

Instruction Manual

AWM-L01 Liquid Weighing Dispensing Filling Machine

Instruction Manual

Version 1.0

1. Overview

This liquid weighing machine is designed to dispense the liquid by weight. Key features are below:

1). Universal design for different dispensing projects. For traditional dispensing systems by time, user may need to adjust the dispensing time for different types of liquid or different liquid pressure. Dispensing by weight can eliminate all these time related factors for better accuracy and user-friendly.

2). Automatic dispensing mode for easy use. Exclusive automatic mode can sense the placement of new container, auto-tare the weight of the container and auto-dispense by your set weight. It will auto-zero when you remove the container from the scale. User don't need to press any keys during the whole process.

3). Memory feature. User can store up to 4 pre-set dispensing set values in the machine for future use.

2. Specifications

Capacity	4 Kilogram (8.8 lb)
Readability	1 Gram (28.3 oz)
Accuracy	3 Gram (85.0 oz)
Unit of Measurement	Gram
Operating Environment Temperature	32 ~ 120°F (0 ~ 50°C)
Store Temperature	14 ~ 140°F (-10 ~ 60°C)
Power Cord Length	3 ft (1 m)
Water Intake Pipe Length	55.0 inch (1.4 m)
Water Outlet Pipe Length	17.5 inch (0.45 m)
Pump Type	Diaphragm
Maximum Flow Rate	3.5 liter per minute (118 fluid ounce per minute)
Power Supply	110 ~ 220V AC, 50/60 Hz
Dimension:	7.1 x 7.1 x 3.9" (180 x 180 x 100 mm)
Tray Size	4.7 x 7.0 (120 x 180 mm)
Warranty	90 days

3. Front Panel

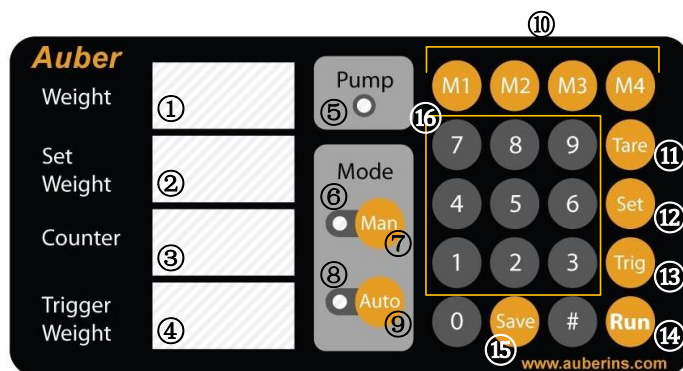


Figure 1. Front Panel.



Figure 2. Right side panel.



Figure 3. Back panel.

- ① Weight: the measured weight value (unit: g).
- ② Set Weight: the target weight of the liquid to be dispensed (unit: g)
- ③ Counter: the total count of how many times liquid has been dispensed since last power up.

- ④ Trigger Weight: the threshold-weight to start liquid dispensing.
- ⑤ Pump Indicator: the red LED lit up when pump is working.
- ⑥ Manual Mode Indicator: the red LED lit up in manual mode
- ⑦ Manual Mode key: press to select manual mode
- ⑧ Automatic Mode indicator: the red LED lit up in automatic mode.
- ⑨ Automatic Mode key: press to select automatic mode.
- ⑩ M1 / M2 / M3 / M4 key: Memory keys: press to recall the saved Set Weight value.
- ⑪ Tare key: press it to tare the scale.
- ⑫ Set key: edit or save the dispensing Set Weight.
- ⑬ Trig key: edit or save the Trigger Weight.
- ⑭ Run key: press to start or pause the dispensing process.
- ⑮ Save key: save the current Set Weight value to the selected memory slot (M1 ~ M4).
- ⑯ 0 ~ 9 Keypad: keypad to enter numeric values.
- ⑰ Power Switch: flip it to turn ON or OFF the machine.
- ⑱ Pump Speed Dial: turn the dial clockwise to increase pump speed; turn the dial counterclockwise all the way to turn off the pump.
- ⑲ Liquid Intake Tubing: this end of the tubing should be placed in the source container of the liquid.
- ⑳ Liquid Dispensing Tubing: this end of the tubing should be connected with a nozzle and pointing to the receiving container.
- ㉑ Pipe Supporting Arm: the rack help to hold the pipe in place while dispensing liquid.

4. Assembly

In addition to the weighing machine itself, several parts are included in the package (see Figure 4, Figure 5, and Figure 6).



Figure 4. Weighing tray.



Figure 5. Black supporting arm.



