

WCS45KG Whole House Central Softener

INSTALLATION INSTRUCTIONS & OPERATING MANUAL Ver. 02/2021



Copyright ©2005-2021 ISPRING WATER SYSTEMS, LLC. All rights reserved.



We stand behind our products

Since 2005, iSpring has been dedicated to providing high-quality drinking water to families across the United States. We provide various residential faucets and water filtration systems that purify your water in everyday life and deliver pure, healthy, and tasty water to you and your family.

At iSpring, we strive to develop products to the highest of standards and aim to make excellent drinking water accessible for all households. With affordable pricing, reliable quality, prompt delivery, and top-notch customer service, we hope to assist in bringing you great water for years to come.

Prior to Installation

Read this instruction manual carefully prior to installation.

Keep this manual readily available for future reference.

Table of Contents

User Information & Guidelines.....	3
Dimensions.....	4
Product Operation & Specifications	5
Before You Start	6
Material Details.....	7
<u>Installation</u>	
Installation Requirements.....	9
Installation Instructions.....	11
<u>Using the System</u>	
Programming the Central Softener System.....	15
WCS45KG Whole House Central Softener Operation.....	20
Care for Your Central Softener.....	23
Troubleshooting	25
<u>Warranty</u>	
Warranty Registration	27

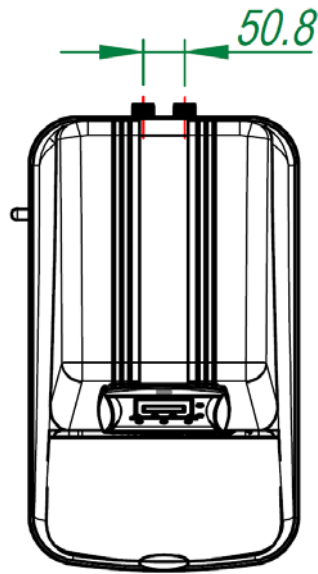
User Information & Guidelines

Users must adhere to the installation specifications described in this Product Installation and Operation Manual (hereinafter referred to as the “instruction manual”). iSpring is not responsible for damage, loss, or injury resulting from neglect, improper maintenance, or unauthorized modification of products.

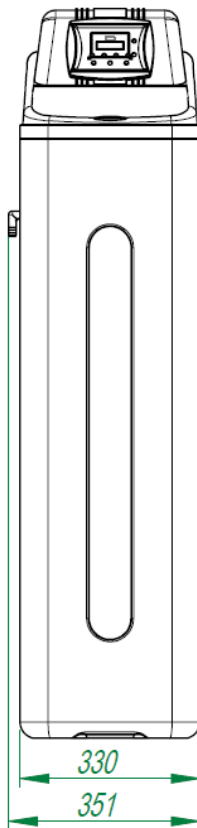
- The unit should be placed only on flat surfaces. Do not mount on a wall.
- This product is designed for residential use only. Contact iSpring customer service to inquire about usage in non-residential settings.
- The operating temperature range is 33.8°F – 102.2°F. If the water temperature or ambient temperature falls below 33.8°F, immediately shut off the inline water supply, turn off the inline water adapter, and drain the remaining water from the system. Failure of the water supply line or water purifier may result in malfunction, damage, and possible injury to the enclosure or water supply line.
- In case of malfunction due to damage or failure of the power supply system, unplug the system immediately and contact iSpring customer service for guidance.
- If leaking occurs, shut off the inline water supply by turning off the adapter. Then unplug the system and contact iSpring customer service.
- Use only authorized iSpring parts. Using unauthorized or aftermarket components will void the product warranty.
- This product is equipped with built-in systems to prevent internal leaks and minimize the risk of water damage. However, it is recommended that users check external fittings and connections regularly to ensure all components are secure and operating properly.
- Unauthorized modification and disassembly are strictly prohibited and will void the warranty.
- Never touch the power cord connector when your hands are wet as this may result in electric shock.

Dimensions

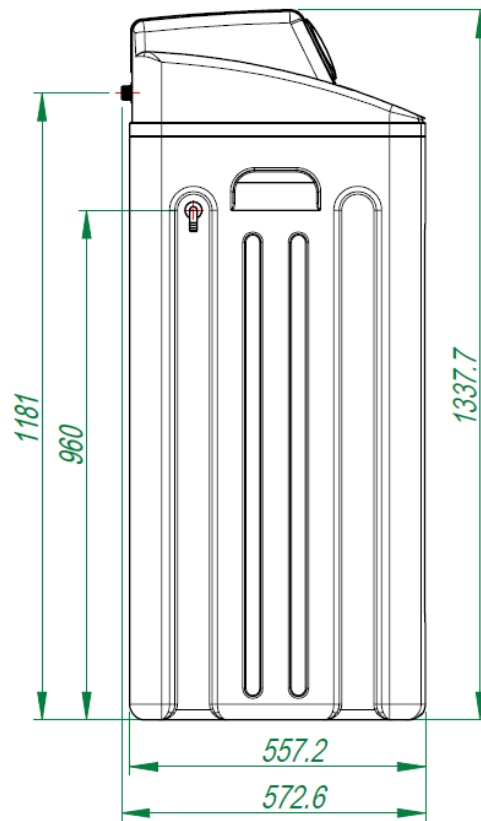
TOP VIEW



SIDEVIEW



FRONTVIEW



- Note:all dimensions are in millimeters unless otherwise specified.

Product Operation & Specifications

SPECIFICATIONS	
Working Pressure Limits (min./max.)	20~50 psi (0.14 ~ 0.35 MPa)
Water Temperature Limits (min./max.)	33.8~102.2 °F (1~39 °C)
Required Riser Pipe Diameter	1.050 inch(26.7mm)
Electrical Adapter	Input: AC120V, 60Hz Output: AC12V~650mA
Pressure Tank Thread	2.5" NPSM
Inlet/Outlet Connector	1" NPT
Rated Service Flow Rate	8 GPM (30 L/min.)
Peak Flow Rate	26 GPM
Capacity	45000 grain

*Independent 3rd party laboratory test data.

