5.1 LOGIN



Chart 5-1-1


Login: This machine has 3 level passwords for different authority. Firstly, press **password** for input password and then press  to login. After login, the level authority will be showed on the top of screen.

Level 1:(Password: 1). Authority: Run the multihead weigher, select program no. and check production records only, but can not revised any parameters.

Level 2: (Password: 2). Authority: Run the multihead weigher, manual test , read production records and set up program , but can not revise parameters in System Setup.

Level 3: (Password: 3). Authority: revise any parameters.

Logout: Get in password menu and press Logout, or change authority level.

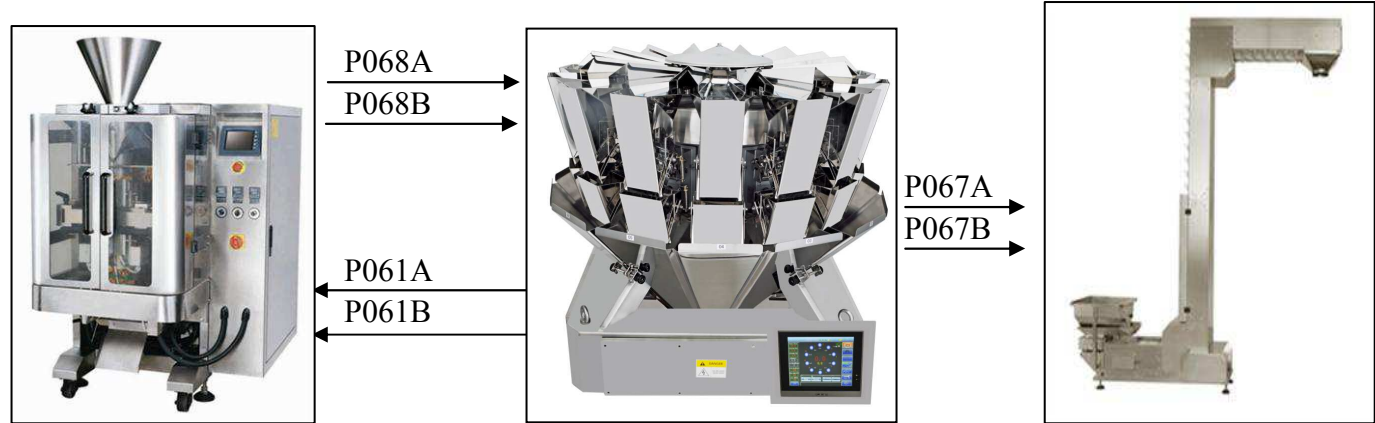
when you see this icon  in the interface, you can enter the help page of the current interface.

5.1.1 Manual for connecting with VFFS packing machine

Multihead weigher signal illustration

- P061A/P061B ————— Discard signal 1
- P062A/P062B ————— Discard signal 2
- P063A/P063B ————— Ready signal
- P064A/P064B ————— Overweight signal
- P065A/P065B ————— Clean out signal
- P066A/P066B ————— Run signal
- P067A/P067B ————— Feed signal
- P068A/P068B ————— Discharge request signal 1
- P069A/P069B ————— Discharge request signal 2

(1) Close connection mainly on packaging machine



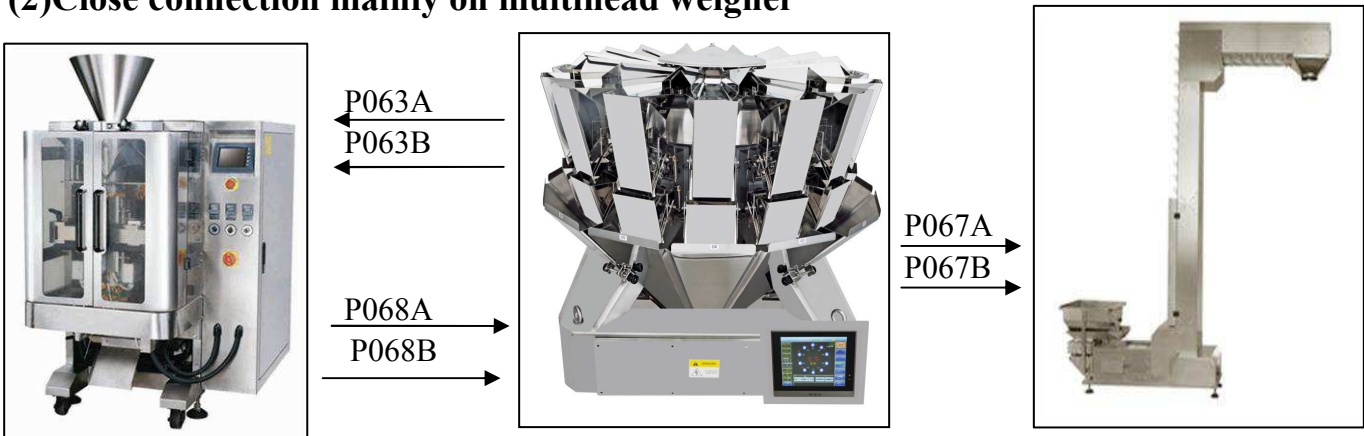
This connection is mainly on packaging machine. When it is running, firstly the packaging machine will send “Discharge request signal (P068A/P068B)” to multihead weigher, then multihead weigher will send “Discard signal 1(P061A/P061B)” to packaging machine.

If there is no product in multihead weigher, multihead weigher will send the “Feed signal (P067A/P067B)”

to conveyor to feed the products.

Packaging machine plays as a master in this connecting way. In running condition, packaging machine will firstly send “discharge request” (P068A\P068B) to the combination weigher and wait for the material dumped from the combination weigher. After dumping material to the packaging machine, combination weigher delay (can be adjustable) to feedback the “discharged” signal (P061A\P061B). Then the packaging machine begins to pack.

(2)Close connection mainly on multihead weigher



This connection is mainly on multihead weigher. After receiving “Ready signal (P063/P063B)” from multihead weigher, packaging machine will send “Discharge request signal (P068A/P068B)” to multihead weigher.

If there is no product in multihead weigher, multihead weigher will send the “Feed signal (P067A/P067B)” to conveyor to feed the products.

Combination weigher plays as a master in this connecting way. After receiving the “ready for combination” signal (P063A\P063B), the packaging machine immediately sends to the combination weigher “discharge request” signal (P068A\P068B).

(3)Open control with pouch packaging machine as master



This connecting way is open control with packaging machine as master. Packaging Machine keeps sending the combination weigher “discharge request” signal (P068A/P068B) according to its running speed without need of combination weigher’s any feedback signal.

How to judge which packaging machine signal is suitable for your multihead weigher:

Connection mainly on packaging machine: pulse and tension with memory.

Connection mainly on multihead weigher: pulse and tension without memory.

Pulse With Memory: after packaging machine sending signal, packaging machine will send signal again until multihead weigher’s feedback arrives.

Pulse Without Memory: packaging machine sends “discharge request” regularly.

Tension With Memory: packaging machine signal is always connecting and multihead weigher speed must be lower than packaging machine speed.

Tension Without Memory: packaging machine signal is always connecting and multihead weigher speed must be lower than packaging machine speed.

5.1.2 Display introduction

Touch Screen Display is the control panel of the multihead combination weigher. With the combination of display function and touching operation, you can touch the keys to operate the machine.

It will automatically enter the home page after turn on the machine, as shown in Chart 5-2-1.



Chart 5-2-1.

5.1.3 Zero operation

1. After turn on the machine, an attention of “**PLS Press Zero**” will be displayed on the run menu, which reminds you that you did not make manual Zero Operation. As shown in chart 5-2-1. (Because when you turn on the machine, the auto zeroing control has made a zeroing to the hoppers which are actually not emptied yet in last operation, which will result in inaccurate zeroing). If zeroing operation is done, it will show "Zero Finish", and all the load cell will be ready in 0.0 g as show on Chart 5-2-1.


Failure-analyses during the zeroing operation:

- ‘Tick’ one time means the zeroing operation is done.
- ‘Tick’ two times means that there is a load cell float with 0.5-200g float after zeroing operation;
- ‘Tick’ three times means that there is something wrong in load cell with above 200g float, and it will display E on the screen and stop the hopper during the running.

5.1.4 Empty

EMPTY can be used to clean out the rest products in the weigher after one operation. Press ‘Empty’ on the run menu, the multihead weigher will empty the products from vibration pan, feed hoppers, weigh hoppers to timing hopper as preset parameters. Press Empty again to exit.

5.2 AUTO RUN(as shown in Chart 5-2-2)

- (1) **Target Wt[g]**/Target weight: The target weight of the Products to be weighed. It can be modified directly.
- (2) **Tolerance+-[g]**: The acceptable tolerance weight. It can be modified directly.
- (3) **Ave Hopper**/Average Combined hoppers: It refers to the average combined hoppers which are used in a successful combination weighing.
- (3) **Act. Speed[b/min]**/Actual Speed: The actual running speed of the weigher refers to how many bags/min.
- (5) **Preset Speed[b/min]**: The preset speed of the combination weigher. It can be modified directly.
- (6) **Main Ampli%**/Main Vibrator Amplitude: It refers to the strength of the main vibrator amplitude. Press number key to input value from 1 to 99.
- (7) **Line Ampli%**/Linear Vibrator Amplitude: It refers to the strength of the linear vibrator amplitude. Press number key to input value from 1 to 99 to modify all linear vibrator together. Press  to modify

individual or some of them together by + or -.



(8) **Program File:** Press **Open** to open file or **Save** to save file.