Figure 6. Clear extension arm for supporting arm (top), three pairs of screws and nuts to mount the extension arm (lower left), and two dispensing nozzles (lower right).

1). Placement. Find a stable, vibration-free, and horizontal surface to place this weight machine. This is critical to get accurate and repeatable weighing results.

2). Install the supporting arm. Remove two screws on the back of the machine (highlighted by red circles in Figure 7), align the screw holes on the supporting arm with the screw holes on the machine, then install these two screws back (Figure 8).



Figure 7. Remove two screws before installing the supporting arm.



Figure 8. Supporting arm installed.

3). (Optional) If the black supporting arm is not high enough, please mount the clear extension arm to the weight machine first, and then install the black supporting arm to that extension arm. Two additional sets of screws and nuts also included in the package. Please see Figure 9.

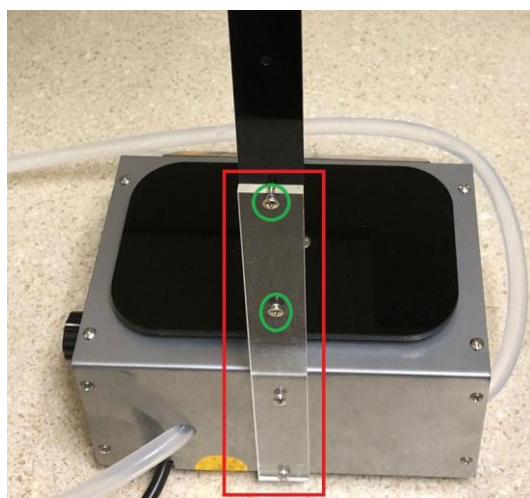


Figure 9. Mount the clear extension arm (highlighted in red) to increase the total height of the supporting arm.

4). This supporting arm comes with multiple holes to mount the dispensing pipe. Based on height of your container, find the suitable mounting hole on the supporting arm, then pull the outlet pipe out of the support bar from the back to the front position. Leave about 2-inch (50 mm) distance between the outlet pipe end and the supporting arm.



Figure 10. 2-inch distance between the supporting arm and pipe end.

4). Install the nozzle at the end of the outlet pipe end. Place the white tray over the black measuring board on the top of the machine.



Figure 11. Nozzle at end of the outlet pipe (highlighted in red). White tray over the black measuring board (highlighted in green)

Note:

For the first timer user, it is normal that the built-in pump cannot suck the water out. It is because that the pump is already dry out inside during the transportation. You can add some water to the intake pipe of the machine, change to manual mode and press RUN key to force pumping the water.

5. Operation

5.1 Set Weight

Set Weight decides the total liquid you want to dispense. Press Set key once, then enter your target **Set Weight**, then press Set key again to confirm.

For example, to dispense 500g liquid, press Set key once, enter 5 0 0, then press Set key again to confirm.

5.2 Trig Weight

Trig Weight is the empty container weight to trigger the automatic dispensing process in automatic mode. Press Trig key once, then enter your target container weight, then press Trig key again to confirm.

For example, to set 15g as container weight, press Trig key once, enter 1 5, then press Trig key again to confirm.

Note: Trig Weight needs to be **equal or less** than the actual container's tare weight, and **above 0 g** all the time. In automatic mode, after a new container is placed, if the weight of that container is equal or over this Trig Weight value, dispensing process will be started automatically.

5.3 Manual Mode Operation

Step 1: Enter Set Weight as section 5.1.

Step 2: Press manual mode key (Man Key) once to enter manual mode. Manual mode indicator will be ON. (Manual mode is the default operation mode after power-up).

Step 3: Place a new empty container on the scale. Weight display will show the current container weight.

Step 4: Press Tare key to tare the container weight. Weight display will show 0.

Step 5: Press RUN key to start the dispensing process.

Step 6: Once it reaches your set weight, dispensing process will be stopped.

Step 6. Remove the dispensed container. Place another empty container on the machine for the next cycle of dispensing process.

5.4 Automatic Mode Operation

Step 1: Enter Set Weight as section 5.1, and Trig Weight as section 5.2

Step 2: Press Automatic mode key (Auto Key) once to enter automatic mode. Automatic mode indicator will be ON.

Step 3: Place a new container on the scale. After several seconds, machine will tare the container weight by itself (Weight display will show 0), then dispensing process will be started automatically. Once it reaches your set weight, dispensing process will be stopped.

Step 4: Remove the dispensed container, after several seconds, machine will automatically zero the weight display (Weight display will show 0). Place a new empty container and the new dispensing cycle will be started.

Note: In automatic mode, if the dispensing process is not working, it could be due to that the previous dispensing cycle has not been completed yet. You can remove the current container, then press Tare key once to reset.

