

# RESIDENTIAL SOFTENER

## User Manual

Please read this manual in details before using the product and keep it properly in order to consult in the future!

Take RL-R50/M8A3 as an example

0WRX.466.735  
Rev.A.2104

Dear users:

Thank you for choosing this residential softener (hereinafter referred to as softener)! In order to let you correctly understand the installation and use of this softener and take full advantage of its excellent performance, please read this manual carefully and keep it properly.

Thanks for your cooperation!

### Special tips for users

- In order to ensure the correct use of this softener, please be sure to contact our company's authorized after-sales service provider for installation and maintenance, otherwise the company will not be responsible for accidents caused by installation and maintenance.
- Before any operation on this softener, please read and understand the manual carefully.
- This softener must use the components or accessories of our company or high-quality manufacturers, otherwise our company will not bear any responsibility for the quality problems, reduced performance or loss of property caused by this.
- It is forbidden to install the softener in a place where it may be frozen, exposure to direct sunlight or rain. At the same time, the softener cannot be installed in reverse or upside down. Please make sure the pipeline connection is correct.
- There should be a reliable floor drain within 1 meter of the softener installation.
- Please do not disassemble or modify the softener by yourself, otherwise it may cause the water leakage or electricity leakage, fail to work normally, or even cause a safety accident.
- It is not allowed to place heavy objects, corrosive or heat-dissipating items on the softener, so as not to damage the softener, causing the water leakage and electricity leakage, which may cause safety problems and property losses.
- When the softener is in service or regeneration, keep the drain pipe unblocked. If the length of the drain pipe is longer than 2 meters, when it can not drain the water normally that caused by blocked drain pipe, power failure or other failures, it will cause abnormal salt absorption, filling to the brine tank, even water leakage, please close the inlet valve of the softener immediately.
- If you encounter power failure during the regeneration process or artificially cut off the power supply, the drain pipe will always drain, so when encounter a power failure, please close the inlet valve of the softener immediately to avoid loss.
- When the machine fails, please quickly cut off the water source and power supply, and contact the after-sales service for maintenance in time.
- Regularly check the softener and water pipe fittings for leaks to avoid the property loss.
- Regularly check whether the power supply and wires are loose or damaged to avoid major accidents caused by leakage.
- Please use the granulated salt special for softener regeneration to avoid poor effect.
- The process of using this product requires power, please make sure that the power supply is in a place where water cannot reach.

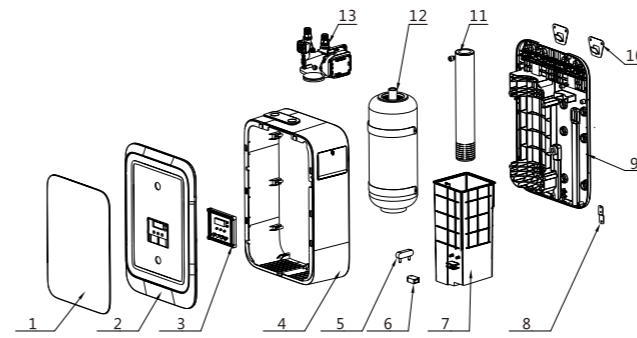
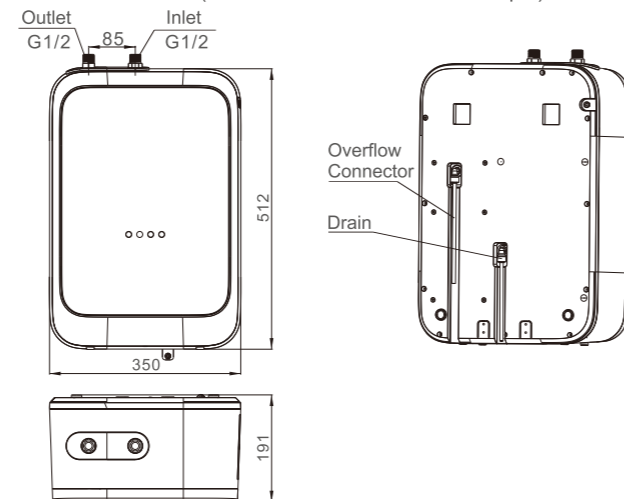
### 1. Product Overview