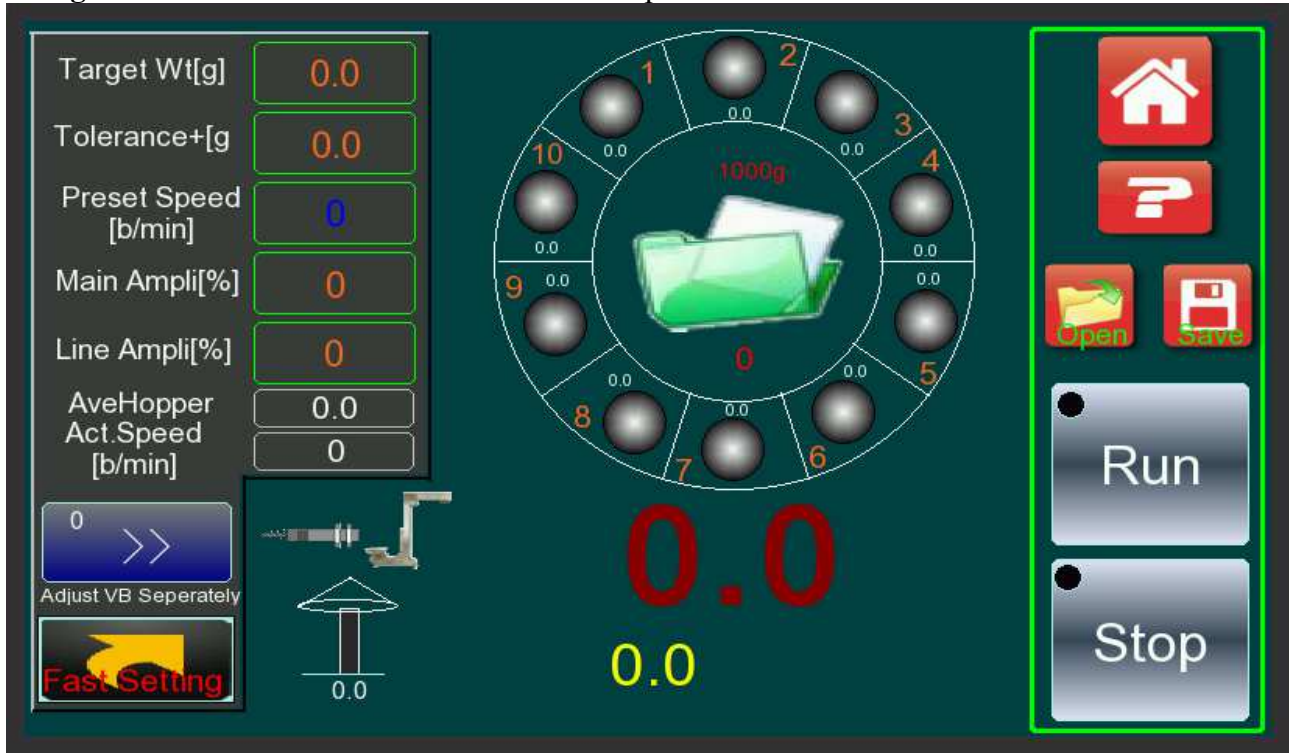


Chart 5-2-2

(9) **Para. No./Parameter Number:** It will show the program name according to your setting on archive menu.

(10) **Explanation for the icons of the hoppers in the running.**

C: Being chosen in the combination

U: The single hopper weight is unqualified and forced to dump

J: Being fed products

L: The single hopper weight is less than the least preset single hopper weight

Q: Being forced to dump due to no combination

R: Ready for combination

W: No selection without combination

Y: No selection with combination

Z: Auto zeroing in the running

Dr: Error in data-collection in the running (Error)

Se: Communication error of the A/D module (Error)

(11) **‘PASS’** will be displayed on the page if the product weight is qualified; **‘Reject’** will be displayed if the weighed product is over or less weight.

(12) When there are not enough products, the green light on right will disappear.

(13) The displayed weight is the weight of the product which was discharged to the discharge chute gate. If there is no timing hopper, the displayed weight refers to the weight of product which the next equipment got; if there is a timing hopper, the displayed weight refers to the weight of products in the timing hopper. The CPU also automatic calculate the tolerance (display weight-preset target weight) and show under display weight, which show operator clearly for weighing situation.

Click this shortcut key  on the lower-left corner to enter parameter interface for frequently-used parameters.



(1) **VB Feed Time[ms]**/Vibrator Feed time: it refers to lasting time for the main and linear vibrators to feed products to the feed hopper. Please input 10-65500. Unit is ms. Recommendation: 300-1000.

(2) **Stable Time[ms]**/Sample stable Time: in order to ensure weighing precision, after opening the feed hopper, it will wait a moment to stabilize the sample products in the weighing hopper and then begin to read the load cell data. Input 720-65500, unit is ms. Recommendation: 800-1500.

(3) **Linear VB Delay[ms]**/Linear Vibrator feed delay: it refers to the delay time for linear vibrator to feed products into the feed hopper after feed hopper opens. Input 0-65500. Unit is ms. Recommendation: 50-1000.

(4) **Feed Hopper Delay[ms]**/Feed hopper delay: it refers to the delay time for the feed hopper to feed

products into the weigh hopper after weigh hopper opens. Input 0-65500. Unit is ms. Recommendation: 50-1000.

(5) **Weigh Hopper Delay[ms]**/Weigh Hopper Delay: it refers to the delay time for the weigh hopper to feed products into the timing hopper after timing hopper opens. Unit is ms. Input 0-65500. Recommendation: 0-1000.

(6) **Timing Hopper Dly[ms]**/Timing hopper1 delay: it refers to the delay time for the timing hopper to discharge products into the packaging machines after weigh hopper opens, in order to make sure all the materials are in the timing hopper and then allow timing hopper1 to discharge. Input 0-65500. Unit is ms. Recommendation: 500-2000.

(7) **Feed HP Open Time[ms]**/Feed hopper opened time: it refers to the period for the feed hopper cover to pause and then begin to close its cover in order to discharge all the products in the feed hopper. Range: 0-65500. Unit is ms. Recommendation: 20-1000.

(8) **Weigh HP Open Time**/ Weigh hopper opened time: it refers to the period for the weigh hopper cover to pause and then begin to close its cover in order to discharge all the products in the weigh hopper. Range: 0-65500. Unit is ms. Recommendation: 20-1000.

(9) **Timing HP1(Reject) Open Time[ms]**/Timing hopper opened time: it refers to the period for the timing hopper cover to pause and then begin to close its cover in order to discharge all the products in the timing hopper. Range: 0-65500. Unit is ms. Recommendation: 100-2000.

(10) **Timing HP2(Bag) Open Time[ms]**: it refers to the period for the timing hopper cover to pause and then begin to close its cover in order to discharge all the products in the timing hopper. Range: 0-65500. Unit is ms. Recommendation: 100-2000.

(11) **Sensor Stop Feed Time[s]**/Level products feed time: when the products photoelectric level sensor checks there is not enough product in the upper storage funnel, it will output 'feeding signal' to conveyor for feeding, until enough material in the upper storage funnel, and then keep feeding how much time. So it refers to the lasting time of feeding signal after checking product is full. Recommendation: 8-20 s.

(12) **Tolerance-[g]**: The down limit weight of the weighed products. Input the required down limit weight from 0 to 6553.5. The last is decimal place. Unit is gram.

5.3 MANUAL TEST

Press icon of  to manual test menu. As shown in Chart 5-3-1.



Chart 5-3-1

Number 1 to 10 represent No.1 hopper to No.10 hopper.

(1) **Main Vibrator/Main Vibrator Amplitude:** Press **Main Vibrator Ampli** to start testing. Then the main vibrator will vibrate according to the preset program.

(2) **Line Vibrator/Linear Vibrator Amplitude:** Press number key to select the linear vibrator number and press **Line Ampli** to start testing. Then the selected linear vibrator will vibrate according to the preset program. Selecting 01-14 means to select the corresponding linear vibrator, and selecting **ALL** means to select all linear vibrators.

Take No. 8 as an example, press 8 and then press Line Ampli, then No. 8 Linear Vibrator will vibrate according to the preset program. The testing methods of other Linear Vibrators are as the same.

(3) **Feed Hopper:** Press number key to select the feed hopper number and press **Feed Hopper** to start testing. Then the selected feed hopper will run according to the preset program. Selecting 01-14 means to select the corresponding feed hopper, and selecting **ALL** means to select all feed hoppers.

(4) **Weigh Hopper:** Press number key to select the weigh hopper number and press **Weigh Hopper** to start testing. Then the selected weigh hopper will run according to the preset program. Selecting 01-14 means to

select the corresponding weigh hopper, and selecting **ALL** means to select all weigh hopper.

(5) **Timing HP1/Timing Hopper1**: Press **Timing HP1** to start testing. **Timing HP2** is standby.

(6) **Run Once**: Press number key to select the hopper No. and press **Run Once**, the selected hopper will have a running in turns from its vibrator, feed hopper, weigh hopper to timing hopper according to the preset program. Selecting 01-14 means to select the corresponding hopper, and selecting **ALL** means to select all hoppers.

(7) **Run Cycle**: Press number key to select the hopper No. and press **Run Cycle**. Then the selected hopper will have a continuous running in turns from its vibrator, feed hopper, weigh hopper to timing hopper according to the preset program.

(8) **Clean**: Press **Clean**, all the hoppers will be opening, which can be used to clean the machine. Press **Clean** again to exit. Press the number key of the hopper, the number key light will turn on and can choose several hopper to open at the same time.

(9) **Read Load cells**: Press Read Load cells, the current value of each load cell will be displayed as below. (If the load cell is in failure, it will display 'Err').



TEST Procedures:


Packing machine interface: After connected signal wire from weigher to packing machine, press **Enable Test Pack Machine**, you will see input signal to packing machine by PLC light or screen, no need to waste products for testing while first installation, there are various signal according to different packing machine requirement. Press **Feeding**, a feeding signal will be output to conveyor for feeding. If signal wires connect

well, conveyor will running for feeding at the moment. **Photocell** light will be in green if both photocells point to each other well. If product or hand stay between photocells, the green light will be disappearing, which can testing photocell working condition. Press Test on **Buzzer**, the buzzer will alarm if in good condition.



Chart 5-3-2

5.4 LOAD CELL CALIBRATION

Press icon of  to get into load cell calibration as Chart 5-4-1(in the next page).