Testing was performed under standard laboratory conditions, though the actual performance of the system may vary based on local water conditions and quality.

Before You Start



Warning

- This system can only be used with 120V/60Hz unidirectional AC power.
- Do not place objects on top of the power cord and set the unit in an area where the power cord will not be stepped on or tripped over.
- Electric shock hazard: do not overload sockets or extension cords.
- If there is smoke, abnormal odor, or abnormal noise coming from the machine, immediately unplug the system's power to avoid fire or electric shock.
- Do not touch the plug with wet hands to prevent electric shock.



Note

- Product installation and use must strictly comply with the requirements of this manual. Do not perform any operation on the product without first reading and understanding the contents of this manual.
- Activation of this product indicates that the owner has carefully read, understood, and accepted the contents of this manual, including the safety notices and instructions.
- Failure to operate the product in accordance with this manual may result in product damage, water leakage, water seepage, injury, or other losses.

For questions or concerns, call **1-678-261-7611**, email **Support@123filter.com**, or visit **www.ispringfilter.com/support**.

Material Details

1. Inspect packaging for the following components:

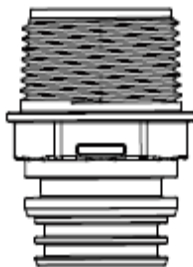


One machine and these accessories are included:

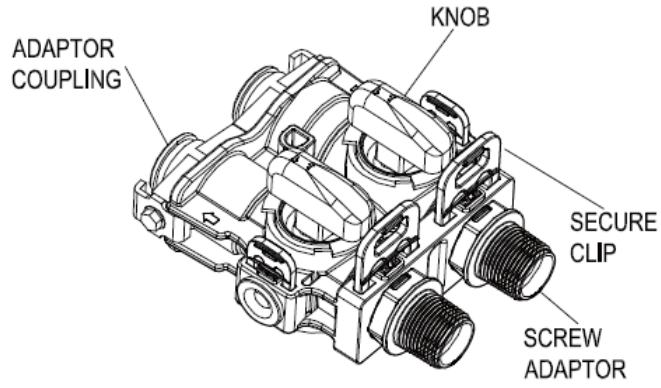
- ① power adapter (white box, 1 pcs.)
- ② sewage and overflow pipe (a translucent pipe, 1 pcs.)
- ③ stainless steel clamps (in the PE bag, 2 pcs.)
- ④ hex key (in the PE bag, 1 pcs.)
- ⑤ connect screws NPT1M (in the PE bag, 2 pcs.)
- ⑥ O-rings (in the PE bag, 2 pcs.)
- ⑦ grease (in the PE bag, 1 pack)

2. Inlet/Outlet Screw Adaptor:

Connect Screw NPT1M

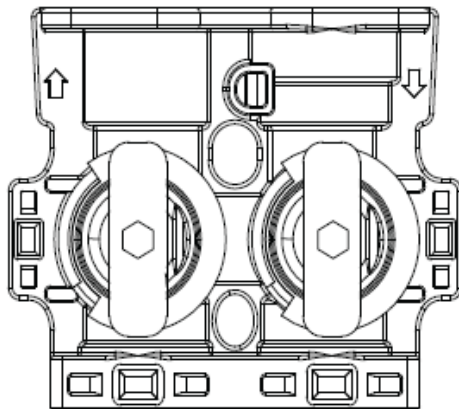
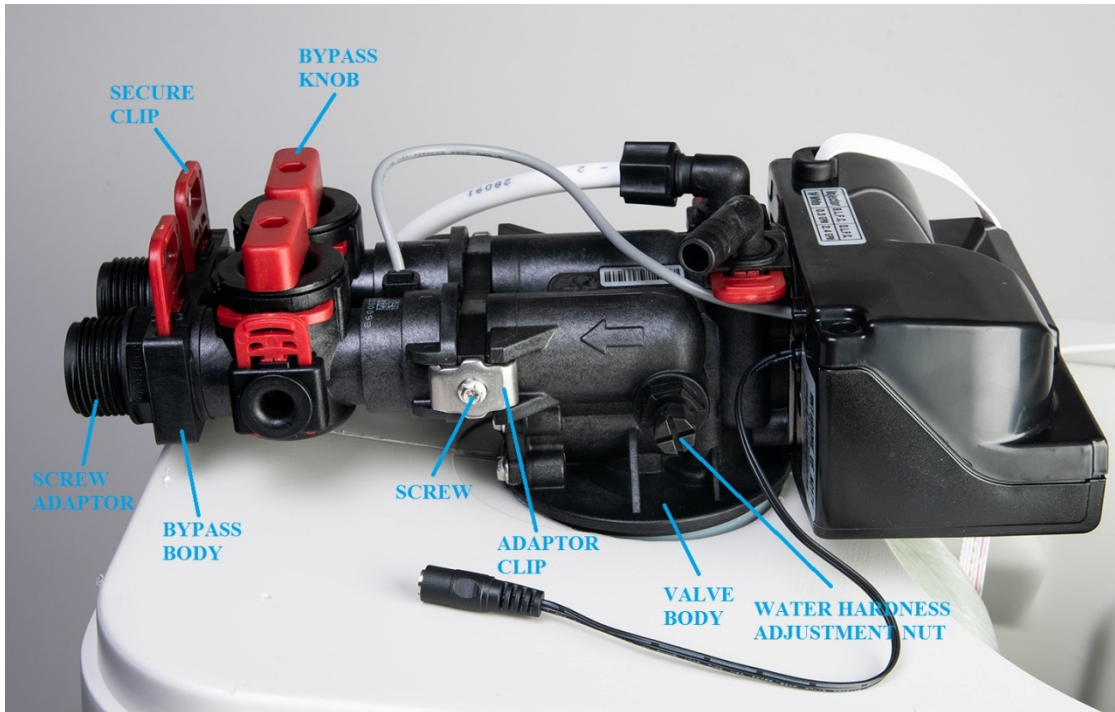