#### Functions and Characteristics

- This product is a new product carefully developed by our company. It is used with a water heater and has the effect of softening water quality, providing users with a comfortable bathing environment.
- Use the side cover to add salt to be convenient for daily use.
- With softening hard water, adding salt, service, regeneration reminder functions, providing users with convenient and comfortable product.
- Adopt the structure design of high-precision ceramic core integrated water valve and high temperature resistant resin tank, which ensures product safety and reliability.

#### Product Parts

Product Dimensions (Take RL-R50/M8A3 as an example)



Note: To improve product performance, it is without prior notice if product parts are changed, please refer to the actual product.

01. Glass panel    02. Front shell    03. Display board    04. Middle shell  
05. Water leakage monitoring sensor    06. Salt level monitoring sensor  
07. Brine tank    08. Fixed monopod    09. Behind shell  
10. Hanging board    11. Brine well and brine valve    12. Resin tank  
13. Control valve assembly

#### Technical Parameters

Appearance Size (mm)	350*191*512 (RL-R50/M8A3)	350*195*512 (RL-R50/M8B3)	349*189*510 (RL-R50/M8C3)
Net Weight (without water) (kg)	11 (RL-R50/M8A3)	10.3 (RL-R50/M8B3)	11.3 (RL-R50/M8C3)
Water Pressure (MPa)	0.1-0.4		
Water Temperature (°C)	It is recommended to use normally at a temperature of 5-50°C, and the maximum temperature should not exceed 75°C.		
Electrical Facility	Input	220V~/50Hz	
	Output	12V~/150mA	
Water Treatment Material	Na cation exchange resin		
Salt for Regeneration	Special salt for softener		
Rated Flow (L/h)	600		
Water Treatment Capacity (L)	(900) <sup>1</sup> (700) <sup>2</sup>		
Drain	1/4		
Inlet/Outlet	G1/2		
Resin Volume	4.8L		
Inlet Water Quality	Municipal tap water complying with GB 5749-2006 "Sanitary Standards for Drinking Water"		
Outlet Water Quality	Meet the requirement of "Sanitary Safety and Function Evaluation Regulation of Water Treatment Device for Drinking Water-General Water Treatment Device" (2001).		
Executive Standard	QB/T 4698-2014 "Residential and Other Relative Application Water Softener"		
	GB 4706.1-2005 "Safety of Residential and Similar Electrical Appliances Part 1: General Requirements"		

- A. The parameters in the table are laboratory data. If there is any change, no further notice will be provided.  
B. Water treatment capacity: The program has built-in conventional and economical regeneration modes. The default is economical type. The water treatment capacity in economical mode is relatively less, but with the same 2.5kg of salt, the total water treatment capacity in economical mode is more than 20% higher than the conventional mode, which is relatively more salt-saving. If this parameter needs to be adjusted, it needs to be set by professionals.  
C. Note: In the whole process of residential softener regeneration, please use water below 50°C for regeneration.

### 2. Installation and Use

#### Installation Method

##### 1. Preparation

This softener must be installed by professional installers!

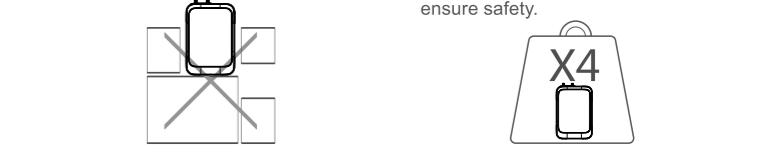
- The professional installer prepares the installation tools and necessary inspection instruments.
- Check whether the softener is intact and the files and accessories are complete.
- Read this manual carefully to understand the function, use method, installation essentials and installation method of the softener.
- Use a pressure gauge to check the water pressure in the water pipe. The inlet water pressure is required to be in the range of 0.1-0.4MPa. If it is lower or higher than this range, you need to install a booster pump or a pressure reducing valve (sold separately).
- Test the raw water hardness.
- Before installation, please turn off the main inlet water valve and cut off the power supply.