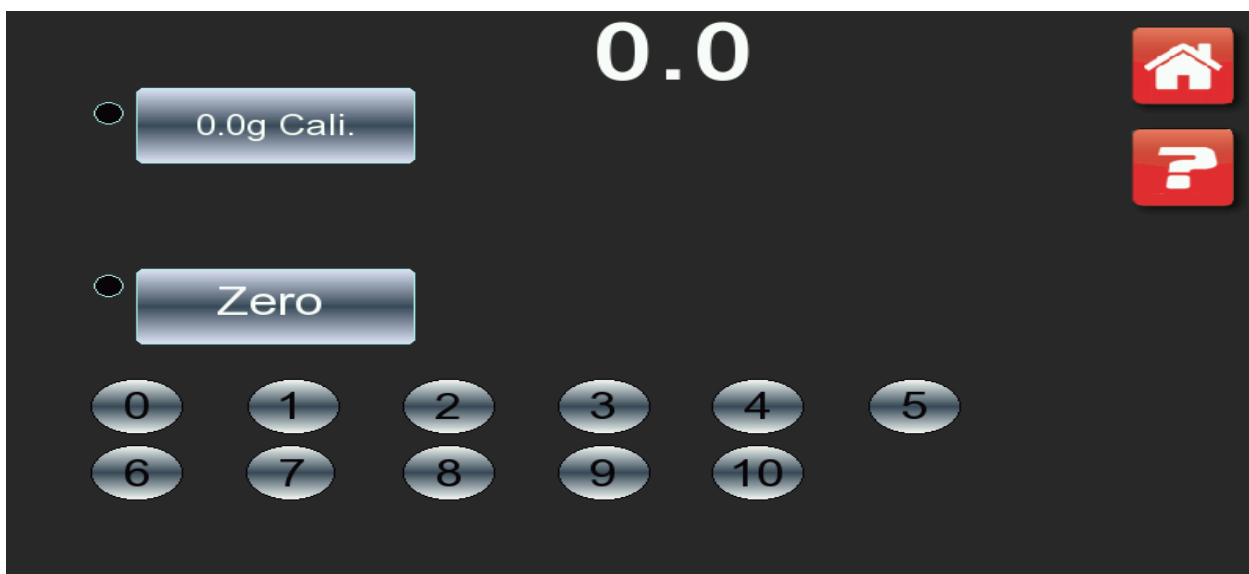


Chart 5-4-1

Chart 5-5-1

First page to record the batches of data , and click "run" to click "stop" for a batch. The upper left part records the weight of per packet and deviation and the following sections record the percentage of each accuracy range.The lower right corner has a input box, used to adjust accuracy range, for example, when you input 1, the target weight is 50g,so the accuracy range is following data:

<46.5, 46.5~47.5, 47.5~48.5, 48.5~49.5, 49.5~50.5, 50.5~51.5, 51.5~52.5, 52.5~53.5,>53.5

The second page records every batch and each record represents a batch production records, including: the total number of packages, the target weight, deviation, the average accuracy, as well the percentage of the accuracy range.

5.6 PROGRAM SETUP

5.6.1 USER PARAMETERS



Press the icon of  to program setup menu as Chart 5-6-1-1.(in the next page)



Chart 5-6-1-1

(1) **Target Wt[g]**/Target weight: The target weight of the Products to be weighed. Input the required target weight from 0 to 6550 g.

- (2) **Tolerance+[g]**: The over limit weight of the weighed products. Input the required up limit weight from 0 to 999g.
- (3) **Tolerance-[g]**: The down limit weight of the weighed products. Input the required down limit weight from 0 to 999g.
- (4) **Tare Weigh**: The weight of the packaging pouch. Input the tare weight from 0 to 999g. The tare weight= the displayed weight- the preset weight.
- (5) **Preset Speed[b/min]**: The preset speed of the multihead weigher. There are some differences between the preset weighing speed and actual weighing speed. Input 10-250, unit is bags/min.
- (6) **Main Ampli(%)**/Main Vibrator Amplitude: it refers to the strength of the main vibrator amplitude. Press number key to input value from 0 to 100. The bigger the value is, the stronger the main amplitude is. Recommendation: 40-80.
- (7) **Line AMP(%)**/Linear Vibrator Amplitude: it refers to the strength of the linear vibrator amplitude. Press number key to input value from 0 to 100. The bigger the value is, the stronger the linear amplitude is. Recommendation: 40-80.
- (8) **VB Feed Time[ms]**/Vibrator Feed time: it refers to lasting time for the main and linear vibrators to feed products to the feed hopper. Unit is ms. Recommendation: 300-1000.
- (9) **Linear VB Delay[ms]**/Linear Vibrator feed delay: it refers to the delay time for linear vibrator to feed products into the feed hopper after feed hopper turns on. Input 0-65500. Unit is ms. Recommendation: 50-500.
- (10) **Feed Hopper Dly[ms]**/Feed hopper delay: it refers to the delay time for the feed hopper to feed products into the weigh hopper after weigh turns on. Input 0-65500. Unit is ms. Recommendation: 50-500.
- (11) **Weigh Hopper Dly[ms]**/Weigh Hopper Delay: it refers to the delay time for the weigh hopper to feed products into the timing hopper after timing hopper turns on. Input 0-65500. Unit is ms. Recommendation: 0-500.
- (12) **Timing Hopper Dly[ms]**/Timing hopper1 delay: it refers to the delay time for the timing hopper1 to discharge products into the packaging machines after weigh hopper turns on, which makes sure all the materials are in the timing hopper1 and then allow timing hopper1 to discharge. Input 0-65500. Unit is ms. Recommendation: 500-1000.
- (13) **Over Wt Signal Time[ms]**/Overweight signal time: it means the lasting time for the combination weigher to send 'overweight signal' to next equipment, when it dumps the overweight materials. Input 0-65500. Unit is ms.

(14) **Dump Signal Delay[ms]**: under the circumstance of ready combinations, the combination weigher will discharge materials to the packaging machine at once, after receiving the ‘dump asking signal’ from packaging machine. And then combination weigher delays a period of time to send a 100ms ‘confirmed signal’ to the packaging machine. Input 0-65500. Unit is ms. Recommendation: 500-1500.

(15) **Dump Signal Time[ms]**:the time of signal which is given to the pack machine.

(16) **Stagger Dump Time[ms]**: When there is a limit for Max Dump Hoppers, that’s to say, one combination will be divided into several dumpings with a certain interval to discharge. Unit is ms.

Press 2 on left side to another page of program setup menu as Chart 5-6-1-2.

(1) **Max Dump Hoppers**: In order to reduce the blockage of puffy products, one combination will be divided into many times to dump. Max Dump Hoppers refers to the max simultaneous dumping hoppers in a combination dumping. Input 1-9, 0 means this function is closed.

(2) **Sum of no dump**: It refers to the times for one single hopper does not attend in combinations, which is applicable to limit the products remaining times in the weight hopper. For example, we set Sum of no dump as N. If one weigh hopper was not selected in continuous N combinations, in the N+1 combination, this weigh hopper has to attend combination. This function is ineffective when N is less than 11.



Chart 5-6-1-2

(3) **Stable Time[ms]/Sample stable Time**: in order to ensure weighing precision, after opening the feed

hopper, it will wait a moment to stabilize the sample products in the weighing hopper and then begin to read the load cell data. Input 720-65500, unit is ms. Recommendation: 800-1500.

(4) **Multi combine Times**: one target weight will be divided into many combinations. In this case, Weight of one combination = Target Weight / Multi comb Times. This function is used to weigh products with big target weight.

Related Parameter: Stagger Dump Time(refers to page 17)

(5) **Auto Zero Time[min]/INTERVAL**: it refers to the interval of Automatic Zero Resetting in the running process. Used to clean the zero float of the load cell. Input: 0-99. Unit is ms. Recommendation: 5.

(6) **Feed HP Open Time[ms]**/Feed hopper opened time: it refers to the period for the feed hopper cover to pause and then begins to close its cover in order to discharge all the products in the feed hopper. Range:0-65500. Unit is millisecond. Recommendation: 10-500.

(**Weigh Proportion**: It refers to mixture products weighing.)

(7) **Conveyor Dly[s]**/Conveyor delayed time: When there are products in in-feed funnel(the product height is higher or as high as photo sensor level) checked by photo sensor, send “Feed signal” to conveyor after the delayed time we set.

(8) **Weigh HP Open Time**/ Weigh hopper opened time: it refers to the period for the weigh hopper cover to pause and then begins to close its cover in order to discharge all the products in the weigh hopper. Range: 0-65500. Unit is millisecond. Recommendation: 10-500.

(9) **Timing HP1 Open Time[ms]**/Timing hopper opened time: it refers to the period for the timing hopper cover to pause and then begins to close its cover in order to discharge all the products in the timing hopper. Range: 0-65500. Unit is millisecond. Recommendation: 100-1000. (Timing HP2 is standby, the parameters are the same as Timing HP1)

(10) **Sensor Stop Feed Time[s]**/Level products feed time: when the products photoelectric level sensor checks there is not enough product in the upper storage funnel, it will output ‘feeding signal’ to conveyor for feeding, until enough material in the upper storage funnel, and then keep feeding how much time. So it refers to the lasting time of feeding signal after checking product is full. Range: 8-20 s.

(11) **Start Feed Weight[kg]**: It refers to a weight for the machine to send 'feeding' signal when the product level sensor checks there is not enough products on the upper storage funnel. (Note: this is useful for the combination weighers using Main Vibrator with load cell). Range: 0-99. Unit is kg.

(12) **Stop Feed Weight[kg]**: It refers to a weight for the machine to stop 'feeding' signal when the product level sensor checks there are enough products on the upper storage funnel. (Note: this is useful for the

combination weighers using Main Vibrator with load cell). Range: 0-99. Unit is kg.

(13) **Min Single HP Weight%/Minimum single hopper weight%:** it means that the single hopper weight is less than the single combination weight percent, which is regarded as ‘low product’, and not allowed to attend the combination, and it needs feeding material. Input 1-99, unit is %. Recommendation: 11%--15%.

Press 3 on the left size to the third page of program menu as chart 5-6-1-3.



Chart 5-6-1-3

(1) **Single Piece Wt/Standard piece weight:** the single piece standard weight (average weight) for the uniform products which is applicable to calculate the combination weight to finish the target pieces. Range: 0.01-655.35g.

(2) **Target Pieces:** the target pieces of the weighing products. Range: 1-65535. Total weight=Target Pcs× Single Piece WT. (Total weight is no more than 6500.00g)









Related Parameter: Measure Mode - Counting (refers to page 26)

(3) **Piece Tolerance[+g]/Single piece over weight limit:** it refers to the max over weight of Single Piece Weight. For example, Single Piece Weight is 20g, the max weight for one piece is 20.8g, thus Piece Tolerance [+g] should setting at 20.8g-20g=0.8g. Range: 0-2g. When one single piece weight is over limit, it will be not included in combination, and there will be “E” on the running interface.

(4) **Piece Tolerance[-g]/Single piece less weight limit:** it refers to the min less weight of Single Piece Weight. For example, Single Piece Weight is 20g, the min weight for one of piece is 19.5.g, thus Piece Tolerance [-g] should setting at 20g-19.5g=0.5g. Range: 0-2g. When one single piece weight is over limit, it will be not included in combination, and there will be “E” on the running interface.

