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Chapter 1.Preface

Thank you for using HS-H Series Multihead Weighers.

HS-H Series Multihead Weighers are automatic weighing equipment by using Modular control system to achieve the high speed, accuracy and stable performance, different functions could be expanded according to customer’s requirements.

To ensure the proper use as well as safe operation, please read this instruction manual carefully before using.

Please keep this manual in proper place so that you can use it for maintenance or repair in future. If you have any problem while using our multihead weigher, please feel free to contact our service department, we will try our best to provide you a professional and all-round service.
Chapter 2. Notice

2.1 Model Instruction

HS - H10L1.6

- Hopper Volume (1.6L; 2.5L)
- Litre
- Heads (10 head, 14 head)
- H Series
- Abb. of Company Name

2.2 Working Environment

- Temperature: 0°C ~ 40°C;
- Humidity: 35% - 85% (No dewing);
- Power: AC 220V/110V ± 10%V 50Hz (60Hz);
- Keep away and shield off away from the disturb source;
- Installation place: On rigid, horizontal and no vibration surface;
- Earth line: Make sure the machine is connected to the earth;
- It works under aseptic and non-dust plant when packaging food products;
- Leave enough space around the machine for maintenance.
2.3 Transportation & Storage

- Only professional engineer is allowed to repair the machine when failure happens;
- Turn off the power before cleaning, moving and repairing the machine;
- To avoid body injury, it is prohibited to touch the hopper or pan while machine is running;
- No bumping or strong pressure on weigh hoppers;
- Direct current for the connection signals with other equipments (packing machine, conveyor, etc.) should be no more than 30V, the overloading current no more than 100mA.

2.4 Working Environment

- The machine should be treated carefully while transporting, installation and disassembling. No throwing, bumping or reversing. Prevent from strong vibration and raining.
- The machine should be kept in ventilated room with temperature range of \(-10^\circ C \sim 50^\circ C\), humidity no more than 80% and kept away from corrosion gas.
### Chapter 3. Specifications

<table>
<thead>
<tr>
<th>Machine Model</th>
<th>HS-H10</th>
<th>HS-H14</th>
<th>HS-H14L5.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Weigh Range</td>
<td>10-3000G</td>
<td>10-3000G</td>
<td>10-5000G</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 0.1 - ± 2.0G</td>
<td>± 0.1 - ± 2.0G</td>
<td>± 0.1 - ± 3.0G</td>
</tr>
<tr>
<td>Power</td>
<td>AC220V/110V ± 10% 50Hz(60Hz)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. Speed</td>
<td>70WPM</td>
<td>120WPM</td>
<td>70WPM</td>
</tr>
<tr>
<td>Weigh HP Volume</td>
<td>1600mL/2500mL</td>
<td>1600mL/2500mL</td>
<td>5000mL</td>
</tr>
<tr>
<td>Control System</td>
<td>Modular Unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Touch Screen</td>
<td></td>
<td>7inch touch screen</td>
<td></td>
</tr>
<tr>
<td>Packaging Dimension</td>
<td>1090L<em>1130W</em>1830H (mm)</td>
<td>1130L<em>1130W</em>1830H (mm)</td>
<td>2300L<em>1530W</em>1721H (mm)</td>
</tr>
<tr>
<td>Packaging Weight</td>
<td>420KG</td>
<td>480KG</td>
<td>800KG</td>
</tr>
<tr>
<td>Optional Parts</td>
<td>Dimple plate / Timing hopper / Diverter chute gates / 10 inch touch screen</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter 4. Working Theory

The product is fed to the upper storage funnel where it is dispersed to the feed hoppers by main vibrator pan. Each feed hopper drops the product into a weigh hopper beneath it as soon as the weigh hopper becomes empty.

The weigher’s computer determines the weight of product in each individual weigh hopper and identifies which combination contains the weight closest to the target weight. The multihead weigher opens all the hoppers of this combination and the product falls, via a discharge chute, into a packaging machine or, alternatively, into a distribution system which places the product, for example, into trays. The working principle of the multihead weigher is shown as chart 4-1-1.
Chapter 5. Operation

Our machine panel is friendly-use design. All functions will work within 0.5-1 second after be touched.

5.1 Start up

It will automatically enter into the language choice menu after turning on the machine, shown as chart 5-1-1.

![Chart 5-1-1](image)

Press password bar to input password, passwords be set as several level of authorities.

a) Level 0, no password, permit to enter Menu of “Manual Test”, “Record”, “Help”, ”Zero”, “Empty”, “Clean”, “Run”.

b) Level 1, Password: 138138, permit to enter all Menu except “System Setup”, “Calibration”;

c) Level 2, Password: 168168, permit to enter all Menu except “System Setup”;

d) Level 3, Password: 178178, permit to enter all Menu; it’s highest management of password;
Choose language and press the language button to enter the main menu, shown as chart 5-1-2.