3. Inlet/Outlet Connections Types:

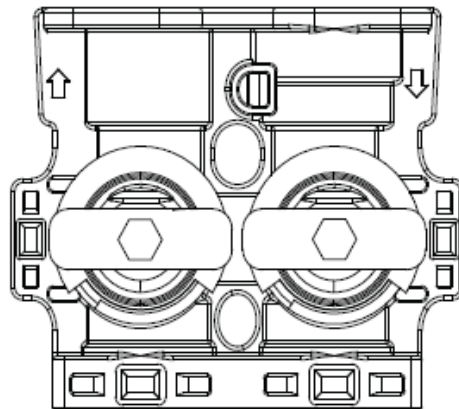


BYPASS ASSEMBLY

4. Bypass Assembly:



SERVICE POSITION



BYPASS POSITION

Installation Requirements

Equipment Installation Conditions

- The installation location should be well-ventilated and protected against wind and rain. Avoid direct sunlight and radiation from any heat sources.
- This equipment is required to be installed indoors. If it needs to be installed outdoors, heat preservation measures must be taken for the body and pipes, including frost-proof, sun-proof, and waterproofing measures and insulation.
- The inlet water must meet the water quality standards of municipal tap water.
- The sewage pipe should remain open at all times.
- If the equipment is installed indoors, the installation equipment must be equipped with water leakage protection.
- 120V/60Hz single-phase AC power must be used; alternative power supplies are strictly prohibited. The socket must also have a reliable ground wire.
- The product's power supply and plug must be installed in a wall position higher than 500 mm above the ground and equipped with proper grounding, leakage protection, and waterproof devices.
- The installation location should be level, and the ground bearing capacity should be greater than 300 kg/m².

Installation Precautions

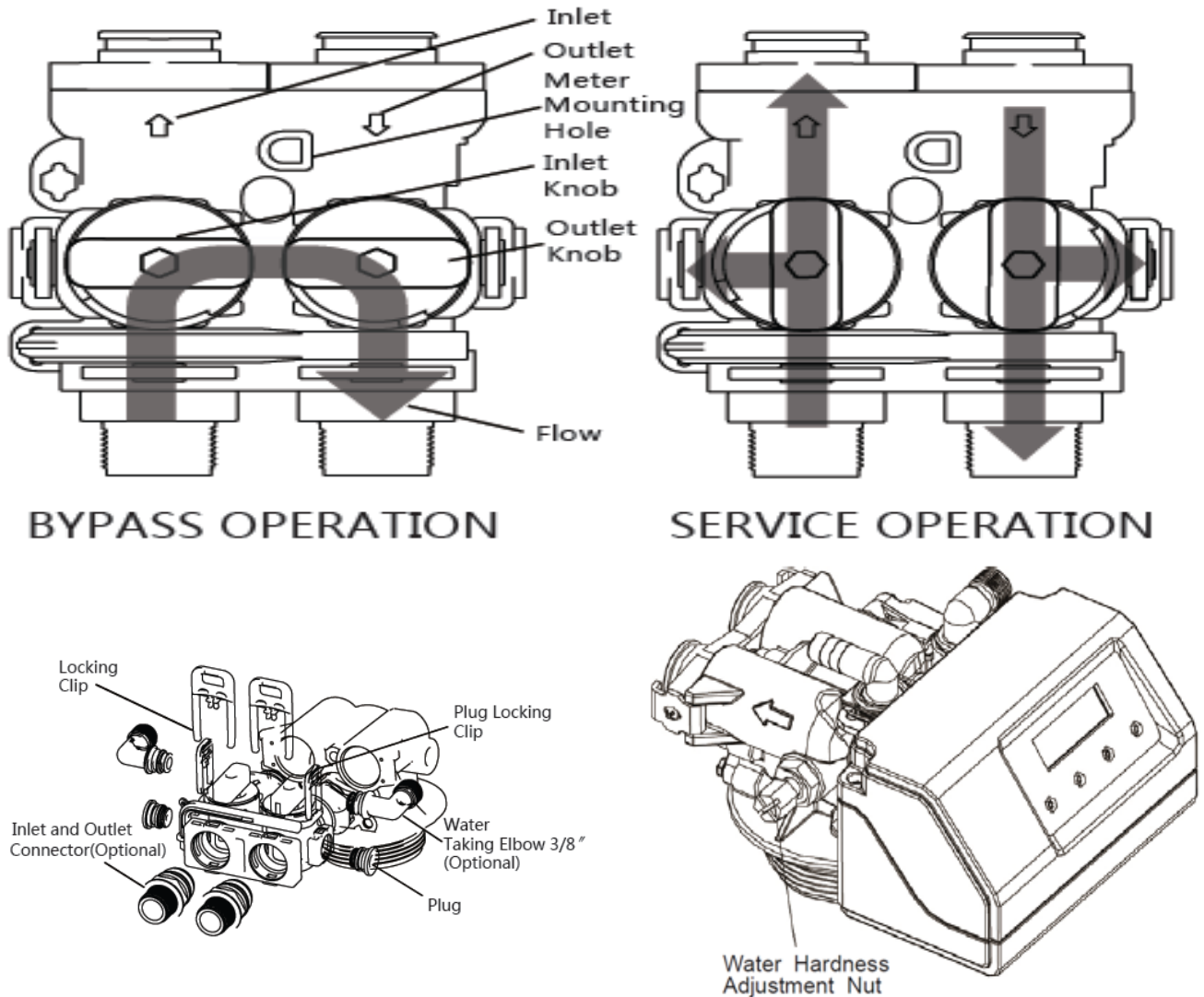
- This equipment should never be tilted or placed horizontally during transportation, installation, or use.
- Ensure there is proper space around the device and do not apply any external force to the device or its connecting pipes.
- Do not install this product near corrosive substances or gases, which may lead to corrosion or damage.
- Do not place flammable items on or near the product.
- All inlet and outlet pipes are recommended for use with water pipes and fittings that meet the appropriate standards of domestic drinking water. The connection of water pipes and circuits should comply with national or industry standards, and the pipe connections should comply with relevant federal installation regulations.
- Pay attention to the height and placement angle of the pipeline when it is connected. After the pipeline is appropriately connected, there should be no evidence of stress, so as to avoid damage to the water pipe or the product due to long-term use.
- The overflow pipe and the sewage pipe must be connected to the sewer separately, and the two must not be combined and then transferred to the sewer. The sewer drainage must be unobstructed, and there must be an air gap between the sewage pipe and sewage to prevent the sewage from flowing back into the system due to negative pressure.
- The water pressure is to be 20 psi - 50 psi. If the water inlet pressure is higher than 50 psi, a pressure reducing valve must be installed at the water inlet pipe of the water purifier. If the water