- (5) **Output On Time[ms]**/The Blink on time of Programme DIY Function.
- (6) **Output Off time[ms]**/ The Blink off time of Programme DIY Function.
- (7) **Reserve:** The parameter reserve for future optional parameter setting.
- (8) **Feed Motor Mode**/Feed hopper motor mode: it refers to the running model of the feed hopper motor; you can use the preset 4 kinds of 'feed motor model' in the 'Motor setting' menu. The factory default setting is that the bigger this value is, the faster the speed is. Range: 1-4. Recommendation: 2.
- (9) **Weigh Motor Mode**/Weigh Hopper Motor Mode: it refers to the running model of the weigh hopper motor; you can use the preset 4 kinds of 'weigh motor model' in the 'Motor setting' menu. The default factory setting is that the bigger this value is, the faster the speed is. Range: 1-4. Recommendation: 2.
- (10) **Timing Motor Mode**/ Timing hopper1 motor mode: it refers to the running model of the timing hopper motor; you can use the preset 4 kinds of 'timing motor model' in the 'Motor setting' menu. The default factory setting is that the bigger this value is, the faster the speed is. Range: 1-4. Recommendation: 2.
- (11) **Main Motor Mode**/Main vibrators motor mode: it refers to the running model of Rotary Main Vibrator Motor; there are 8 steps to control rotary top cone's direction and speed as below:
 - ①**Speed:** it refers to the rotary top cone speed. The higher the value setting is, the fast the speed is.
 - ②**Step Time[s]:** refers to how much time the rotary top cone will keep running. 0 will close the step running. Recommendation: 5s.
 - ③**Direction:** it refers to running direction you need. Press the icon to change direction.
 - ④**Enable Hopper Shake**/Enable all hoppers shake

NOTE: When weighing salad, first step setting at clockwise, and next step in anti-clockwise.

Steps	Speed[%]	Step Time[s]	Direction
1	0	0	
2	0	0	
3	0	0	
4	0	0	
5	0	0	
6	0	0	
7	0	0	
8	0	0	

Run intermittently or not 0 Runing intermittent time[s] 0

setting method: one signal of main virator includes 8-step running, and in every step you can set rotating time, speed and direction of main vibrator. If you need main vibrator only runs two steps, please set running time of other steps as zero. If you need some step of main vibrator stop, please set speed of that step as zero.

Related Parameter: Top Cone Model. Please change to Rotary if you need this function (refer page26)


Enable Weigh Hopper Shake/Enable Weigh Hopper Shake: It refers to whether open weigh hopper shaking or not while apply in sticky product.

0: Disable this function (Normally, no need to open if product can flow down easy while weighing)

1: Enable this function

Related Parameter: Motor Setup -Weigh Hopper Shake (refer to page 29)

(14) Enable Hopper Shake/Enable all hoppers shake: If the product is sticky, some products may stick on the weigh hopper in running. At this time, this function is needed, the weigh hopper will shake when it dumps the products. Set “0” means this function is closed. Set “1” means this function is opened. The vibration

amplitude, speed and shake time can be set in  interface.

Advice: close this function, if this function is used frequently, the life-span of actuator will be shortened.

Press 4 on the left side to fourth page program menu as Chart 5-6-1-4.



Chart 5-6-1-4

1. **AFC**: Automatic Frequency Control.

Disable: close this function.

AFCT, it will adjust the amplitudes according to the combination hoppers and it will give an auto adjustment to all linear vibrator amplitudes ; And it can adjust the single one alone.

AFCW, it will adjust the amplitude according to the single hopper weight and it will give an auto adjustment to every linear amplitude and display the amplitude separately.

-----**AFCT**-----

- a). **Average Combine Hoppers**: it refers to the average combination hoppers which are used in a successful combination weighing. Range: 0-99. Recommendation: 3.0-7.0.
- b). **Tolerance of AFCT**: it refers to the average combination hoppers windages which are used in each successful combination. Range: 0-99. Recommendation: 0.1-1.0.
- c). **AFCT Track Interval/Track Interval**: After how many successful combinations, all linear amplitudes will be adjusted automatically. Range: 0-100. Recommendation: 10.

-----**AFCT Working Procedures**-----

- A. The linear amplitudes are too strong which leads to less combination hoppers, and need to adjust.
The actual total combination hoppers after the combination in a track interval < ((AV combination hoppers – Single acceptable error) × Track Interval) ==> All linear amplitudes – 1.
- B. The linear amplitudes are too weak which leads to more combination hoppers, and need adjusting.
The actual total combination hoppers after the combination in a track interval > ((AV combination hoppers – Single acceptable error) × Track Interval) ==> All linear amplitudes + 1.

-----**AFCW**-----

- a). **Average Hopper Weight%/ Single Average Hopper weight percent**: it refers to the ideal average weight of single hopper, and it was calculated as certain percent of single combination weight. Range: 0-100. Recommendation: 20%-40%
- b). **Tolerance of AFCW[g]/Single Hopper Acceptable Error Weight**: it refers to the single allowable hopper weight error in the running. Range: 0-99. Recommendation: 1.0g
- c). **AFCW Track Interval/Track interval**: After how many successful combinations for each single hopper, linear amplitude of single hopper will be adjusted automatically. Range: 0-100. Recommend:10.

-----AFCW Working Procedures-----

A. Single linear amplitude is too strong which leads to overweight when the single hopper is weighing and needs to be adjusted automatically.

The actual single hopper weight after the combination in a track interval $> ((\text{Single AV weight \%} \times \text{Single target combination weight} + \text{Single acceptable error}) \times \text{Track Interval}) \implies \text{Single linear amplitude} - 1$.

B. Single linear amplitude is too weak which leads to light weight of the single hopper, and needs adjusting.

The actual single hopper weight after the combination in a track interval $< ((\text{Single AV weight \%} \times \text{Single target combination weight} - \text{Single acceptable error}) \times \text{Track Interval}) \implies \text{Single linear amplitude} + 1$.

5.6.2 High Level Parameter



Chart 5-6-3-1

(1) **No Combine Action**/ No Combination action: it refers to the methods to deal with unqualified combinations. Default as auto force dump.

①Auto Force Dump. Recalculate all the combinations and choose the combination larger than and closest to the target weight to discharge. At the same time, it will output overweight signal.

②Manual Dump. The machine stop automatically, “manual dump please” will be displayed. Press **E** to confirm after manual interference, it will feed and recombine.

(2) **Top Cone Mode:** There are 2 Top Cone Modes for you to make choice.

- ① Vibration: suitable for weighing products with good fluidity.
- ② Rotary: suitable for weighing products with bad fluidity.

(3) **Combine Mode:** It's only for 14 head weigher.

① High Speed. it refers to the remaining hoppers from the last combination can make the second combination, the speed can be up 120 bags/min.

② High Precision: it refers to make the combinations after all the hoppers have been fed, which is suitable for big target weight with low speed..

(4) **Combine Mode:** It's only for 14 head weigher.

① High Speed: it refers to the remaining hoppers from the last combination can make the second combination, the speed can be up 120 bags/min.

② High Precision: it refers to make the combinations after all the hoppers have been fed, which is suitable for big target weight with low speed..

(5) **Multi combine/Multi-Combination times:** multi-combination discharging.

- ① Disable
- ② Enable.

(6) **Measure Mode:** selection between weighing method and counting method. Default as Weighting.

- ① Weighing method: make combination as per target weight, unit is gram.
- ② Counting method: make combination as per target pieces, unit is pcs.

(7) **Dump Signal to bagger/discharge signal to next equipment:** Ways to receive the signal of 'dump asking' from the packaging machine.

① Pulse with memory. It refers to the pulse receiving the signal of 'dump asking' as soon as the weigher discharges the last combination. (If weigher receives the signal of 'dump asking' first, then finishes the weighing, it will discharge directly without output Ready signal.)

② Pulse without memory. It refers to the pulse receiving the signal of 'dump asking' after weighing the products.

③ Tension with memory. It refers to the tension receiving the signal of 'dump asking' as soon as the weigher discharges the last combination. The weigher receives the signal of 'dump asking' as soon as it discharges the last combination. (If weigher receives the signal of 'dump asking' first, then finishes the weighing, it will discharge directly without outputting Ready signal.)

④ Tension without memory. It refers to the tension receiving the signal of 'dump asking' after weighing the products.

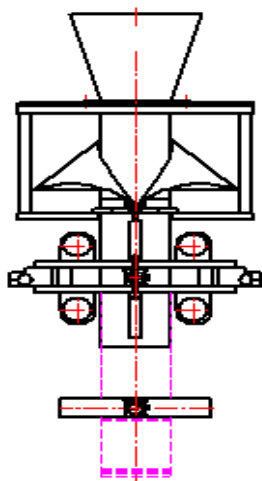
NOTE: Pulse takes effect when the signal switch goes from on to off.

Tension takes effect when the signal switch is on.

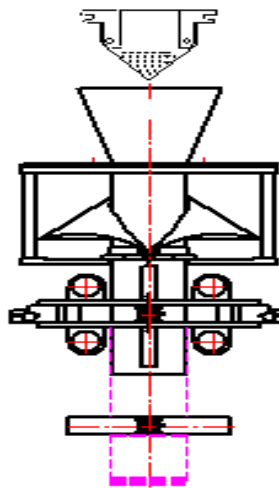
(8) **Timing Hopper Mode**/Timing hopper model: there are 4 ways of timing hopper mode for you to choose.

- ① No timing hopper.
- ② Timing HP for one bag: To be characteristic of the high speed packaging.
- ③ Timing HP for two bag: Make full use of the high speed of the weigher by discharging products to two packaging machines through two timing hopper motor, from left and right side, mainly for twin VFFS.
- ④ Timing HP for rejection: Single timing hopper motor + weight checker mode. Combine the rejects checking with high speed of the packaging machine.