#### 2. Notice

- The softener cannot be installed above appliances that have caught fire, such as gas stoves, microwave ovens, washing machines with plastic cases.
- Avoid places where flammable gas may leak or environments with strong corrosive gas.
- Avoid places where strong electricity and strong magnetic fields directly act.
- Avoid direct sunlight, rain and wind.
- Try to avoid places where vibration easily occurs.

- Try to shorten the connection length of the drain pipe of the softener, so as not to affect the brine draw effect or cause the risk of water leakage.
- There must be a sewer or floor drain near which the waste water can be discharged to avoid draining nowhere.

- In order to facilitate heat dissipation and be convenient for future maintenance, machine moving, etc., a certain space must be reserved for the installation location of the softener.
- The load-bearing capacity of the installation surface should not be less than 4 times of the total weight of the softener after being filled with water, otherwise the user needs to install a support stand under the softener to ensure safety.

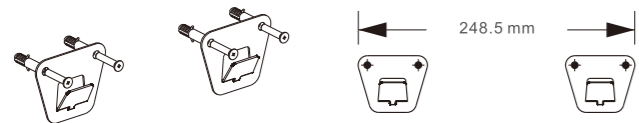


#### 3. Installation

- There are two installation types for the softener: wall-mounted and under-cabinet. Before installation, assist the user to select the installation position of the softener. There must be a good floor drain near the installation location.
- When the softener is working, please ensure that the inlet and outlet pipes are unblocked. There must be a gap (10cm) between the drain pipe and the sewage. The drain pipe could not be connected to the sewer directly to prevent the vacuum negative pressure from causing the controller to fail to work or the sewage to flow back to the softener.
- The machine is recommended to be installed at the front of the water heater to achieve a good bathing experience.
- Close the cold and hot water outlet valve, remove the cold water valve and water heater inlet switch. (Pay attention to prevent scalding due to hot water flowing out.) Connect the cold water valve to the inlet of the softener with a connecting pipe, and then connect the outlet of the softener and the inlet of the water heater with the connecting pipe. A filter screen needs to be installed in the pipeline in front of the inlet of the softener.
- Determine the length of the drain pipe (the length of the drain pipe should not exceed 2 meters, too long may cause no brine draw). Use a pipe wrench to cut the drain pipe of the appropriate length, insert one end into the quick connector of the drain outlet, and insert the other end into the sewer. Need to keep the drainage smooth; open the hot and cold switch valve.
- Set the current time, regeneration time and hardness after completing the installation, refer to the interface operation instructions.

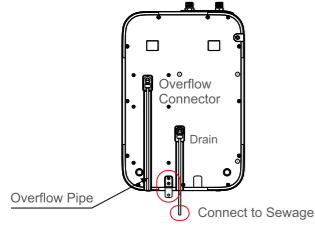
#### 4. Installation of wall-mounted type

- Install the hanging board  
Take out the fixed hanging boards and mark the screw fixing position on the wall, and drill the holes with  $\phi 8\text{mm}$  drill at the positions marked on the wall. The two hanging boards should be on the same horizontal line, and the distance between the two hanging boards is 248.5mm.



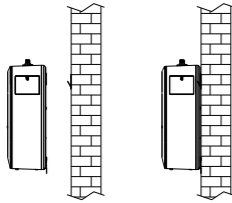
(2) Install fixed monopod

Take out the fixing monopod and install it at the bottom of the back of the machine; pull out the PE pipe on the drain of the softener, and cut the PE pipe of suitable length (the length of the PE pipe depends on the distance between the drain and the sewage). One end is inserted into the drain, and the other one end is inserted into the sewage.



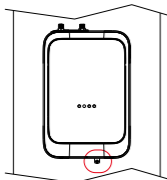
(3) Keep the machine fixed

Hang the softener on the two fixed hanging boards, and move the softener down against the wall to ensure that it is hung to the root of the hanging boards to make sure the softener is firmly fixed.