inlet pressure is lower than 20 psi, a booster pump must be installed at the water inlet pipe of the water purifier to ensure the working pressure meets technical requirements.

- Before connecting the water inlet pipe, remove any remaining impurities and dust in the pipe and close the main water supply before connecting it.
- While connecting pipes, keep the pipes as close to the wall as possible. The routing of the pipes should be straight, and the corners should be clear. The pipes should be fixed on the wall after installation.
- When connecting screw parts, seal rings are generally installed. Please be aware that excessive force may cause the threads to slip and the screw to crack.
- Connect the hose to the brine suction port on the control valve, connect the other end to the brine valve, tighten the nut, and ensure that all connections are tight to prevent leakage.
- During installation, pay attention to the direction of water flow, connect the inlet and outlet pipes according to the inlet and outlet signs, and ensure there is no water leakage after installation.
- The installation and commissioning of all machines can be conducted by common users or a professional technician.

Installation Instructions

(1) General Bypass Installation



- i. Hold the knob or use a bypass tool to rotate the knobs. The water supply will be **bypassed** when the knobs are **horizontal**. The bypass is in **service** when knobs are oriented **vertically**. When the bypass is in service, users can take raw water and filter water samples for testing at the water taking port on either side of the bypass.
- ii. Mount the meter sensor into the meter sensor mounting hole. This device handles meter and control functions after connecting to the appropriate controller.
- iii. In case of equipment failure or other exceptional circumstances, the bypass can be adjusted to the bypass position, allowing users to directly use tap water temporarily. After the failure or problem is resolved, adjust the bypass to the vertical service position.
- iv. Users can adjust the Water Hardness Adjustment Nut to achieve their desired water hardness.

- v. Rotate the Water Hardness Adjustment Nut in a clockwise direction. The bigger the rotation angle, the higher the water hardness.

(2) Precautions Before Commissioning

- Verify the water inlet pipe and sewage pipe are connected as required. All piping connections must comply with relevant national standards.
- Attach the sewage and overflow hoses onto the sewer pipe, but do not insert them directly into the sewer pipe. A gap of 100 mm shall be maintained with the bottom of the sewer pipe.
- Verify the water source pressure is within the range of 20psi - 50psi.

(3) Notes

- The acceptable water pressure range is 20~50 psi. If the pressure is higher or lower than this, it is recommended to install a pressure stabilizer.
- The operating ambient temperature requirement is 33.8°F ~102.2°F. If the temperature is higher or lower than this, heat preservation measures should be executed.
- Do not remove the clips when the system is in operation; relieve the pressure before removing the clips.
- This product should be installed out of reach of children.

(4) Equipment Installation

Step 1. Confirm proper installation conditions, then unpack the equipment and verify that all accessories are present. Prepare the installation tools and confirm that the water inlet and outlet pipes, power supplies, sewage pipes, and floor drains at the installation site meet the appropriate requirements.

Step 2. Close the indoor water inlet valve completely, then open any faucets in the room to remove the remaining water in the indoor water pipes.

Step 3. Use a screwdriver to unscrew the two screws on the back of the machine. At this time, you can lift the black lid, unplug the cable on the control panel, and remove the entire lid.

Step 4. Add salt to brine tank. Add sufficient softening salt to the brine tank, or about 2/3 of the brine tank volume.

Step 5. Remove two one-inch connectors, two O-rings, and a grease pack from the accessory package. Put the O-ring into the one-inch connector, tear off the grease package, squeeze out the grease, being sure to apply it to the O-ring evenly. Wipe your hands afterward to maintain cleanliness.

Step 6. Connect two one-inch quick-connectors, pull out the clamps, insert the quick-connectors into the water inlet and outlet, and re-insert the clamp.

Step 7. Connect the water inlet and outlet pipes. Pay attention to the direction of the water inlet and outlet and prevent the connection pipes from bearing extra stress.

Step 8. Take the sewage pipe(the original sewage pipe is 8.6ft. long) and cut into two pieces, one for sewage and one for overflow.Each section should be about 4.3 ft. long.

Step 9. Connect the equipment sewage pipe and clamp it to ensure a secure connection. Connect the equipment overflow pipe and clamp it to provide a secure connection as well. The sewage and overflow outlet is then inserted into the tubes, and the stainless steel clamp is locked and firmly attached outside to prevent high water pressure during sewage discharge. This could cause the sewage hose to break loose and leak sewage.

Step 10. Insert the overflow pipe and the sewage pipe of the water softener into the sewage outlet.

Step 11. Re-attach the lid. The machine's cable needs to be plugged back into the control panel. Ensure it does not fall off.

Step 12. Plug in the power adapter and connect the other end of the socket to the power supply.

Step 13. Place the bypass in the **bypass position**.

Step 14. Slowly **turn on the main water supply**.

Step 15. Open a cold water tap nearby and let the water run for a few minutes until the water runs clean or until the system is free of foreign material caused by plumbing work.

Step 16. Add water to the resin tank:

After connecting the pipes and power supplies, **start regeneration** and **slowly open the water inlet valve to the 1/4 position** (rapid opening will cause equipment damage and resin loss). At first, you will hear the air exhaust sound coming from the sewage pipe. Wait for the "BACKWASH" sign on display to stop flashing, then unplug the power supply, **power off** the device, and keep the device in the backwash state.