![Main Menu](chart.png)

**Chart 5-1-2**

1. **Help**:
   - Press the "Help" where you can read explanation of parameters by checking its different page.

2. **Zero**:
   1) After turning on the machine, an attention of "PLS Press Zero" will be displayed on the main menu, which reminds that you must make manual Zero operation.
   2) Press "Zero", all feed hoppers and weigh hoppers will open in turn to empty the rest products in the hoppers. After 3 seconds, each load cell has an auto zeroing.
   3) After auto zeroing, the attention of "PLS Press Zero" will auto-disappear and display the current date and time on the screen.

3. **Empty**:
   - Press "Empty" to empty products. Main vibrator, linear vibrators, feed hoppers and weigh hoppers will run continuously to clear up the hoppers. Press "Empty" again to exit. To ensure the weighing accuracy, after the "Empty" operation stop, it will make Auto-zero again.

4. **Clean**:
   - Press "Clean", all hoppers will stay open at its maximum angle. Press "Clean" again to exit.

5. **Exit**:
   - Return to language choice menu.
5.2 Start to Run

On the main menu, press "Start to Run" to enter the menu "Run", shown as chart 5-2-1.

Chart 5-2-1

1. Preset Sp:
   Preset Speed: Set an expected speed for multihead weigher according to the actual packaging speed.
   The revised speed will be auto-saved after Exit.

2. Amplitude:
   Main AMP:
   Press central button, it will display a keyboard, Adjust the main vibrator amplitude at running status.
   The larger the value is, the stronger the vibration is. The revised main AMP will be auto-saved after Exit.

   Lin. AMP:
   Press the button of each hopper, Adjust the linear vibrator amplitude at running status. Press the button and it will display keyboard to change the value. Each amplitude can be adjusted independently. The larger the value is, the stronger the vibration is. The revised Lin AMP will be auto-saved after Exit. Range: 1-99.

   SET ALL:
   Set all linear amplitude at the same time.
3. Run:
Run or pause the machine.

4. Main Menu:
Return to "Main Menu". During running, you have to press "Pause" first.

5. Meaning of each Letters during menu “Run”

<table>
<thead>
<tr>
<th>Letter</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Be choose to combination;</td>
</tr>
<tr>
<td>D</td>
<td>Hopper be disabled;</td>
</tr>
<tr>
<td>E</td>
<td>Head modular control boards in communication error;</td>
</tr>
<tr>
<td>U</td>
<td>Single hopper weight exceed target weight and be forced to discharge;</td>
</tr>
<tr>
<td>L</td>
<td>Single hopper weight less than weight of “Average hopper weight %”</td>
</tr>
<tr>
<td>Q</td>
<td>Hopper which no combination will be forced to discharge;</td>
</tr>
<tr>
<td>R</td>
<td>Weight is ready;</td>
</tr>
<tr>
<td>T</td>
<td>Communication error for weighing modular;</td>
</tr>
<tr>
<td>Z</td>
<td>Auto zeroing;</td>
</tr>
<tr>
<td>A</td>
<td>In course of feeding material</td>
</tr>
</tbody>
</table>

Reminder: If “E”, “D”, “T” occurs, please go to chapter 9 to refer “Trouble shooting & Settlement”. Press “Run” again to stop running then press “Main Menu” to exit.
5.3 Calibration

Press "Calibration" on main menu to enter into "Calibration" menu, shown as chart 5-3-1.

Chart 5-3-1

1. Poise Wt(g):
   Input the real weight value of Poise which equipped with machine. Our standard poise is 500gram.

2. Hopper No.
   Input the number of hopper which should be calibrated.

3. Zero:
   Make sure there is no any products in weigh hopper, then press “Zero”, to make load cell conducting zeroing, if value display as 0.0g, Zero is successfully done.

4. Full:
   Put the poise in the weigh hopper gently and then press "Full" to confirm. Waiting 1~2 seconds, if value same as poise weight, Calibration is done successfully. When take away poise, the display value should be 0.0g±0.1g. Otherwise please do “Zero” and “Full” operation one more time.

5. How to make calibration:
   • Input the poise weight value,500g. Our standard poise is 500gram.
   • Input the number of hopper which should be calibrated, then press “ZERO” to conduct zeroing, waiting 1~2 seconds, if value display as 0.0g, Zero is successfully done. If not, try it again.
   • Put the poise in the weigh hopper gently and then press "Full" to confirm. Waiting 1~2 seconds, if value same as poise weight, Calibration is done successfully.
   • Repeat above operations to calibrate the rest of load cells.