5.5 Save dispensing set weight.

Four memory keys are available: M1, M2, M3 and M4. These keys can be used to store up to four different set dispensing weight numbers to the memory. These keys can also be used to recall the saved numbers to the "Set Weight" display.

To store new dispensing weight number to the memory, press SAVE key momentarily, then "Set Weight" display will be flashing. Enter your target set weight you want to save, then press one of four memory keys. "Set Weight" display will stop flashing.

To recall the dispensing weight number from the memory, press the target memory key momentarily.

6. Error Discussion

Based on test, using small nozzle and setting to 60% pump flow rate can achieve minimum error (by dispensing purified water). The actual result of dispensing may not exactly match your set value. The error could be due to:

- 1). The water pressure may cause that the actual dispensing weight is smaller than the set weight.
- 2). When dispensing process is ended, the residual water from the pipe may drop down to the container, which will cause that the actual dispensing weight is larger than the set weight.

Suggestions to reduce error:

- 1). Two outlet pipe nozzles are included: Large nozzle will provide smooth water flow, less splash, but big dispensing error. Small nozzle will provide higher water pressure.
- 2). There is a dial on the right side of the machine, which can be used to adjust the speed of water flow. The larger set number is, the faster the water flow. Dial it to 100 will be dispensing at full speed. Dial it to 1 will be dispensing at slowest speed. Dial it to 0 will turn off the pump.
- 3). User can also offset the Set Value on the machine to compensate actual error value. This error is related to the nozzle size and the pump flow rate setting. And this error will remain unchanged if you change your set weight. For example: Assuming you want to dispense 100g liquid. If your set weight is 100g but your actual weight you get is 95g, you can increase the set weight by 5g (total 105g), so the actual weight will be close to 100g. To dispense 300g liquid, you can change set weight to 305g.

7 Dispensing Compatibility

- 1). The dispensing container must be upright container. Container with small opening may not be compatible.
- 2). Dispensing media must be pure liquid, which cannot explode nor crystallize, nor precipitate.
- 3). Dispensing media cannot be viscous liquid like cream, paste nor honey.
- 3). Dispensing media cannot be explosive liquid like gasoline nor diesel.
- 4). Dispensing media cannot be corrosive liquid.

8 Safety & Maintenance

- 1). For the first-time user, it is recommended to dispense purified water for test run, to check the system's functionality and capability.

2). This system is not water-proof. Ensure the internal components away from any liquid or high humidity environment. Ensure that the surface of the machine is dried off after coming into contact with liquid. Do not use the device in environments with a risk of corrosion. Do not flood the device or submerge it in liquid.

3). Do not use this machine in hazardous environment. Only authorized personnel are allowed to operate this machine.

4). Ensure the power outlet for this system is securely grounded.

5). Check the power cable regularly for any damage.

6). Avoid falling loads, shock loads as well as potential impacts.

7). Avoid placing any load on the top of the machine, if no longer in use.

9. Advanced setting:

Warning: The following settings are advance user only. Please DO NOT change them unless you are very familiar with this machine.

5.6 Disable auto-tare function (automatic mode)

Turn OFF the machine then turn it ON. Press automatic mode key quickly and press & hold Key Num 3, until you hear the beep sound inside of the machine. Then auto-tare function is disabled (even you reboot the machine). To enable automatic tare function again, repeat this process.

5.7 Change the delay time before auto-tare function (automatic mode)

In automatic mode, by default, after you place the empty container on the scale, 0.8s later, the machine will automatically tare the weight of the actual container. You can change this 0.8s delay from 0.1s to 9.9s. Here are the steps:

Turn OFF the machine then turn it ON. Press automatic mode key then press SET key quickly. Use numeric keypad to enter the delay time. Valid input range is 1 to 99, 1 is for 0.1s, 99 is for 9.9s. Press SET key again to confirm, then press and hold Num 1 key until you hear the beep sound inside of the machine. The new setting will be valid even you reboot the machine.

5.8 Change the delay time before auto-zero function (automatic mode)

In automatic mode, by default, after the current dispensing process is completed, 0.8s later, the machine will automatically zero the weight display. You can change this 0.8s delay from 0.1s to 9.9s. Here are the steps:

Turn OFF the machine then turn it ON. Press automatic mode key then press SET key quickly. Use numeric keypad to enter the delay time. Valid input range is 1 to 99, 1 is for 0.1s, 99 is for 9.9s. Press SET key again to confirm, then press and hold Num 2 key until you hear the beep sound inside of the machine. The new setting will be valid even you reboot the machine.

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