After the air in the resin tank is wholly discharged (the exhaust sound disappears and water steadily flows out of the sewage pipe), **completely open the water inlet valve** and flush the resin tank until the water is completely clean. The flushing time should not be any less than 10 minutes, and the tank's air should be completely exhausted.

 **All keys will lock after 3 minutes during standby. Press and hold the "MENU" key for 3 seconds to unlock.**

Step 16. a. To perform the **regeneration processes**, press and hold the "↑" / "↓" keys for **3 seconds** in the unlocked state to enter the user menu settings.

Step 16. b. Press and hold the "SET/REGEN" button for 3 seconds to enter manual regeneration mode, then choose immediate regeneration.

Step 17. Add water to the brine tank:

After completing the above steps, **connect the power supply**. The control valve will continue to run the remaining regeneration steps and return to regular use after completion. This step will take about **one hour** to complete. The process will replenish a certain amount of water in the brine tank to ensure the next regeneration's effectiveness and is an essential step.

Step 18. Resin regeneration:

After the above steps are completed, let the equipment **stand for 24 hours** to produce enough concentrated brine in the brine tank. Then start a complete regeneration process to ensure that the resin meets the requirements of regular use. **Start the regeneration**, and the valve will begin to run the regeneration process automatically. During this period, do not cut off the water or power, and do not touch any buttons on the valve (be sure to follow the procedure through the entire regeneration process and return to regular use).

 **All keys will lock after 3 minutes during standby. Press and hold the “MENU” key for 3 seconds to unlock.**

Step 18. a. To perform the **regeneration processes**, press and hold the "↑" / "↓" keys for **3 seconds** in the unlocked state to enter the user menu settings.

Step 18. b. Press and hold the "**SET/REGEN**" button for 3 seconds to enter the manual regeneration mode, then choose immediate regeneration.

Step 19. Return the bypass to the **service position**.

Step 20. Regular use:

When using the product for the first time, run water from the faucet for 5 minutes. After this, the softened water can be used normally.

Step 21. **Open a cold water tap** nearby and let the water run. Then **close the tap**. Verify the water is completely clear before use.

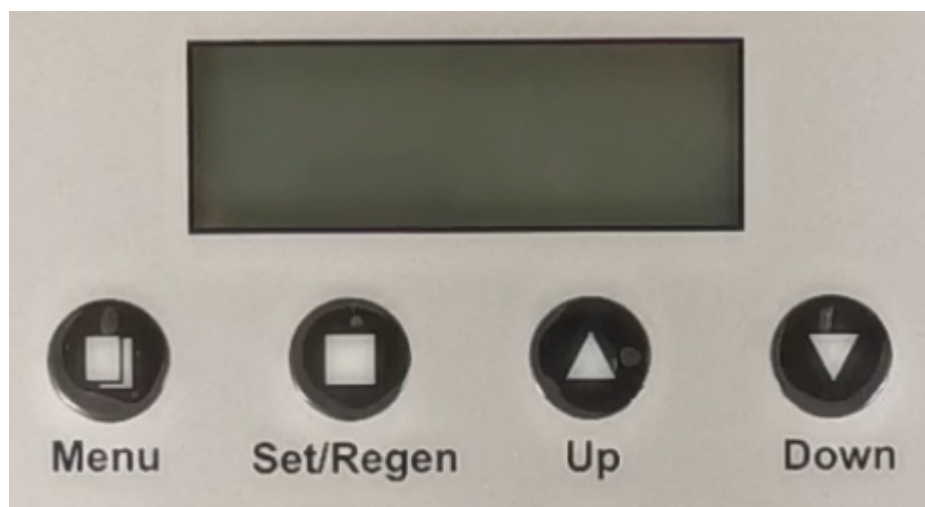
Step 22. Check again for any water seepage in the laying pipeline and verify whether the fittings at the connection parts with the original pipeline have loosened or experienced water seepage from construction.

Step 23. Set up the equipment's system parameters (see Programming the Central Softener System for details, p.15 ~ p.19).

Step 24. Clean up any mess or components from installation.

Programming the Central Softener System

(1) Button Configuration



- **MENU:** This function is used to enter the basic setup information required at the time of installation.
- **SET/REGEN:** This function is used to initiate an immediate or delayed manual regeneration.
- **DOWN/UP:** These buttons are used to increase or decrease the value of the settings while in programming mode.

(2) Key Functions

"MENU"

- Press and hold for 3 seconds to unlock the device while in standby mode.
- Press and hold for 3 seconds in the unlocked state to enter the user menu settings, which include items such as regeneration mode, time, date, etc.
- In the user menu display, press this button to exit the menu display immediately.

"SET/REGEN"

- While in the unlocked state, press and hold for 3 seconds to enter the manual regeneration mode. You can choose vacation mode, immediate regeneration, or full-cycle immediate regeneration. Choose vacation mode and input estimated holiday days. The valve will regenerate in smart clean mode (see p.17) when no water is used during these days; if there is water used during the days, the vacation mode will automatically turn off.
- Delayed regeneration means that the system will start a regeneration at the next regeneration time regardless of the remaining regeneration days or water consumption. Press and release the button to set a delayed regeneration that will occur at the regeneration time.
- Immediate regeneration means that the system immediately starts a regeneration.

- In the user menu display, press this button once to delay regeneration.
- In the user menu setting, press this to confirm the parameter setting and switch to the next option.

“UP/DOWN”

- When the display lists any menu options, these keys can be used to adjust the value or option.

(3) Notes

(a) Key Combinations

- In the unlocked state, press and hold "↑" and "↓" at the same time for 3 seconds, then press "SET/REGEN" to the regeneration cycle setting (backwash, rinse, lock/unlock value).
- Press and hold "MENU" and "SET/REGEN" at the same time for 3 seconds in the unlocked state to enter the user menu settings, such as language, units, smart clean, etc.