Attention: Make sure there is no any products in weigh hopper. Calibration should be done in condition of airless and no vibrating environment.
5.4 Program Setup

On the main menu, press "Program Setup" to enter into the " Program Setup " menu, shown as chart 5-4-1.

1. Program No.:  
   Program No.: Choose the saved program number for different product. Range:1-99.

2. Prod. Name:  
   Products Name: Input the products’ name. (6 letters Maximum).

3. Target Wt:  
   Target Weight: The target weight of products. Unit is gram. Range: 3.0-6000.0g.

4. Over Wt:  
   Over Weight: The over weight limit of the weighed products. Range: 0.0~99.9g, Unit is gram.

5. Under Wt:  
   Under Weight: The under weight limit of the weighed products. Range:0.0~99.9g, Unit is gram.

6. Correct Wt:  
   Correct Weight: It used as a correct value when the combination weigher can not be calibrated amendatory value referring to the deviation between the actual weight and display weight. Actual weight= Displayed weight - Correct weight. Range:-50.0g~+50.0g, Unit is gram.

7. Preset Sp:  
   Preset Speed: Set an expected speed for multihead weigher. It can be set according to the working speed of the connected packaging machine.
8. Zero Interval:
Zero Intervals: The load cell performs zeroing automatically after N times combination. This function aims to remove error to ensure weighing accuracy. In Zero status, the hopper is cleared up and will not be taking into combination. (Range: 0-999 Minutes.)

9. Stable Tm:
Stable Time: After feed hopper closing, there is a stable time delay before system reading digital sensor to make sure the accuracy of weighing. The bigger the value is, the slower the weighing speed is. (Range: 80-255*10ms, Recommendation: 95-125*10ms)

10. Min HP WT%:
Minimum Single Hopper Weight(%): It is a percentage to be set. If single hopper weight is less than certain percentages of target weight, the hopper is not allowed to join combination and it needs feed more material. And this hopper can attend the combination when reaching the certain percentage. (Range: 5-99, Recommendation: 10-25)

11. IDLE:
No Combination Times: It refers to the times that the hopper not be combinated while running. If the times that the hopper uncombinated exceeds the IDLE times preset. That hopper will be combinated forcibly. This function can improve the using rate of weigh hoppers. (Range: 11-9999, Recommendation: 50-100)

12. Multicomb TMS:
Multi-combination Times: When target weight is large, it will be divided into several times to discharge. The timing hopper will open to dump the products into packaging equipment after collecting all the products from the multi-combination times discharging. This function aims to solve big target weight, to avoid product blocking or lower pass rate. (Range: 1-99)

13. Level Feed Tm:
Level Products Feed Time: It refers the photo cell detect less or no products on weigher, feeding signal will last the “Level Feed Tm” to output until photo cell detect product again. (Range: 1-99*1s, Recommendation: 5-10)

14. Lin VB Dly:
Linear Vibrator Feed Delay: It refers the time delay that linear vibrator to feed product to feed hopper after the feed hopper open. (If it is too short, products may be blocked in feed hopper, if it is too long, it will affect weighing speed.) (Range: 1-250*10ms. Recommendation: 10-35)

15. Feed HP Dly:
Feed Hopper Delay: It refers the time delay that feed hopper to feed products to weigh hopper after the weigh hopper open and releasing the product. (Range: 1-250*10ms. Recommendation: 10-35)
16. Weigh HP Dly:
Weigh Hopper Delay: It refers the time delay that the weigh hopper to dump products into the timing hopper after the timing hopper open. (Range: 1-250*10ms. Recommendation: 10-35)

17. Time HP Dly:
Timing Hopper Delay: It refers the time delay that the timing hopper to discharge products into the packaging machines after weigh hopper dumping the products to ensure all the materials in the timing hopper and then allow next discharge. (Range: 1-250*10ms. Recommendation: 55-90)

18. Dump Sgl Tm:
Dump Signal Time: It refers the duration time that multihead weigher send dump signal to packaging machine. (Range: 1-999*10ms. Recommendation: 10-30.)

Vibrator Settings
Press “Vibrator Settings” enter following menu, shown as Chart 5-4-2.

19. Main VB Feed Tm:
It means time that main vibrator acts. (Range: 20ms. Recommendation: 5-20.)

20. Lin VB Feed Tm:
It means time that linear vibrators act. (Range: 20ms. Recommendation: 5-20.)
21. Set All:

Press this button; change all settings of linear vibrator.