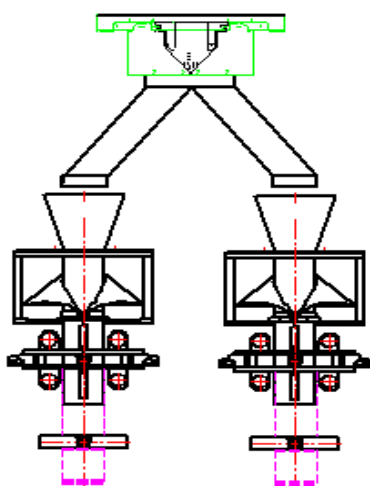
No timing hopper



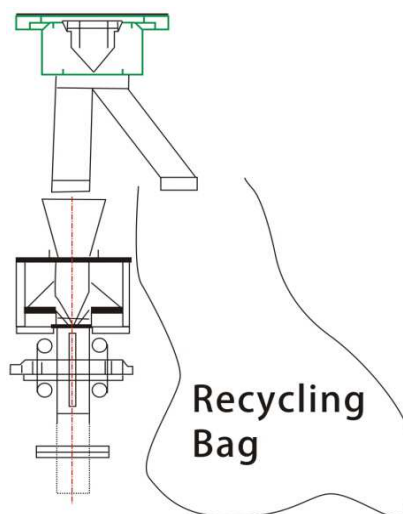
one timing hopper



Two timing hoppers



one timing hopper+weight checker



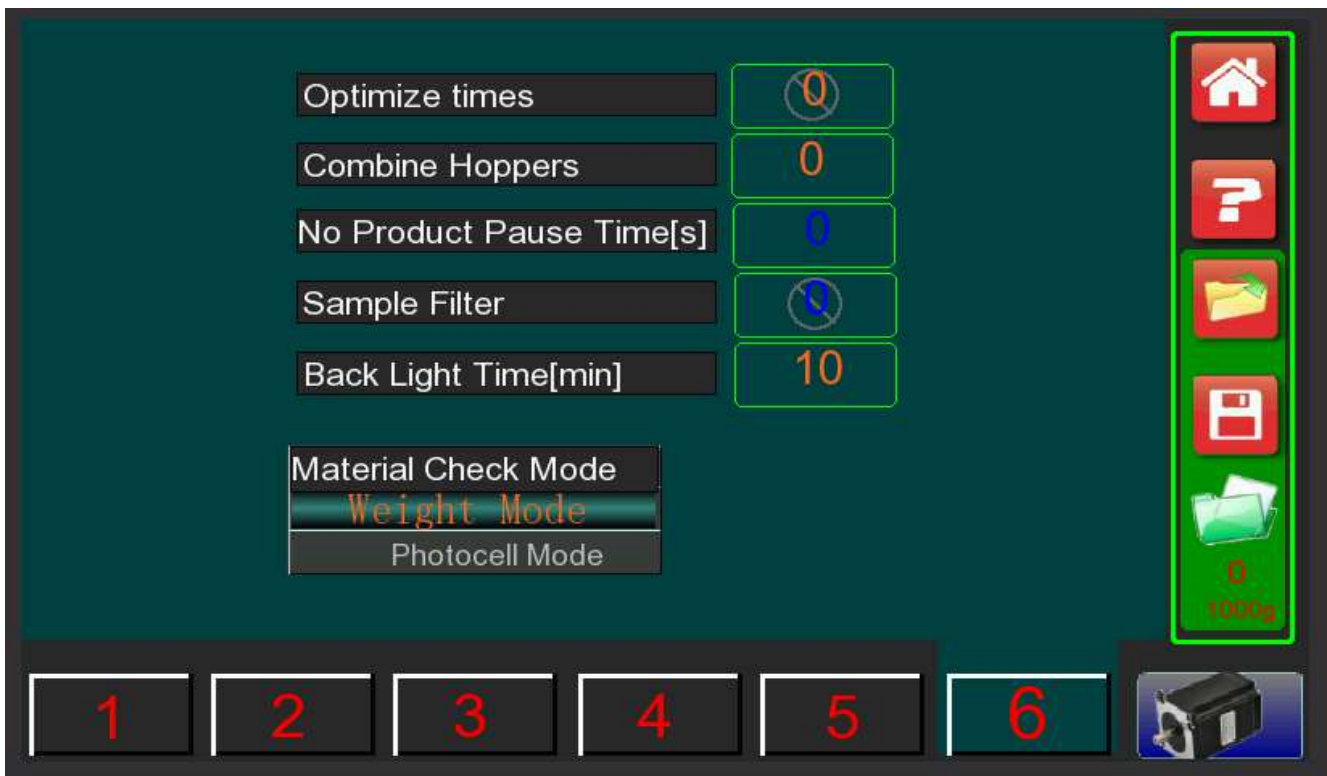


Chart 5-6-3-2

(1) **Optimize Times:** When the quantity of the qualified combination achieves the ‘**Optimize Times**’, the CPU will stop combining and select one best combination. **Optimize Times** value can be used to improve the packaging accuracy. Range: 1-99. Recommendation: 98.

(2) **Combine Hoppers:** if there is no successful combination, it will decide if re-feed products to recombine, or make an enforced combination to discharge according to the current actual combined hoppers. The judging formula is as follow. (This parameter is exclusive for 14 heads weighers)

① Actual combined hoppers \geq preset combined hoppers \rightarrow enforced discharge

② Actual combined hoppers $<$ preset combined hoppers \rightarrow load materials and combine

This value can be used to control the pass rate and running continuity. (When this value is smaller, the running continuity will be better, but at the same time the pass rate will be lower. On the contrary, when this value is bigger, the running continuity will be worse, but the pass rate will be higher.) Range: 06-14.

(3) **No Product Pause Time:** The machine pause period when there is not enough products on the upper storage funnel. The machine will automatically run if there are enough products on the upper funnel. If you want to weigh all the rest products, pls press **RUN** to cancel this function. Range: 1-999S.

(4) **Sample Filter/** Sample filter value: it refers to the filtering grade of the load cells. The bigger the value is, more stable the weighing datum is, and at the same time the lower the reaction speed is. Recommendation: 5-8. (If for 10 or 14 head salad weigher, recommend 3-7).

(5) **BACK LIGHT TIME**: The time for the LCD to be in a poor light due to no operation. Range: 0~9999min.

Press icon of  to high level motor setup menu Chart 5-6-3-3.

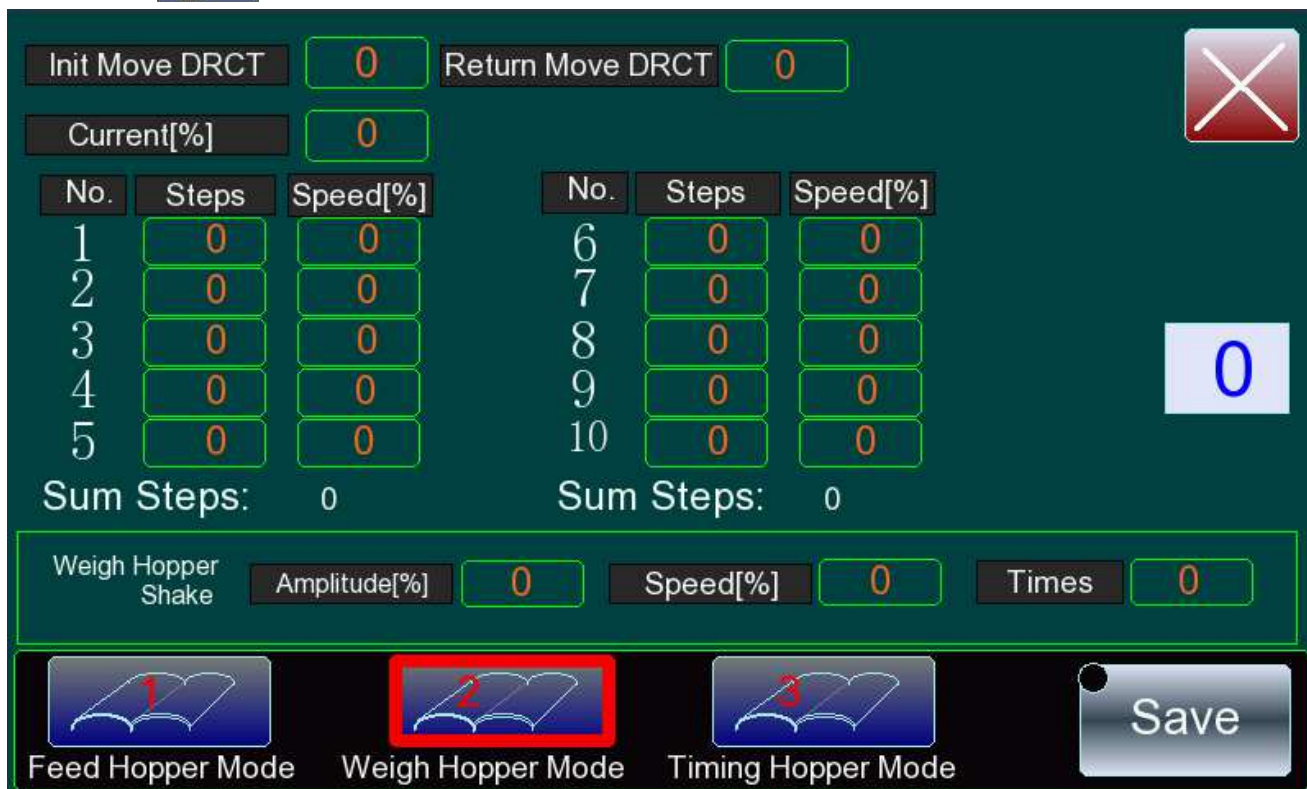


Chart 5-6-3-3

- (1) **Feed Hopper Mode**: Input 1-4 to select the motor model, and press E to confirm. The corresponding step and speed will be displayed on the screen, which can also be changed independently.
- (2) **Weigh Hopper Mode**: Input 1-4 to select the motor model, and press E to confirm. The corresponding step and speed will be displayed on the screen, which can also be changed independently.
- (3) **Timing Hopper Mode**: Input 1-4 to select the motor model, and press E to confirm. The corresponding step and speed will be displayed on the screen, which can also be changed independently.
- (4) **Init. Move DRCT**: the rotary direction of the front 5 segments (1-5).
1: anticlockwise rotary. 0: clockwise rotary.
- (5) **Return Move DRCT**: the rotary direction of the back 5 segments (6-10).
1: anticlockwise rotary. 0: clockwise rotary.
- (6) **Current**: it refers to the motor current level during the running. Range: 1- 15. The bigger this value is, the stronger the rotary strength is.
- (7) **Steps**: it means that the step motor runs how many pulses within this segment, for each pulse, the step

motor rotary angle is 1.8° .

(8) **Speed:** the rotary speed for each step within the segment. Range: 0-200. (must be saved)

NOTICE: The back move total steps must be equal to the front move total steps.