(b) During the menu setting process, if there is no activity within 1 minute, the system will automatically return to its standby state.

(c) While in the standby state, if there is no activity within 3 minutes, the system will automatically lock, and the display can be processed after unlocking.

(d) For the calendar setting, current time, and regeneration time, the "MENU" button is used for switching options, and "SET/REGEN" is used to enter the setting. After adjustment, press "MENU" to confirm and "SET/REGEN" to return to the standby state.

(4) Press and hold "MENU" for 3 seconds to enter the following user menu settings:

TIME OF DAY 12:01 PM
YEAR 2012
MONTH AUGUST
DAY 21
SET HARDNESS 20.0 gpG
SET PEOPLE 4
SALT SETTING HIGH EFFICIENCY STANDARD IRON & MN
WATER SOURCE MUNICIPAL WELL / OTHER
REGEN. TIME 2:00 AM
LOAD DEFAULT NO
PROGRAMMING COMPLETE

TIME OF DAY, YEAR, MONTH, DAY:

Time of day is for normal operation and the scheduling of the regeneration time. The date is used in a diagnostic function to track the last time the system regenerated.

SET HARDNESS:

This value is the maximum compensated water hardness of the raw water supply in grains per gallon. It is used to calculate the system capacity. If Ferrous Iron is present, add 4 gpG for every 1 ppm of Ferrous Iron.

SET PEOPLE:

This value is the number of people living in the home. It is used to calculate the amount of water needed for daily use and the reserve capacity of the system.

SALT SETTING:

There are 3 settings to choose in the MENU SETTINGS. High Efficiency, Standard Capacity, and IRON & MN. These settings will determine the salt dosage and capacity for the system.

WATER SOURCE:

This setting will determine if the BACKWASH OVERRIDE function will be on or off. Select MUNICIPAL if the water source is clean (<1NTU turbidity) and the system will skip the backwash cycle based on the setting in BACKWASH OVERRIDE.

Select WELL / OTHER if any Iron or Manganese is present or if the water source is not clean (>1NTU turbidity). The system will back wash every time.

REGEN TIME:

Determines the time of day to perform a scheduled regeneration. You can set the system's regeneration time according to your routine or schedule. It is recommended to set it in a period when water is not in use. The system defaults to 02:00 a.m.

LOAD DEFAULT:

If the selection is made, the processing time of each regeneration cycle will be reset to the default value setting. The rinse time will return to the default value.

(5) Press and hold "MENU" and "SET/REGEN" at the same time for 3 seconds to enter the following user menu settings:

LANGUAGE ENGLISH FRENCH
UNITS GALLONS METRIC
HARDNESS UNITS gpG
HIGH EFFICIENCY 3.0 lbs/CUFT
HIGH EFFICIENCY 5000 GRAINS
STANDARD 6.0 lbs/CUFT
STANDARD 4150 GRAINS
IRON & MN 12.0 lbs/CUFT
IRON & MN 2500 GRAINS
REFILL FLOWRATE 0.20 gpM
BRINE MAKE TIME 30 MINUTES
BRINE PRE-FILL% 70 %
DAILY RESERVE 4 DAYS AVERAGE
DAY OVERRIDE OFF
RINSE OVERRIDE OFF
BW. OVERRIDE 10 REGENS
FORCED REGEN. OFF
SMART CLEAN OFF
PROGRAMMING COMPLETE

SYSTEM LANGUAGE:

Choose the system language.

UNITS:

Choose the system's unit of measurement: metric or gallons.

EFFICIENCY & CAPACITY SETTINGS:

There are 3 settings to choose from: High Efficiency, Standard Capacity, and Iron & Manganese. The values for these settings are set in the Factory Options and are used to calculate the system capacity and refill time.

REFILL:

This value should match the BLFC flow washer. It is used to calculate the refill time.

BRINE MAKE TIME:

This value is the time allowed for the salt to dissolve in the water to create the brine solution. It is the amount of time ahead of the scheduled regeneration time that the water will be added to "top off" the brine already prepared in the brine tank.

BRINE PRE-FILL%:

This is the percentage of water that will be added to the brine tank after a regeneration. The default is 70%. The remaining water will be added just prior to the regeneration and will be proportional to the amount of capacity left in the system.

DAILY RESERVE:

This value is used to calculate the reserve capacity. Reserve Capacity = # of People x DAILY RESERVE. The 4-day option is used to calculate the daily water consumption for 28 days, and the average daily water consumption for each day of the week is calculated separately.

BW.(RINSE) OVERRIDE:

This setting can be used to skip the backwash (rinse) cycle. As an example, if the setting is 10, the system will skip 10 backwash (rinse) cycles. The setting will only work if the WATER SOURCE is set to MUNICIPAL for clean water applications.

FORCED REGEN:

When set to ON, the system will start a forced regeneration when the remaining capacity reaches 3% and when no water is used for 10 minutes. The regeneration consists of 20 minutes of Brine and 10 minutes of Rinse. The 30 minute regeneration will restore up to 33% of the system capacity. At the next regeneration time (2:00 a.m.), the system will automatically perform a standard regeneration to restore capacity to 100%.

SMART CLEAN:

When set to ON, the system will perform a 10 minute (adjustable) backwash and rinse if there is no water flow detected after 7 days (adjustable). The regeneration will occur at the scheduled REGEN TIME.

(6) Press and hold "↑" and "↓" at the same time for 3 seconds, then press "SET/REGEN" to enter the following user menu settings:

RESIN VOL. 1.00 CF
SALT SETTING HIGH EFFICIENCY
BACKWASH 4 MINUTES
BRINE 50 MINUTES
RINSE 5 MINUTES
REFILL AUTO 3.3 MIN
LOCK VALUE UNLOCK
PROGRAMMING COMPLETE

UNIT SIZE:

The "RESIN VOL." is the amount of ion exchange media used in the system.