In Menu “Program Setting1”, Press “Next” to enter to “Program Setting2” menu, shown as Chart 5-4-3.

22. FD HP MD:

Feed Hopper Mode: It refers to the running model of the feed hopper motor. There are 4 patterns for choice. That is 0-3. The smaller the value is, the faster the speed is. (Recommend value: 0-2)

23. WG HP MD:

Weigh Hopper Mode: Set the motor pattern of weigh hopper. There are 4 patterns for choice that is 0-3. The smaller the value is, the faster the speed is. (Recommend value:0-2)

24. Tm HP MD:

Timing Hopper Mode: Set the motor pattern of timing hopper mode, there are 4 patterns for choice, that is 0-3. The smaller the value is, the faster the speed is. (Recommend value: 0-2)

25. FD HP Opn Tm:

Feed Hopper Open Time: After feed hopper open, there will be a "feed hopper open time" delay, and then the feed hopper will close to ensure all the products are discharged. (Range:1-999*10ms, Recommend value:1-20)
26. WG HP Opn Tm:
Weigh Hopper Open Time: After weigh hopper open, there will be a "weigh hopper open time" pause, and then the weigh hopper will close to ensure all the products are discharged. (Range: 1-999*10ms, Recommend value: 1-20)

27. Tm HP Opn Tm:
Timing Hopper Open Time: After timing hopper open, there will be a "timing hopper open time" pause, and then timing hopper will close to ensure all the products are discharged. (Range: 1-999*10ms, Recommend value: 1-20)

28. Single Pieces WT:
Single Piece Weight: The standard weight of single piece for uniform products which is applicable to calculate the combination weight to finish the target pieces.

29. Target Pcs:
Target Pieces: The target pieces of the weighing products.

30. Over Pcs:
Over Piece Limit: The allowable up limit of the weighed products

31. Under Pcs:
Under Piece Limit: The allowable down limit of the weighed products.

Notes:
0: It means to close this function. The amplitude can only be adjusted by manual;
1: AFCT, it adjust the amplitude according to the combined hoppers and it will give an auto adjustment to all linear vibrator amplitudes;
2: AFCW, it adjust the amplitude according to the single hopper weight and it will give an auto adjustment to the single linear amplitude, meanwhile, display the single amplitude.
----------------AFCT----------------

33. Avg Comb Hps:
Avg Combination Hoppers: It refers the average combination hoppers which are used in a successful combination weighing. (Range:0.1-9.9, Recommendation: 3.0-4.0 for 10head, 5.0-7.0 for 14head)

34. Acpt Comb Err:
Single Acceptable Combination Error Hoppers: It refers to the acceptable deviation of average number of combination hoppers. (Range:0.1-9.9, Recommendation:0.1~1.0)

35. Track Interval:
Track Interval: After N times successful combinations, it will give an auto adjustment to all linear amplitudes. (Range:0.1-9.9, Recommendation:1.0)

----------------AFCW----------------

36. Avg HP Wt%:
Single Avg Hopper Weight Percent: It refers to the ideal average weight of single hopper, and it was calculated as certain percentage of single combination weight. (Range:1~99, Recommendation: 20%-40%.)

37. ACPT HP Wt Err:
Single Hopper Acceptable Error Weight: It refers to the single acceptable hopper weight error during running. (Range:0.1~100.0, Recommendation:1.0-10.0g)

38. Track Interval:
Track Interval: After N times successful combinations, it will give an auto adjustment to the single linear amplitude. (Range:1~99, Recommendation: 10)

39. Stagger Dump Tm:
This function aims to puffy food, like chips. It means that, each hopper of this combination will take turns to discharge products via interval. Range 0-999*10ms.

40. Copy To:
Copy this Program to; The current parameter will be saved with another program number.
5.5 System Setup

Press "System Setup" on main menu to enter "System Setup" menu, shown as chart 5-5-1.

![Chart 5-5-1](image)

1. Signal Type:

To preset the models of receiving discharging signal received from the packaging machine. Range: 0-4.

- 0: Trailing edge of pulse with memory: If multihead weigher receive a signal when it is not ready, it will remember the signal and discharge to the packaging machine when it is ready.
- 1: Trailing edge of pulse without memory: If multihead weigher receive a signal when it is not ready, it will not discharge when it is ready until it receive another request signal.
- 2: Tension with memory: If multihead weigher receive a signal when it is not ready, it will remember the signal and discharge to the packaging machine when it is ready.
- 3: Tension without memory: If multihead weigher receive a signal when it is not ready, it will not discharge when it is ready until it receive another request signal.
- 4: Rising edge of pulse without memory. If multihead weigher receive a signal when it is not ready, it will not discharge when it is ready until it receive another request signal.