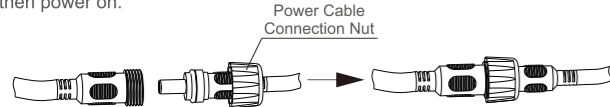
(4) Keep the support stand fixed

After the machine is hung and straightened, drill a hole with a depth of at least 40mm with the  $\phi 8$ mm drill in the fixed hanging board position at the bottom of the machine, and drive the expansion screw and expansion tube into the hole to make the machine completely fixed.

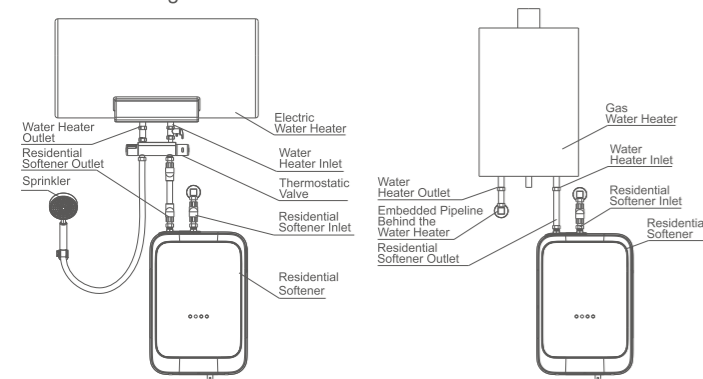


(5) Power cable installation

Insert the adapter into the power port of the softener, tighten the waterproof connector, and then power on.



5. Installation Diagram



Installation Diagram of Supporting Electric Water Heater

Installation Diagram of Supporting Gas Water Heater

Remarks: Thermostatic valve needs to be purchased separately.

5. Trial running

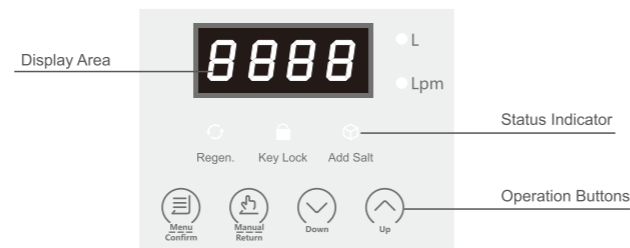
- After confirming that the water connection is correct, user must confirm that the water source and power supply are normal before you conduct trial operation.
- Turn on the power and open the inlet valve of the softener to check whether the water can flow out normally from the outlet of the water heater.
- Check whether the display area and the touch buttons can work normally.
- The residential softener is in the bypass position when it leaves the factory. In the unlocked status, short press the manual key to switch to the service status, that is, the status when the regeneration light is off.

6. After-sales personnel explain to users

Introduce and explain to the user the necessary knowledge about the use and maintenance of the softener.

Usage

1. Operation panel



(1) Description

- Current time, remaining soft water (L), flow rate of outlet (Lpm), etc. will be displayed in display area.
- Regeneration indicator: When the softener turns to regeneration status, this indicator keeps lighting. When remaining soft water (L) drops to zero, the machine will start regeneration at 1:00 am of the day.
- Button Lock indicator: The buttons will be locked automatically if there is no operation in 1 minute, and the keeps lighting. Press and hold and at same time for 5 seconds to unlock the buttons.
- Remind to add salt indicator: When lack of salt, remind to add salt indicator will keeps flickering, the buzzer will keep reminding from 7:00 am to 20:00 pm every day, which will buzzing 5 times in each period, and keeps 30 seconds, until finish the adding salt.

(2) Operation methods

1. Foreground parameter setting

The foreground parameters need to be set after the residential softener is installed. If there is no setting, the user experience will decrease when using the residential softener.

2. Background Parameter Setting

The background parameters are those reasonably designed or tested by the manufacturer, and it is not recommended to modify them. If you modify the parameters without the approval of the manufacturer, you will be responsible for the consequences.