(9) **Weigh Hopper Shake:** Refers to how to control the weigh hopper shaking

(10) **Amplitude:** Strength of the shaking amplitude;

(11) **Speed[%]:** Shaking speed;

(12) **Times:** Shaking how many times

(13) **Save:** Used to save the amended parameters. It will display OK on the screen and there will be a "TICK" notice after a successful operation

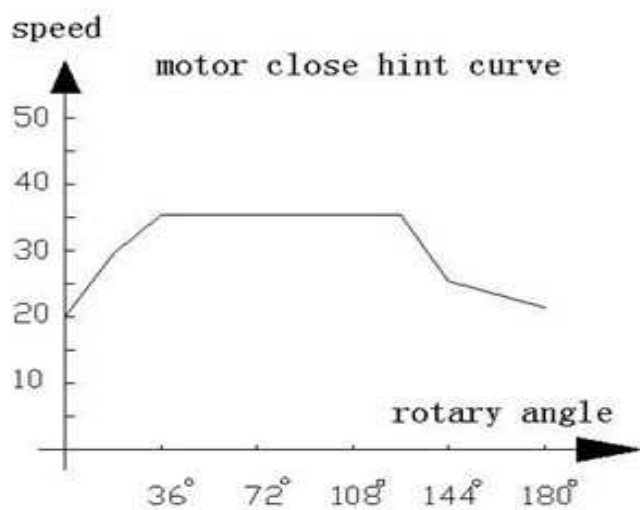
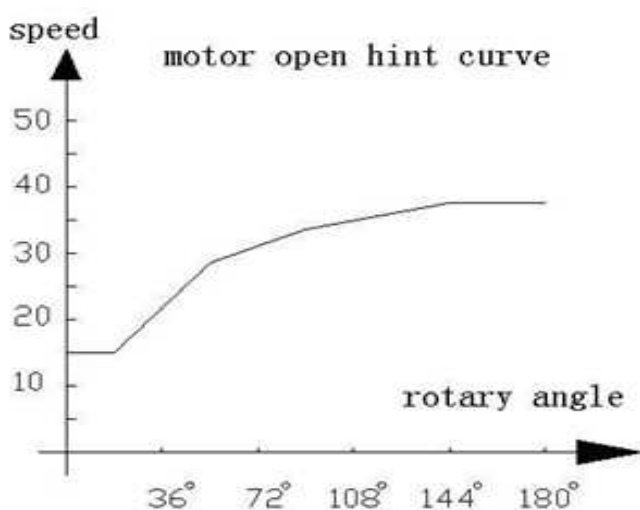
ATTN: When you set the motor model, you can take below illustration for reference to get the graph, as shown in Chart 5-6-3-4.

(1) **The setting methods of the front 5 segments when the hoppers are opening.**

① the start speed of the motor should not be too fast. ② the motor speed should be slow in order to reduce noise when it begins to touch the hopper pole. ③ when it completely touches the hopper pole, the motor should be as fast as possible. ④⑤ keep fast to save time.

(2) **The setting methods of the back segment when the hoppers are closing.**

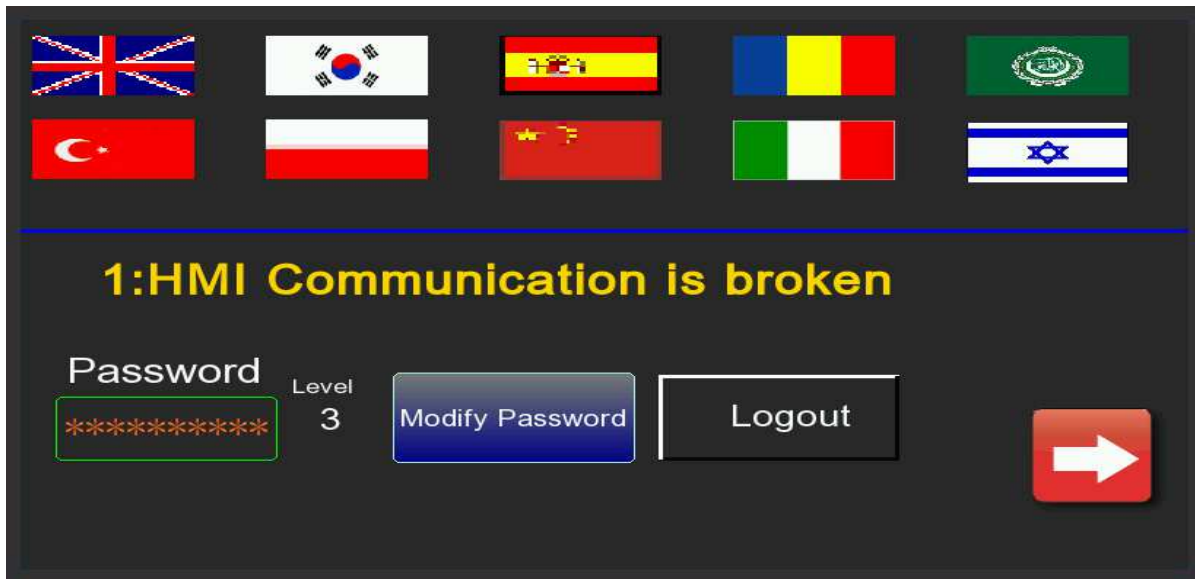
① the start speed of the motor should not be too fast. ② the motor begins to speed up. ③ keep speeding up for a while. ④ begin to slow down and prepare to keep away from the hopper pole ⑤ keep slow down to keep away from the hopper pole at a stable speed to reduce noise and vibration.




5.7 SYSTEM SETUP

5.7.1 PASSWORD

(1) You can modify your password while you are logging in. The higher password level u get, the operator can get more operation to make the machine run well. Operator can also logout while running. Modification method: press the number below the level, then input 1-10 numbers in keyboard.



(2) Also, the operator can press this shortcut icon  to enter password page and press the number below the level, then input 1-10 numbers in keyboard.



5.7.2 FUNCTION

Press icon of  to function page

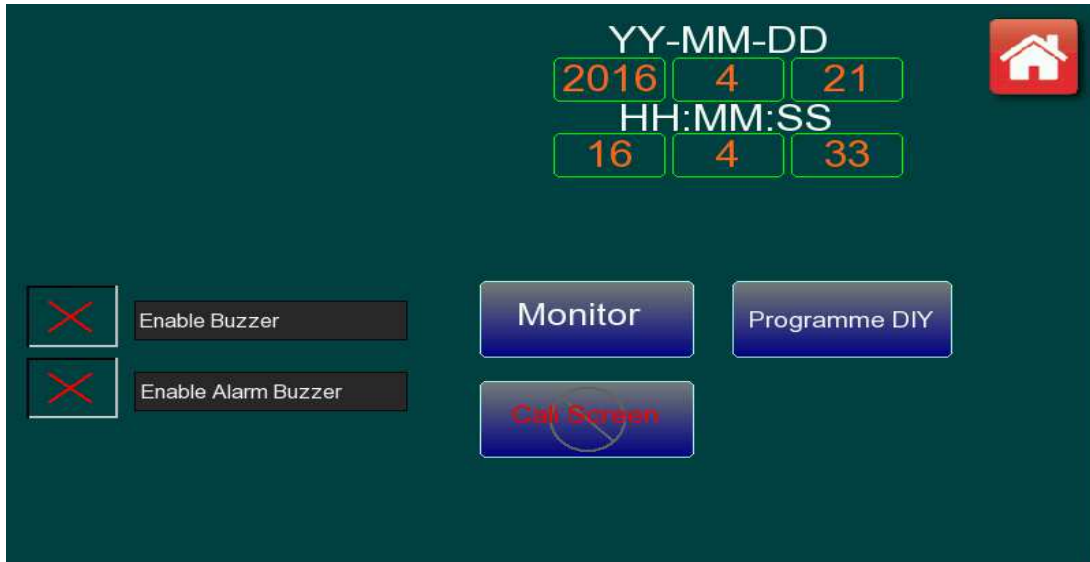


Chart 5-7-1-1

- (1) **Enable Buzzer:** Open buzzer alarm or not.
- (2) **Enable Alarm Buzzer:** Enable alarm or not while failure.
- (3) **Date setting:** input the current date, then press E to confirm.
- (4) **Time setting:** input the current time, then press E to confirm.
- (5) **Cali. Screen/Calibration Screen**

When the display place of screen key and the touch key are not in the same position, you need to make screen correction by Screen Calibration. There will be a + on the screen, press the + position when it appears, finally, + will display on the center of screen, press and it will show screen calibration success. If not, press the + according appear position until success. As shown in below charts.

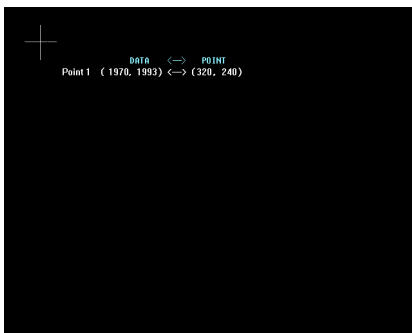


Chart 5-7-2-2

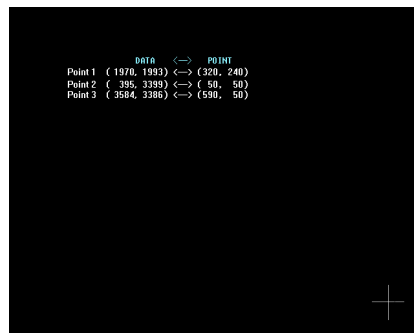


Chart 5-7-2-3

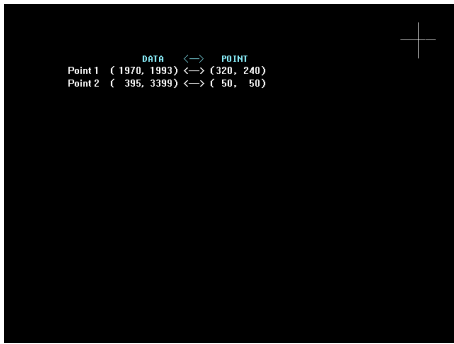


Chart 5-7-2-4

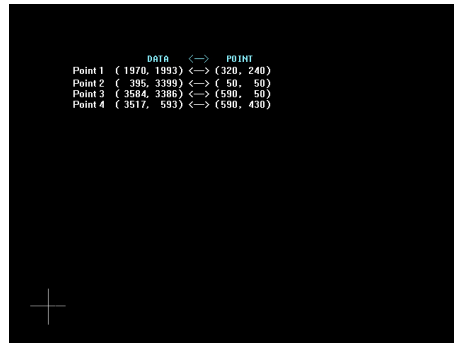


Chart 5-7-2-5



Chart 5-7-2-6

5.7.3 ARCHIVE



Press this shortcut icon to enter archive page.




- (1) **Open File:** Press Open File, it had saved 13 programs according to different weight and speed, the others relevant parameters also already preset, user just only need to select a weight close to target weight as Chart 5-7-3-2, and then press $\sqrt{\quad}$ to confirm, this initial program will be opened as current weighing program, which also be showed on the top of screen by Program No. If your target weight is not on the list, back to Program setup menu by press  as Chart 5-7-3-3. Change the target weight and preset speed you require, and then press  on top back to Auto run page, then press Save File.