![Diagram](image)

ATTN: Pulse signal is effective when it connects and breaks.
Tension signal is effective once it connect.
2. Weighing MD:
  Weighing Mode: Selection between weighing and counting by pieces. There are two model, 0~1, Default value is 0.
  • 0: Weighing. Unit is gram.
  • 1: Counting by pieces. Unit is Pieces.

3. Top Cone MD:
  Top Cone Model: there are 4 model,
  • 0: Vibrator+ Photocell (For easy flowing granule products)
  • 1: Rotary+Photocell (For uneasy running products.)
  • 2: Vibrator+ Load Cell (For easy flowing granule products)
  • 3: Rotary +Load Cell (For uneasy running products.)

4. Tm HP Mode:
  Timing Hopper Mode: 0~3
  • 0: No timing hopper.
  • 1: The two doors of timing hopper open at the same time
  • 2: The two doors of timing hopper open by interval. (In the case of weigher connected with two packing machines. High speed packaging)
  • 3: The timing hopper + unqualified weight rejecter ,one door discharge to packing machine, the other discharge to overweight rejecter.

5. No Comb Action:
  No Combination Action: Select the processing ways in case of there is no any combination
  • 0: Auto enforced dumping. If there is no any combination always, the weigher computer will recalculate all combination and identifies the overweight closest to the target weight, discharge this overweight products and output the "Overweight“ signal.
  • 1: Manual intervention. The weigher will stop running automatically, and display the notice "Pls do manual intervention", after the status be settled down, the weigher computer will start to recombination.

6. Combn HPS:
  Combined Hoppers: If there is no qualified combination, it will decide if re-feed products to recombine, or make an enforced discharge according to the current actual combined hoppers.

7. Optimum:
  This function aims to achieve higher accuracy. An idealist combination will be selected to discharge among all qualified combinations. Range:1-99.
8. Starved Feeding Pause Delay:

When photocell detect no enough products on top cone, Weigher will stop within this Delay time until elevator start to feed products, then weigher will start to work automatically. Unit is seconds.

Model “0”, this function is disabled.

9. Free port (1.2.3.):

Please select corresponding Free Port function via pull-down menu:

Free Port 1 match Signal wire Y07&Y08
Free Port 2 match Signal wire Y11&Y12
Free Port 3 match Signal wire Y13&Y14

<table>
<thead>
<tr>
<th>Free port</th>
<th>Setting Value</th>
<th>Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>No output</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>Discharge 1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Discharge 2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Ready 1</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Ready 2</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>Feeding</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>Overweight 1</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>Overweight 2</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>Empty</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>Run</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>Pneumatic timing hopper</td>
</tr>
</tbody>
</table>

10. Combined Model:
11. Sys Management:

System Management: Press this button to enter menu “Sys Management”, shown as chart 5-5-2

In this menu, machine Version Number and Software Version Number can be tracked.

Attention: “Default set 1”, “Default set 2” and “A/D” are all default plant parameters. Please contact our factory for any parameter’s modification.

Press “Exit” back to Menu “System Setup”.

12. Password Setup

Press this button to enter menu “Password Setup”, Shown as Chart 5-5-3
A. Password for Program Setup: 138138; In case of customer want to reset password, please press “Exit”, the resetting password will work.

B. Password for Calibration: 168168; In case of customer want to reset password, please press “Exit”, the resetting password will work.

C. Password for System Setup: 178178; In case of customer want to reset password, please press “Exit”, the resetting password will work.

Password including 6 numbers, just input once is available.

Press “Exit” back to Menu “System Setup”.

13. Download:

After you change the parameters in the program setup, you have to press “Download” to upload the program in order to make the revised parameters work. Please press “Download” for at least 1 second until the gauge comes up.

14. Motor MD:

It is to set the running mode for different motors. Press “Motor MD Setup” enter “Motor MD Setup” menu, shown as chart 5-5-4.

![Motor MD Setup](chart5-5-4.png)
1) FD HP MD: Feed Hopper Motor: Press "FD HP MD", 4 modes to be choose. Range: 0.1.2.3.; Press “Download” to save new setting;

2) WG HP MD: Weigh Hopper Motor: Press "WG HP MD", 4 modes to be choose. Range: 0.1.2.3.; Press “Download” to save new setting;

3) TM HP MD: Time Hopper Motor: Press "TM HP MD", 4 modes to be choose. Range: 0.1.2.3.; Press “Download” to save new setting;

4) Init. Move DRCT: The rotary direction of front 5 moves (1~5).
   • 0: Clockwise rotary.
   • 1: Anticlockwise rotary.