① Factory Mode Setting

Factory mode setting: Connect to the power again after power off, press and hold and buttons at the same time to enter the background parameter setting. Press or to select the parameter. Save it after confirmation. The parameters are as follows: Factory mode - - and - -, please confirm whether the selected mode is correct.

② Background Parameter Setting Method

- Connect to the power again after power off, and press and at the same time to enter the background parameter setting. The following is the meaning of each parameter.
- TDS mode - , this mode is used as a backup program and needs to be equipped with TDS probe: C01 means close, C02 means open;
  - Regeneration modes selection: - is the conventional type, - is the economical type. There are currently 2 built-in modes;
  - Regeneration time: : that the regeneration program will start at 1:00 AM by default.
  - Brine refill time setting interface: : , different regeneration modes have different brine refill time;
  - Backwash time setting interface: - , digital means backwash time, and the unit is minute.
  - Brine draw & slow rinse time setting interface: - , digital means brine draw & slow rinse time, and the unit is minute.
  - Fast rinse time setting interface: - , digital means fast rinse time, and the unit is minute.

A. Set the time

In the status of unlock, press enter into the current time enquiry interface. Then press to enter into current time setting interface. Press or to set the hour value when it flickers, and then press enter into the minute setting interface. Press or to set the minute value when it flickers. Press again to save the data and back to enquiry interface. It will turn back to enquiry interface directly without saving the data if press in setting interface.

B. Set hardness value

In the status of unlock, press to choose enquiry interface of hardness (default is 150), and then press again to turn to setting interface. Press or to set the raw water hardness, and then press to save the data and back to enquiry interface. It will turn back to enquiry interface directly without saving the data if press in setting interface.

C. Regenerate manually

In the status of unlock, press to enter into manual regeneration mode, press again to switch to next regeneration status.

D. Water leakage protection (Display PE): When the machine probe detects that there is water, the system will switch to the bypass station, that is, the inlet and outlet are directly connected.

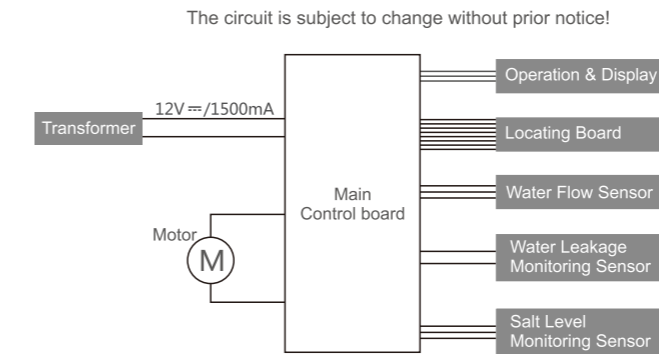
Lifting the water leakage protection status: After cleaning the water, press and hold the down key to return to the water use status.

Note: This function is mainly to protect the resin tank or the connection part of the control valve and resin tank from water leakage, which does not protect the valve or the machine behind the softener from water leakage. Please be aware!