Chart 5-7-3-2



Chart 5-7-3-3

(2) **Save File:** Preset program can be saved in here, and open for running easier in next working day. For example, if you need to weigh 30g nut, press Open, and then select 50g by $\sqrt{\quad}$, this program will be opened. Go to Program Setup by , revise target weight to 30g, and the speed you need, press Save and select a position you need by $\sqrt{\quad}$, and then press the bank position for change Program Name and select pictures, max 6 characters. When you need to open this program next time, just need to press

Open File to find this program No. and press \checkmark to open. Demo as below:



.....



5.7.4 MONITOR

It is only for manufacturer to check the multihead weigher running condition, no need to revised.

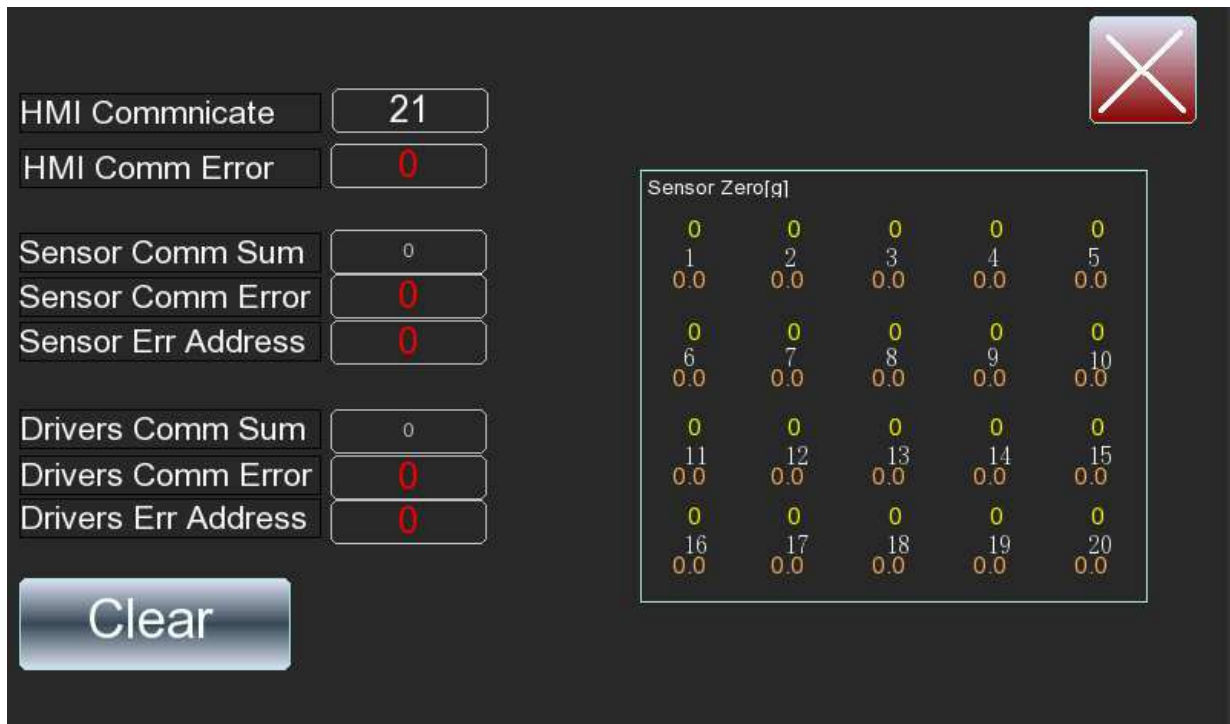



Chart 5-7-4-1

5.7.5 LANGUAGE

Select the language you need by Chart 5-7-5-1.



5.7.6 ALARM SYSTEM

Press  to enter alarm system, as 5-9-1 shows

In alarm system, when equipment failure happen and what the failure is can be checked, in order to help maintenance person find where the problem is quickly. Press “Reset Alarm” when failure is solved to recover system. Press “Delete All” can clear all failure record in alarm system.

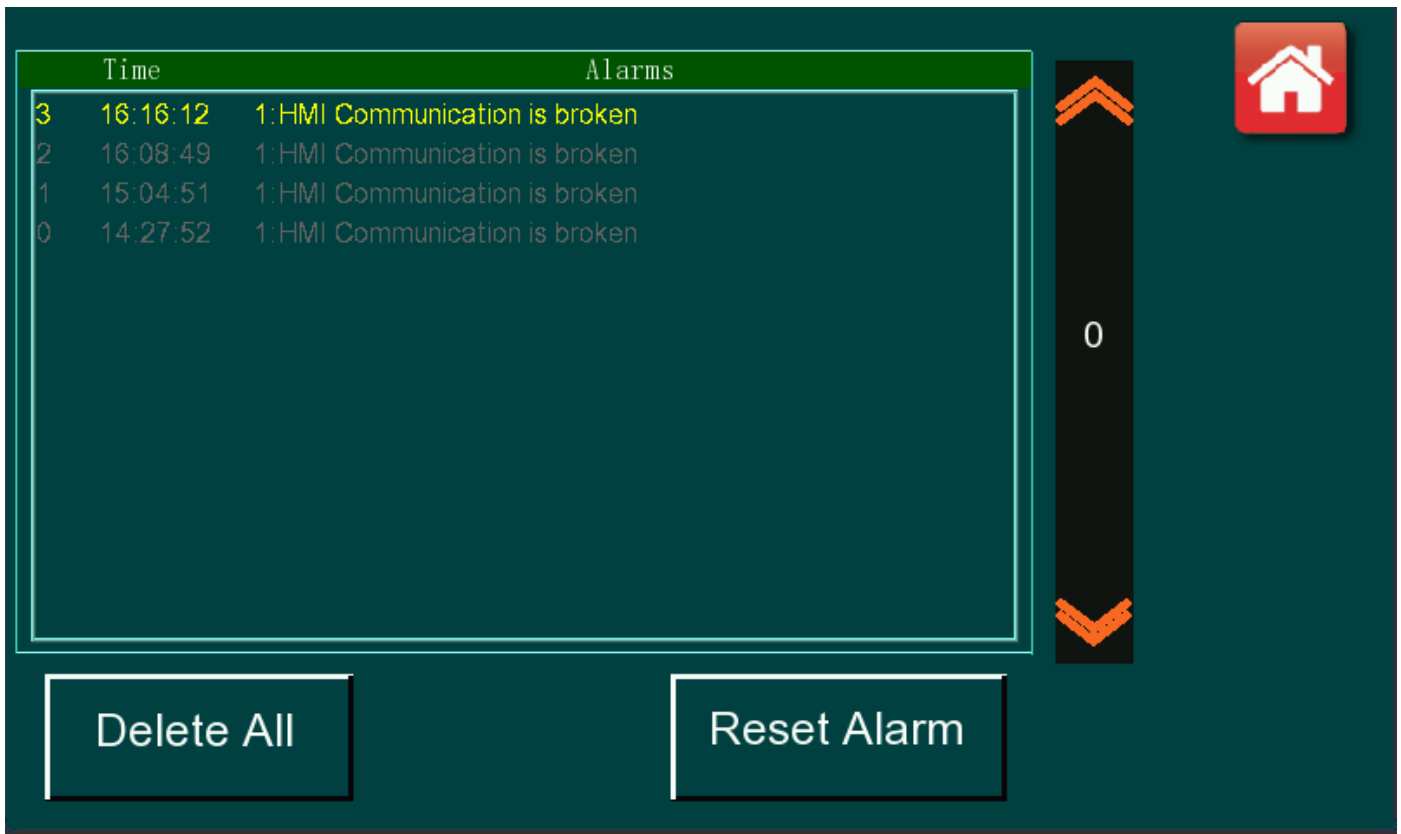


Chart 5-9-1

6. FAILURE SELF-DIAGNOSE & SOLVE

Icon	Reason	Check & Solve	Refer Page
U	Single hopper WGT is bigger than the target WGT	<ol style="list-style-type: none"> 1. AFC=0, reduce the "LIN AMP" 2. AFC=1, increase 'AV combination hoppers' 3. AFC=2, reduce the value of "AVG HP WT%" 4. Adjust the big LIN VB so that average feeding product. 	
Q	No combination & forced discharge	<ol style="list-style-type: none"> 1. Increase "Combined hoppers"; 2. Adjust AMP to ensure the single HP WGT is 25%-33% of the target WGT, and ensure the AV combination hoppers is 3-4 hoppers. 3. Reduce packaging accuracy under acceptable condition, increase "Over/under WT" 	
E	The WG HP is over 200g after zeroing.	<ol style="list-style-type: none"> 1. Empty the products on the weigh HP hanger; 2. Adjust "WG HP MOTOR MODE" to ensure all the products are discharged when the HP open; 3. Power off the machine and restart it after ensuring the above 2 points without abnormality, press C and start to run again; 4. Re-calibration. 	
e	Weigh Hopper with negative value in operation.	<ol style="list-style-type: none"> 1. Empty the products on the Weigh HP hanger; 2. Adjust "WG HP MOTOR Mode", ensure no product blocked when hoppers are closed. 3. Make a zeroing operation on the MANUAL TEST. 	
W	Failure in force combination on No combination times	<ol style="list-style-type: none"> 1. Increase "NO Combination times/Idle" ; 2. Set it within 0-09 (This function can be closed if the product won't be melted or can be un-sticky for a long time) 	
Y	Success in force combination on no combination times	<ol style="list-style-type: none"> 1. Increase "NO combination times/Idle" 2. Set it within "0-09". (This function can be closed if the product won't be melted or can be un-sticky for a long time) 	
Z	Auto zeroing	<ol style="list-style-type: none"> 1. Increase "ZERO INTERVAL" properly when the product is not sticky. 	
L	Less products in Weigh Hopper	<ol style="list-style-type: none"> 1. Increase AMP. 2. Reduce the SINGLE LESS WGT. 3. Increase LIN AMP to average feeding. 	
D	This HP is disabled.	Restart the hopper in MANUAL TEST menu.	
T	Failure in module communication.	<ol style="list-style-type: none"> 1. Some wrong with DC2 power switch. 2. Some wrong with QF2 breaker. 3. Check if P031-6 connected correctly. 	