5) Return Move DRCT: The rotary direction of return 5 moves (6~10).
   • 0: Clockwise rotary.
   • 1: Anticlockwise rotary.

6) 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°. Range: 0~100

7) Speed: The rotary speed for each step within the segment. Rang: 0~99, the value is bigger, speed is faster.

Attention: The total steps of Initial Move should be equal with Return Move.

8) Download: After you change the parameters, you must press "Download" to save the program, until then the revised parameters will work. Please press "Download" for at least 1 second until the guage comes up.

15. Prog. Recov:

Program Recovery: Press "Prog. Recov" until the guage window comes out. 1-15 sets of preset program can be recovered.
5.6 Record

On the main menu, press "Record" to enter the menu "Record", shown as chart 5-6-1.

1. Total Records: Maximum 2000 pages of records could be saved. Input number to track each record.
2. Display Record: Press the button and input record number to check the corresponding record.
3. No Record:
4. Date Search:
   - Press the button and it will display the number keys. Input the date, it will display the last record of that day.
5. Prev.: Show previous record.
7. Print:
   - Plug the USB memory card into the touch screen and press "Print", then it will turn the present record into JPG picture and be saved to the USB memory card. Then you can print it by computer.
8. Del. All:
   - Delete All Records: Press this button until the window comes out and the guage is over. Then all records will be deleted.
9. Main Menu: Press the button and return back to the main menu.
5.7 Manual Test

On the main menu, press "Manual Test" to enter the "Manual Test" interface, shown as chart 5-7-1. "Manual Test" is mainly to check the running condition of each part.

1. Motor. Sensor:

Motor Sensor: Press this button to detect step motor back to original position (clockwise 6 o’clock), if green light, means motor stay at original position; if red light, means motor not stay at original position. Outer circle of light indicate feeding hopper motors, inner circle of light indicate weighing hopper motors, center lights indicate timing hopper motors.

Chart 5-7-1

Chart 5-7-2
2. Main VB:
   Main Vibrator: Press any number button, then press “Main VB”, main vibrator act once;

3. Linear VB:
   Linear Vibrator: Press number button 1~10/14, means choose a vibrator, or press “Select All”, choose all linear vibrators, then press “Linear VB”, Linear vibrators will act once;

4. Feed HP:
   Feed Hopper: Press number button 1~10/14, means choose a feed hopper, or press “Select All”, choose all feed hopper, then press “Feed HP”, Feed hopper will act once;

5. Weigh HP:
   Weigh Hopper: Press number button 1~10/14, means choose a weigh hopper, or press “Select All”, choose all weigh hopper, then press “Weigh HP”, Weigh hopper will act once;

6. Timing HP:
   Timing Hopper: Press number button 1~2, means choose timing hopper open door by single side, or press “Select All”, choose timing hopper open door by two sides, then Press “Timing HP”, Timing hopper will act once;

7. Load cell
   Press this button to test the status of A/D module. Shown as Chart 5-7-3, choose number button 1~10/14, long press at least 1 second to make zeroing.

![Chart 5-7-2](image)

Note: 0.0 hopper weight in green means load cell modular in good signal communication, 0.0 in red means signal communication in error.
1. Disable HP:
   Disable Hopper: Press this button and then select the number key to inhibit the corresponding hopper.
   Once the hopper is inhibited, \( \text{R} \) will change to "D". Long press the number key again to activate the hopper and "D" will change to \( \text{R} \). This function is mainly applied to repair the failure hopper.

2. Once Run:
   Press this button and then select the number key. The selected hopper will run once with the process of main vibrator → linear vibrator → feed hopper → weigh hopper → timing hopper. Press "M" to select all hoppers. If you keep pressing the "FULL" button, they will run continually. Press "Once Run" again to exit.

3. Cont. Run:
   Continuous Running: Press this button and then select the number key. The selected hopper will run continuously with the process of main vibrator → linear vibrator → feed hopper → weigh hopper → timing hopper. Press "FULL" to select all hoppers. Press "Cont. Run" again to exit.