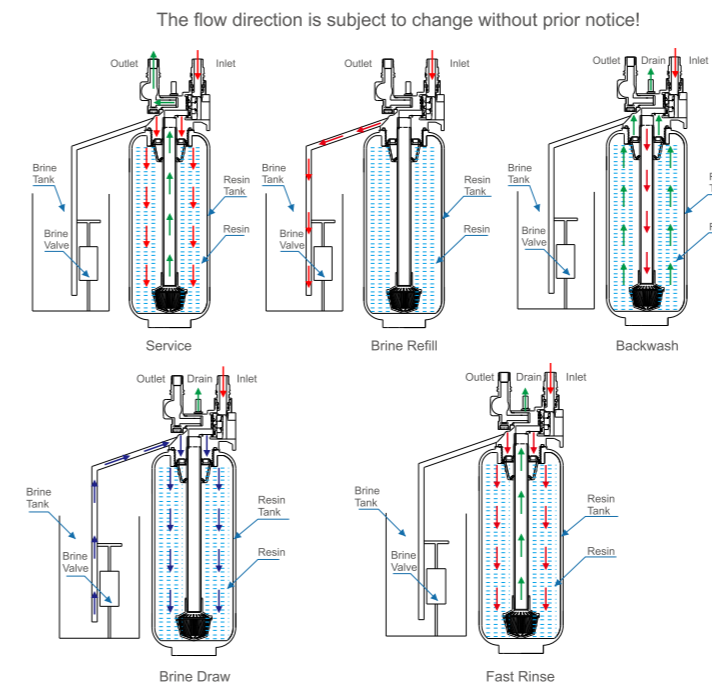
Runlucky Factory Default Program

Item	Parameter	Remark
Factory Mode	-RL-	Runlucky
TDS Mode	C01	Close
Regeneration Modes	D01	Conventional type
Regeneration Time	01:00	Water available drops to zero, will start regeneration at 1:00 AM that day.
Brine Refill Time	b440	440 seconds
Backwash Time	2-01	1 minute
Brine Draw & Slow Rinse Time	3-20	20 minutes
Fast Rinse Time	6-06	6 minutes

Electrical Principle Chart



Water Flow Direction Principle Chart



3. Trouble Shooting

Common Failures and Solutions

Problem	Cause	Correction
Leakage	No o-ring installed or assembly not tight.	Install o-ring and tighten the connection.
Water flow rate decreased	Strainer blocked.	Clean strainer and install front filter screen.
Outlet water unqualified	Resin invalid.	Regenerate resin.
	Resin lifetime expired.	Replace resin.
	Regeneration effect is not good.	Check whether the salt absorption is not smooth caused by the block of DLFC or injector.

Regeneration effect is not good	Do not use the special regeneration salt.	Use the special regeneration salt.
	The drain is blocked.	Clean the drain line flow control.
	The injector is blocked.	Check and clean the injector.
	The filter screen of injector is blocked.	Open the injector and clean the filter screen.
E1 flashes	Water pressure is too low.	Install the booster pump.
	Motor failure.	Replace motor.
	Control board failure.	Replace control board.
E2 flashes	Locating board failure.	Replace locating board.
	Moving disk stuck.	Clean the substance between moving disk and fixed disk.
	Wiring of locating board is bad.	Replace the locating board wiring.
E3 flashes	Control board failure.	Replace control board.
	Locating board failure.	Replace locating board.
PE flashes	There is water leakage inside of softener.	Disassembly the front cover and check for leaks.
Regeneration time is not correct	Incorrect settings or power failure or loose power cable.	Reset the regeneration time.

If the above-listed faults are caused by the softener itself, it should be repaired by professionals authorized by our company.

4. Repair and after-sales service

Accessory List

Accessory	Picture	Q'ty	Accessory	Picture	Q'ty
Transformer		1 pc	User manual		1 pc
Hanging board		2 pcs	Expansion tube		6 pcs
Chamfer head tapping screw		6 pcs	Drain pipe		3 m of 1/4" PE tube
Fixed monopod		1 pc	Pan head tapping screw		3 pcs
Washer for filter screen		2 pcs	Installation diagram		1 pc

The above accessory pictures are only for reference, be subject to the real products.

Maintenance

Maintenance instructions for softener

- The softener needs to be regularly added with salt during use to ensure the performance of resin regeneration to soften tap water.
- The effective life of the filter material of this softener is 4 years. It is recommended to replace the filter material every 4 years to ensure the softening effect.

△ Note:

- This softener is only suitable for household use, not suitable for public places with large water consumption.
- If the softener is not applicable for a long time (more than 12 months), please inform our after-sales personnel to replace the filter material so that the softener can immediately exert the best performance when it is used again.
- The maintenance of this softener and the replacement of filter materials are paid services.

After-Sales Service

If your softener has exceptional situation and cannot be used normally, please refer to "Trouble Shooting" to check and deal with them one by one. If you still can't troubleshoot or have any questions, please contact our after-sales service department, thank you for your cooperation!

Our company reserves the right to modify and improve the product. The above technical parameters and appearance structure are subject to change without prior notice!