Failure Check and Solve			
Failure	Possible Reason	Check and Solve	Refer Page
Suddenly no products discharge or power off in running	The power switch is off	<ol style="list-style-type: none"> 1. Check the power connected correctly. 2. Check if any loose wire terminals. 	
The difference between the displayed WT and the actual WT is too big	1.Zero over-floating	<ol style="list-style-type: none"> 1. Groundings should be secure 2. Recalibration 3. Increase "SAMPLE FILTER" 	
	2. The packed products are too heavy.	Set the Limit as a positive value	
	3. The packed products are too light.	Set the Limit a negative value	
	4. Products in WG HP are not discharged completely.	<ol style="list-style-type: none"> 1. Increase the motor pause time. 2. Increase the hopper delay time. 	
	5. Slow reaction of the load cell.	1. Reduce "SAMPLE FILTER" value	
Discharge with pause	Wait for the discharged hopper to combination	<ol style="list-style-type: none"> 1. Reduce "Combined Hopper" 2. Increase "Over/under WT" 	
The packing speed gets slower	Improper AFC setting	<ol style="list-style-type: none"> 1. In AFCT, "AV Comb HP" should be set 3-4 2. In AFCW, "SINGLE HP WGT" should be set within 25%-33% of the target WGT 	
Low Pass Rate	Poor combination	<ol style="list-style-type: none"> 1. Adjust AMP to make AV Comb HP within 3-4. 2. Increase "Over/under WT" 3. Adjust the vibrator to average feeding products. 	
Open hopper weakly	The opening speed of the motor is too fast.	Reduce the front move step speed in the motor mode setting.	
The hopper door close with noisy	The closing speed of the motor is too fast	Increase the back half motor move speed in the motor model setting.	
Open hopper several times	Fail in checking motor position	<ol style="list-style-type: none"> 1. If all motors like this, should check if the DC of 18V of DC2 is normal, or if lining of 34P ribbon wire is loose. 2. If individual motor likes this, should check if the relevant motor position board is normal. 	
Can't enter load cell calibration	Hardware lock is switched on	Set J1 on Mother position Boards as OFF to unlock	
Invalid displayer	Fail in communication	<ol style="list-style-type: none"> 1. If the earth line is connected. 2. If the displayer is connected properly 3. The switch power DC1 is normal or not. 4. QF1 is ON or OFF. 	

7. MAINTENANCE

The machine must be powered off during maintenance and inspection, and should be operated by trained technician. To ensure the normal operation, prolong the usage life and to exert the economic value, the daily maintenance should be well performed.

1. Untrained person is prohibited to dismantle this machine.
2. The parts contacted with products, like main vibrator pan, liner vibrator pans, feed hoppers, weigh hoppers, etc. should be cleaned after daily use.
3. Check before using the machine if any unrelated products are on weigh hopper. Clean out dusty on the hanger after using.
4. Lubricate the joints of each hopper with edible oil every 7 days.
5. Clean the dust inside the actuator every 2 months.

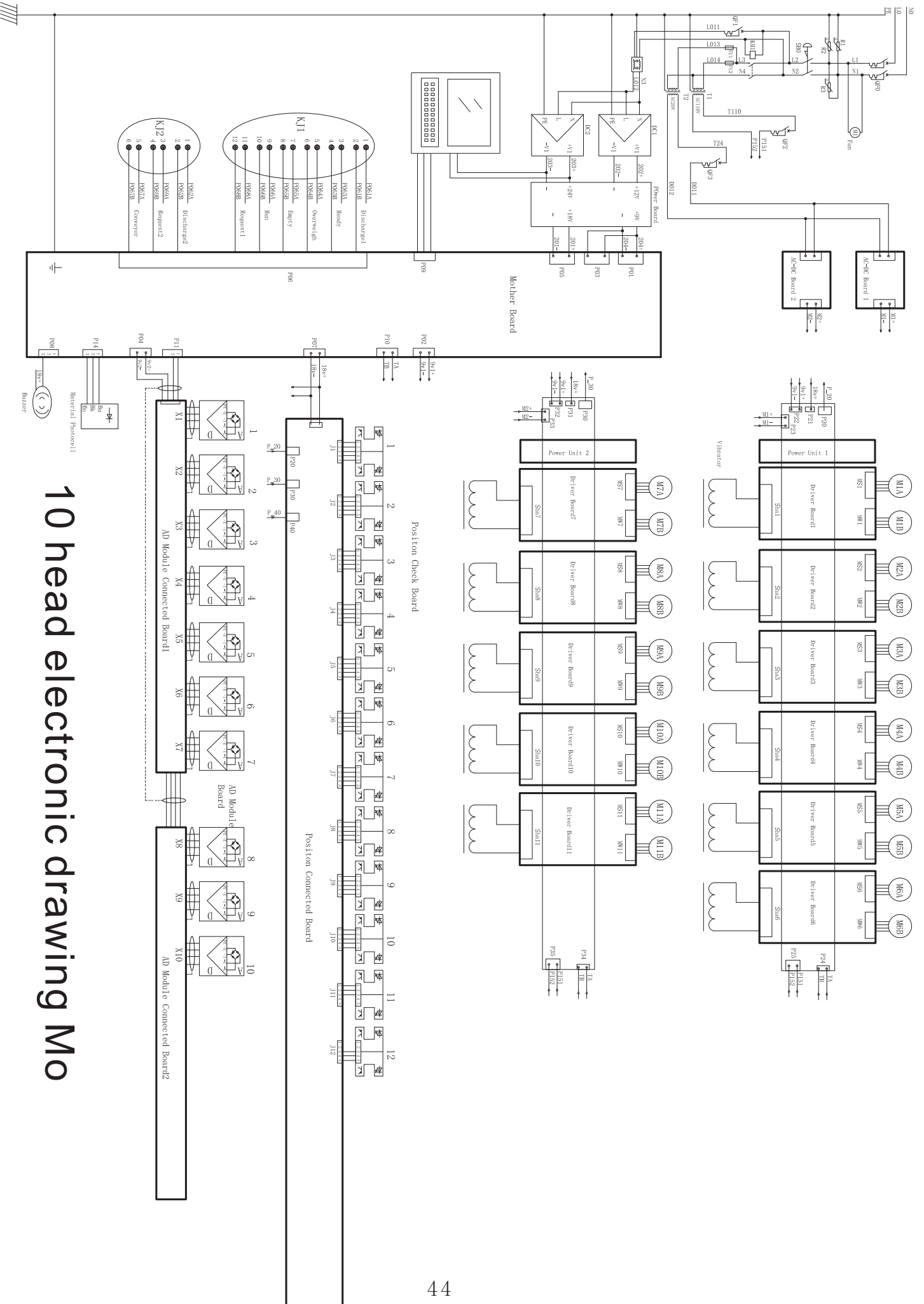
8. TRANSPORTATION & STORAGE

1. Transport, install and dismantle the vibrators carefully. No throwing, bumping or reversing. Prevent from strong vibration and raining.
2. Vibrator should be kept in ventilated room with temperature range of $-10^{\circ}\text{C}\sim 40^{\circ}\text{C}$, and without corrosive odors in the room. Humidity is no more than 90%.

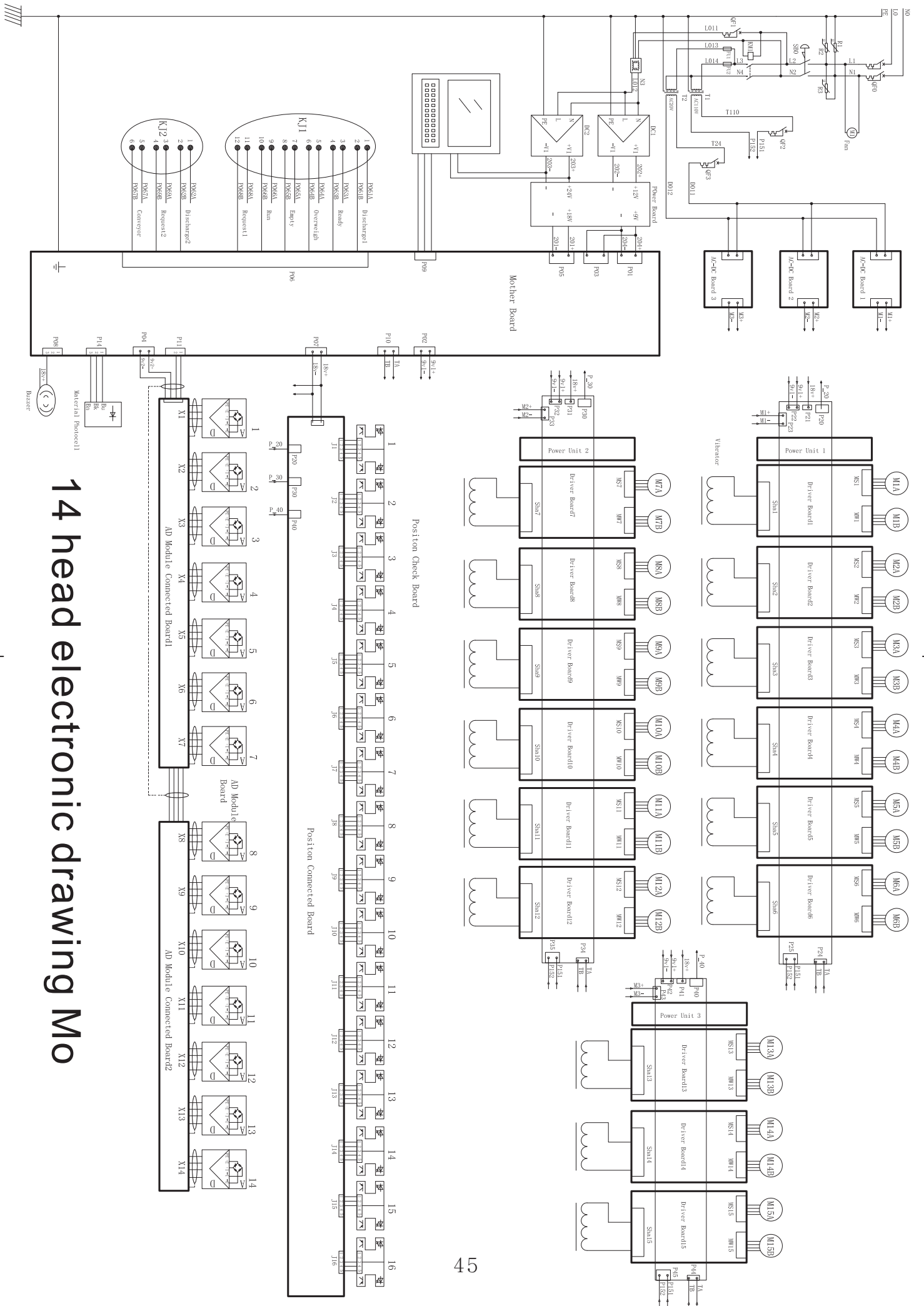
9. CRATE-OPENING AND CHECK

1. To avoid damage to the machine surface when opening the crate, the top cover board should be removed firstly, and then comes to the siding wooden boards.
2. Check if the following documents are attached with the machine:
 - ① Instruction manual;
 - ② Spare parts List

10. Electronic Diagram



10 head electronic drawing Mo



14 head electronic drawing Mo