CYCLE SETTINGS (BACKWASH, BRINE, RINSE):

The system has pre-engineered default settings for every valvemode, unit size, and salt setting. The settings are optimized to maximize salt and water use efficiency. The settings can be manually adjusted. Users can adjust these parameters at any time with the help of an application engineer based on the water environment. Refill is automatically calculated.

LOCK VALUE:

This setting locks the value set in the previous page, and the end user will not be able to modify it before the setting is changed to UNLOCK.

WCS45KG Whole House Central Softener Operation

(1) Product Functions and Features

iSpring's whole house central softeners not only provide features such as large water output, optimal water softening, and stable performance, but they can also be fully automatic and intelligent in operation, automatic regeneration, and dynamic salt dissolution. In addition, these softeners not only meet the needs of household bathing, laundry, cleaning, water heaters, water heaters, etc., but they also provide softened water for businesses, institutions, hospitals, schools, and other enterprises.

Using municipal tap water as the source, these products, after cation-exchange resin treatment, remove cations from the water, such as calcium and magnesium, and have the following characteristics:

- Fully Automatic Control
- A built-in time controller, twenty-four-hour time control. Based on the set number of interval days or the amount of treated water, the filter material is cleaned at the set regeneration time (usually in the early morning before any use).
- The control system can calculate and design an economical and effective soft water treatment plan based on the water source and the treated water volume.
- The regeneration cycle can be set based on time or treated water volume.
- Users can arbitrarily set the start time of the regeneration process.
- Cycle function programming

Service: After the source water flows through the water softener at an absolute pressure and flow rate, the Na^+ in the ion exchange resin exchanges with Ca^{2+} , Mg^{2+} , and other cations in the water to reduce the concentration of Ca^{2+} and Mg^{2+} ions, thereby softening the water quality.

Backwash: After the ion exchange resin is saturated, it must be backwashed before regeneration. The purpose here is to wash away the suspended, retained, agglomerated impurities on the resin surface, along with removing any broken resin. The other purpose is to loosen the compressed resin layer, which is beneficial to the regeneration of ion exchange resin.

Brine: The salt solution, with a specific concentration and flow rate, flows through the entire ion exchange resin layer to regenerate the saturated resin and restore the original softening, exchange capacity.

Rinse: Removes any remaining brine between the resin and wash until the water is qualified; presses the resin layer tightly to achieve a high-quality softening effect.

Refill: Replenish the brine tank with water that dissolves the salt for regeneration to produce a saturated brine for the next regeneration.

- Produce a saturated brine with uniform concentration

The brine tank's water is replenished from bottom to top, and the brine settles from top to bottom by natural convection, evenly mixing the brine until it reaches a saturated state.

(2) Structure

Automatic control valve

- Polyphenylene ether (PPE) + glass fiber
- Hygienic, reliable, and durable
- Corrosion-resistant
- Rust-free

Softening materials

- Ion exchange resin

Fiberglass Tank

- Polyethylene (PE) liner
- Corrosion-resistant
- Rust-free

(3) Valve

The valve is controlled using a simple, user-friendly electronic display on a large LCD screen. The main page displays the current date and time while also showing key information such as system usage.

Key Functions

- *Manual regeneration function*: Immediate or delayed manual regeneration.
- *Hardness adjustment function of Water Hardness Adjustment Nut*: The user can mix part of the raw water into the soft water by adjusting the Water Hardness Adjustment Nut to make the effluent water quality meet your requirements.
- *Display Format*: Metric or US formats are available.
- *Multi-Language Function*: English, Spanish, French and other languages are available.
- *Intelligent calculation*: The system can calculate the system's total capacity based on the preset resin filling volume, salt consumption, salt exchange capacity, and water hardness. It will then calculate the reserved water volume based on the predicted daily water consumption and calculate and control the regeneration cycle as well.
- *Water source selection function*: The water source setting allows users to choose two options: well water or municipal tap water. If you select the well water, each regeneration is complete. If you choose municipal tap water, you can eliminate the backwashing step within the set regeneration times. After the set regeneration times are reached, perform a complete regeneration process with backwashing steps.

- *Intelligent (mandatory) fast regeneration function:*When this function is turned on and the remaining water consumption in the regeneration cycle is less than 3%, the system will automatically perform a quick temporary regeneration to quickly restore the water treatment function of some resin and avoid affecting the effluent water quality.
- *Vacation mode function:*If vacation mode is turned on, the machine will periodically flush for 10 minutes based on test results to keep the water inside the equipment flowing regularly and prevent algae and bacteria.
- *Information cycle display function:*In the standby state, the display screen displays some water parameters in cycles, such as the amount of water that can be treated during the system regeneration cycle, the number of users, the amount of reserved water, the time to the next regeneration, the time to the last regeneration, the total number of regenerations, the total water consumption, whether the actual water consumption exceeds the sum of the system cycle water consumption, the current flow, peak flow, and whether the delayed regeneration is turned on, etc.. This is done to detect the user's actual water consumption and make appropriate adjustments.
- *Rinse/backwash override function:*In areas with better water quality, override mode can be enabled to help users save water.

Auto-locking:

All keys will automatically lock after 3 minutes while in the standby status. **Press and hold the “SETTINGS” key for 3 seconds to unlock.**

Please refer to the programming manual for additional details.