4. Test Run:
   Press this button, Weigher will run according to present parameter without real material. In this condition, requested signal will input and other signal can be output/input to test signal communication between weigher and packaging machine.
### Chapter 6. Trouble Shooting & Settlement

#### Bad Accuracy

<table>
<thead>
<tr>
<th>Fault reason</th>
<th>Trouble shooting and Settlements</th>
</tr>
</thead>
</table>
| 1. AV Combi HP too much or too small | 1. Adjust Amplitude or vibrating time, make AV Combi HP as 3–5 (10head) 5–7 (14head)  
2. Adjust the height of upper funnel, make sure enough product spreading on linear feeding pans, but prevent overloaded  
3. If use AFC, set AV Combi HP as 4  
4. If use AFCW, set Min HP WT%: as 25 |
| 2. Product feeding unevenly | 1. Feeding conveyor capacity not enough  
2. Product feeding uncontinuously, adjust Starve feeding Delay |
| 3. AV Combi HP too small | 1. Increase AV Combi HP will rise the accuracy while will slow down the speed |

#### Bad Accuracy

<table>
<thead>
<tr>
<th>Fault reason</th>
<th>Trouble shooting and Settlements</th>
</tr>
</thead>
</table>
| 1. Zero over floating, Load cell data jumping | 1. Airless working space  
2. Weigher should be put on horizontal level, supporting frame should be stable  
3. Weigher should be surely grounded  
4. If sticky product, auto-zero tracking time should be reduced |
| 2. OverWT or UnderWT in actual weight | 1. Overweight: set Correct WT as minus  
Under weight: set Correct WT as plus  
2. Recalibration |
| 3. Products be clamped by hopper | 1. Increase Hopper delay time  
2. Increase Hopper open time |
| 4. Products stick or be blocked on hopper hooks | 1. Check weighing hopper be touched by anything  
2. Check any products stick in weighing hoppers |
<p>| 5. Parameter Setting | 1. Increase Stable time |</p>
<table>
<thead>
<tr>
<th>Slow speed</th>
<th>Fault reason</th>
<th>Trouble shooting and Settlements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Parameter Setting</td>
<td>1. Increase Preset Speed</td>
<td>1. Increase Preset Speed</td>
</tr>
<tr>
<td></td>
<td>2. Adjust Stable Time, Stable Time suggest value as 100-120</td>
<td>2. Adjust Stable Time, Stable Time suggest value as 100-120</td>
</tr>
<tr>
<td></td>
<td>3. Decrease Delay Time, meanwhile make sure products couldn’t be clamped</td>
<td>3. Decrease Delay Time, meanwhile make sure products couldn’t be clamped</td>
</tr>
<tr>
<td>2. Request Signal Input not on time</td>
<td>1. Check weigher has send ready signal but not input Request Signal on time</td>
<td>1. Check weigher has send ready signal but not input Request Signal on time</td>
</tr>
<tr>
<td>3. Dumping uncontinuously</td>
<td>1. Products feeding not enough, products spreading level unevenly, lead to bad combination rate</td>
<td>1. Products feeding not enough, products spreading level unevenly, lead to bad combination rate</td>
</tr>
<tr>
<td></td>
<td>2. Linear Amplitude setting too small, hopper of “L” too much, lead to quantities of Average Combination Hoppers too much</td>
<td>2. Linear Amplitude setting too small, hopper of “L” too much, lead to quantities of Average Combination Hoppers too much</td>
</tr>
<tr>
<td></td>
<td>3. OverWT or UnderWT setting too small, lower combination rate</td>
<td>3. OverWT or UnderWT setting too small, lower combination rate</td>
</tr>
<tr>
<td></td>
<td>4. Target weight setting too large lead to bad combination rate</td>
<td>4. Target weight setting too large lead to bad combination rate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hopper Status</th>
<th>Symbol</th>
<th>Meaning</th>
<th>Trouble shooting and Settlements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R</td>
<td>Ready</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>Hopper Disabled</td>
<td>1. In Manual Test, set “Disable Hopper”</td>
</tr>
<tr>
<td></td>
<td>E</td>
<td>Failure in Unit head control Modular</td>
<td>1. Check power supply of Unit head control Modular; cables and wires be well connected</td>
</tr>
<tr>
<td></td>
<td>T</td>
<td>Failure in communication of weighing Modular</td>
<td>1. Check COM connector well connected or not</td>
</tr>
<tr>
<td></td>
<td>U</td>
<td>Single hopper weight exceeds the target weight</td>
<td>1. In case of AFC=0, decrease the “LIN AMP”. Lin AMP, make sure products be dispersed evenly</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. In case of AFC=1, increase “Avg Comb Hps”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. In case of AFC=2, decrease the value of “Avg HP Wt%”</td>
</tr>
<tr>
<td></td>
<td>Q</td>
<td>No Comb Trm be dropped enforcedly</td>
<td>1. Increase “AV Comb HP”, Increase OverWT or UnderWT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Adjust Amplitude, make sure single weighing hopper weight as 25<del>35% of target weight, and set AV Comb HP as 3</del>4(10head), 5~7(14head)</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>Current Combination that be chosen</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Z</td>
<td>Auto Zero</td>
<td>1. For easy running products, increase “AUTO ZERO” accordingly</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>Product Feeding</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 7. The Meaning of the Indicated Color & Character

<table>
<thead>
<tr>
<th>NO.</th>
<th>Color</th>
<th>Character</th>
<th>Meanings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Purple</td>
<td>C</td>
<td>Be choose to combination</td>
</tr>
<tr>
<td>2</td>
<td>Black</td>
<td>D</td>
<td>The hopper is disabled</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>E</td>
<td>Head modular control boards in communication error</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>U</td>
<td>Single hopper weight exceeds target weight and be forced to discharge</td>
</tr>
<tr>
<td>5</td>
<td>Light Blue</td>
<td>L</td>
<td>Single hopper weight is less than the preset “Min Single Hopper Weight”</td>
</tr>
<tr>
<td>6</td>
<td>Yellow</td>
<td>Q</td>
<td>Being forced to dump due to no combination</td>
</tr>
<tr>
<td>7</td>
<td>Green</td>
<td>R</td>
<td>AD card in good communication before running</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ready for combination during running</td>
</tr>
<tr>
<td>8</td>
<td>Light Red</td>
<td>T</td>
<td>Error in AD card communication</td>
</tr>
<tr>
<td>9</td>
<td>Blue</td>
<td>Z</td>
<td>Auto Zeroing in the running</td>
</tr>
<tr>
<td>10</td>
<td>Azury</td>
<td>A</td>
<td>Feeding products</td>
</tr>
</tbody>
</table>
Chapter 8. Remarks of P1 & P2 Cable

[Diagram of P1 and P2 cable connections]

- Y01: Discharged 1
- Y02
- Y03
- Y04
- Y05
- Y06
- Y07
- Y08
- X01
- X02
- Y09
- Y10
- Y11
- Y12
- Y13
- Y14
- Y15
- Y16
- X03
- X04
Chapter 9. Crate-Open & Check

9.1 Check the machine and spare parts under guide of Packing List.

9.2 Check if the following documents are attached with the machine:

① Instruction manual.
② Packing List.
③ Installation manual.

9.3 To avoid damage to the machine surface as opening the crate, the top cover board should be removed firstly, then remove the siding wooden boards carefully.
Chapter 10. Machine Structure

10.1 Main Components

<table>
<thead>
<tr>
<th></th>
<th>Component</th>
<th></th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Upper Storage Funnel</td>
<td>8</td>
<td>Discharge Chute</td>
</tr>
<tr>
<td>2</td>
<td>Main Vibrator Pan</td>
<td>9</td>
<td>Machine Frame</td>
</tr>
<tr>
<td>3</td>
<td>Main Vibrator</td>
<td>10</td>
<td>Discharge Funnel</td>
</tr>
<tr>
<td>4</td>
<td>Linear Vibrator Pan</td>
<td>11</td>
<td>Timing Hopper/Bucket</td>
</tr>
<tr>
<td>5</td>
<td>Linear Vibrator</td>
<td>12</td>
<td>Touch Screen</td>
</tr>
<tr>
<td>6</td>
<td>Feed Hopper</td>
<td>13</td>
<td>Actuator</td>
</tr>
<tr>
<td>8</td>
<td>Weigh Hopper</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
10.2 External Specification

1. Packaging Dimension:
   - HS-H10 1090L*1130W*1830H (mm)
   - HS-H14 1130L*1130W*1830H (mm)
   - HS-H14L5.0 2300L*1530W*1721H (mm)

2. Packaging Weight:
   - HS-H10 420KG
   - HS-H14 480KG
   - HS-H14L5.0 800KG

3. Installation Size:
   - HS-H10 Shown as chart 10-2-1
   - HS-H14 Shown as chart 10-2-2
   - HS-H14L5.0 Shown as chart 10-2-3

Chart 10-2-1
10.3 Main Components

1. Weigh Hopper Installation
   Shown as chart 10-3-1, put the fixed plate close to the retainer bracket and then put the upper support bar in the upper position slot and push down until the lower support bar is in the lower position slot. Check and make sure the hopper is on stale position after mounted.
2. Feed Hopper Installation
   Please refer to the installation instruction of weigh hopper.

3. Linear Vibrator Pan Installation
   Linear Vibrator Pan: Shown as chart 10-3-2, loosen the locking handle, slanting insert section "a" of the Vibrator Pan to section "b" of the Vibrator. Level the Vibrator Pan and tighten the locking handle.
   NOTICE: Each Linear Vibrator Pan should be well installed without bumping with each other.