Caring for Your Central Softener

- If you have not read and truly understood this manual, do not operate this equipment.
- The effluent during the regeneration process is not softened, and the water used during the regeneration of the softener will affect its regeneration effect. It is not recommended to use the water at this time.
- The product can be used frequently after installation and commissioning has been completed. With an uninterrupted power supply, the user does not need to perform any additional operations on the machine.
- If the equipment fails or experiences other exceptional circumstances, the inlet and outlet valves can be closed (bypass valve is open), and the municipal water supply can be used directly. After removal, open the water inlet and outlet valves of the device.
- During use of the water softener, do not cut off the power to avoid errors in the clock on the water softener, which will affect the original regeneration start time and lead to the potential use of unsoftened water.
- Once the water softener has been stopped for a period of time, a regeneration operation should be added to ensure the quality of the softened water before reuse.
- If water consumption increases significantly (relative to normal usage) or the hardness of raw water increases, the number of regenerations should be increased accordingly. The softening capacity of the water softener in actual use is not only related to the quality of the raw water but also associated with the softener's water flow rate. When in use, the flow rate should be appropriately low, which will better effect water softening.
- Hot water will cause severe damage to the water softener's internal system, therefore users who need to connect a water heater behind the water softener should ensure there is at least a three-meter tube between the outlet of the water softener and the inlet of the water heater. If the three-meter connecting pipeline cannot be guaranteed, it is recommended to install a check valve between the water softener and the hot water heater.
- Only silicon-based grease should be used for maintenance. Any other grease formulations will affect the working life of the water softener.
- During regular use of the bypass, do not pull out the clamp. The pressure must be released before the clamp is removed.
- An overflow pipe must be used when installing this product to ensure safe use.
- The inlet water temperature of this product is required to be 33.8°F – 102.2°F. The ion exchange resin loaded in the barrel can easily freeze and crack. Pay attention to freeze prevention to avoid resin failure.
- The product should prevent water hammer effects during operation, such as avoiding rapid full opening and full closing of valves and emergency stop of water pumps.
- Do not apply external force to the device and avoid direct sunlight and radiation from other heat sources.

- The service life of the cation exchange resin is two years. After two years, the resin in the water softener needs to be cleaned and treated, and new cation exchange resin will be added.
- Check the condition of the water softener regularly. Users should inspect:
 - a) Whether there is any leakage in the pipeline. If so, contact iSpring.
 - b) Whether the overflow pipe is blocked. If so, clear it in time.
 - c) Whether the brine tank is vertical. If so, straighten it in time.
 - d) If the amount of salt is lower than the water level. If so, add salt in time.
- Use special softening granular salt for the water softener and avoid using small granular, fine salt.
- In case of power failure, readjust the current time and regeneration start time according to the manual after the power supply is restored.
- When the water supply in a residential area is shut down, the main water main valve should be closed immediately. The municipal water supply may cause negative pressure to the household pipeline and damage the equipment.
- When the water supply is shut down, the bypass valve of the water softener should be opened. When the water supply is restored, the faucet in the home should be opened first. The contaminated water should be released, and the bypass valve should then be closed after running clear water. When the water supply is restored, pollutants in the water pipe may enter the water softener and damage the machine, leading to ion exchange resin failure.
- Water softeners installed outdoors without regular maintenance will fail sooner than those installed indoors. It is recommended that you check the product and maintain it regularly. Contact iSpring immediately if anything goes wrong or appears out of order.

Troubleshooting

ISSUE	POSSIBLE CAUSE	POSSIBLE SOLUTION
<i>The control valve does not work</i>	The transformer is not plugged in	Connect the power supply.
	Socket failure	Repair or replace the socket.
	Power failure	Wait for power to be restored.
	Transformer failure	Replace the transformer.
<i>Incorrect regeneration time</i>	Power failure or loose power plug	Recalibrate the time according to the instructions.
<i>Leaking water</i>	Loose connection	Tighten the connection or reconnect.
<i>Noise in equipment</i>	Air is entering the equipment	Backwash again, exhaust air.
<i>The effluent contains bubbles</i>	Air is entering the equipment	Backwash again, exhaust air.
<i>No softened water</i>	No salt is added in the brine tank, or the brine concentration is too low	Add salt.
	The brine suction pipeline is blocked	Remove blockages.
	Inlet water pressure is too low	Increase the inlet water pressure, which should be greater than 20 psi.
	Brine pipeline leak	Check all components of the brine suction pipe and eliminate the leakage point.
	No salt	See the "No salt absorption" troubleshooting method for details.
<i>No salt absorption</i>	The regeneration device does not work	Check controller power.
	Injector net blocked	Clean the injector net.
	Blocked injector	Disassemble the injector net and rinse with water to remove blockages, then reinstall.
	Blocked brine valve	Remove the blockage or replace the brine valve.
	Blocked brine suction orifice	Remove the brine suction orifice plate and rinse with water to remove the blockage, then reinstall.
<i>Backwash flow is too high or too low</i>	Improper use of flow control	Replace with suitable flow control.
	Foreign matter in the flow control	Remove foreign objects.
<i>The effluent water has</i>	Low quality from water source	Contact iSpring.

<i>high hardness</i>	Incorrect regeneration cycle setting	Reset the regeneration cycle according to the manual.
	The water hardness adjustment nut is leaking or opened too far	Close the water hardness adjustment nut or readjust the flow of the water hardness adjustment nut.
	Bypass leaking	Replace the gasket.
<i>Brine tank overflow</i>	Replenishment time is exceedingly high	Reset the replenishment time.
	The machine is leaking	Turn off the machine and contact iSpring.

Need help with troubleshooting? If you have any questions or find there are missing parts or damage, please call **1-678-261-7611** or visit **www.ispringfilter.com**
When calling, please be prepared to provide the model of your product.
(The model of this product is "WCS45KG".)

Warranty Registration

To register your product for the warranty, visit our website at 123filter.com and go to the “Warranty” tab.

We provide a 30-day money-back guarantee, a 1-year manufacturer warranty, and lifetime tech support for all of our products. However, we do not have the order information from websites other than 123Filter.com (Amazon, Home Depot, etc.), so please be sure to fill in that information upon registration of your system. If you have any questions or concerns about your product, please do not hesitate to call or email us, or put it in the notes/comments upon your warranty registration. Your satisfaction is our business!

If you are happy with our products and service, please show your support by writing a product review on Amazon, even just a single line. It takes you just a minute but means a lot to us. Thank you!



Atlanta, GA USA

iSpringFilter.com

For questions, comments, or technical support, contact us at:

support@123Filter.com

(678) 261-7611

Monday-Friday 8:30 a.m. - 5:30 p.m. EST