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## KENT AUTOMATIC WATER SOFTENER 8L

### Instruction Handbook for Installation, Operation and Maintenance.



# Welcome to KENT

Dear Customer

Welcome to the world of **KENT**, leaders of water purification industry in India. With KENT's product you have all reasons to smile, since at KENT, we take pride in the quality and laboratory-tested performance of our products.

We are confident that your decision to own **KENT Automatic Water Softener 8L** will go a long way in serving you with soft water. We assure you that you will be satisfied with its performance and quality which comes without any compromise.

This manual will familiarize you with the operation of **KENT Automatic Water Softener 8L**. Before operating the unit, please read it thoroughly and retain it for future reference. Should you need further assistance, do not hesitate to contact your nearest KENT dealer or branch.

Best Wishes

KENT RO SYSTEMS LTD.

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## Introduction

Presenting the all-new **KENT Automatic Water Softener 8L**, to liberate you from the problems of hard water and provide your family with soft water. Automatic Water Softener lathers up your bathing experience and maintains the texture of your skin and hair. With Automatic Water Softener, deposits on your sinks, tubs, showers, and stains on your clothing are problems of the past.

The microprocessor controlled compact **KENT Automatic Water Softener 8L** regenerates automatically, thus liberating you from the tedious and time consuming manual regeneration process. It's time to bid Good Bye to hard water and welcome a continuous supply of soft water, 24 hours a day, 7 days a week.

The quality of water in our environment is getting worse every passing day, leading to an ever increase in water hardness. This causes problems in pipes and effects the proper functioning of appliances using water, by increasing the maintenance and reducing their service life. The **KENT Automatic Water Softener 8L** would provide you and your family with advantages outlined below.

### Benefit and advantages

- Saves Energy.
- Greater wellness feeling.
- Soft and smoother skin.
- Increases the service life of electrical appliances and heaters.
- Cost saving as it reduces the consumption of soap, fabric softeners, and other chemical products.
- Low maintenance cost.
- Operation completely automatic.

## Items in the box

Please verify the following items in the packaged box:

1.	KENT Automatic Water Softener 8L	1 N
2.	Straight Adaptor	2 N
3.	Transformer	1 N
4.	Instruction Manual	1 N
5.	Grease Packet	1 N
6.	SS Stand	1 N

## What is hardness?

Hardness is the quality of scaling salts present in the water, which are mainly composed of low solubility salts of calcium and magnesium. These salts due to its chemicals properties, have a tendency to precipitate, producing scale on pipes and obstructing them as they accumulate in this way the hardness has a higher tendency to scale on electrical resistors and to precipitate into heaters when temperature increases.

### How does the System Works.

Water softener is carried out by the means of ion exchange process. In this process, the system uses resins with a chemical capacity to capture calcium Ca and Magnesium Mg ions and remove them from water.

When calcium and Magnesium ions are captured by the resin, two sodium Na ions are released, which due to its chemical properties produces salts with the higher solubility avoiding all the hardness related problems.

### Regeneration of the System

The quantity of calcium and magnesium ions that the resin may retain is limited, therefore, the water volume that can be treated by softener is limited as well. The system must periodically carryout a process known as regeneration, which allows the resin top recharge with sodium ions, so it can continue to soften water.

In **KENT Automatic Water Softener 8L**, the regeneration process starts automatically.

## Salient Features of KENT Automatic Water Softener 8L

- 24 hours control and monitoring with a timer, automatically regenerate the medial bed at the system's set time of regeneration according to the set generation frequency.
- Enhances the quality of water by replacing hard salts of Magnesium & Calcium with Sodium.
- Fully automatic microprocessor controlled time based regeneration process regenerates at a fixed time.
- High capacity operation as regeneration can be done any number of times.
- High quality resin for long life and efficient ion-exchange process.
- Maintenance-free, long-life valve.
- Space saving design - resin tank housed with brine tank.

## Important Instructions

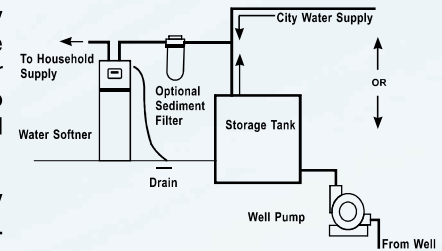
- Without reading and truly understanding the contents of this user manual, please do not perform any operation on the control valve.
- Strictly prohibit leaning position when shipping, installing and using this product, otherwise it would be damaged inside.
- Initiate a regenerate cycle after being inactivated in a long period of time, and then turn on the tap for several minutes before resuming normal use.
- Do not disconnect power during service time to keep the timer run normal that controls the regeneration function.
- If water usage or hardness of the raw water dramatically increases (comparing to the normal usage), the frequency of regeneration should correspondingly increase.
- Hot water can cause severe damage to the softener system. For boiler water and water heaters user, ensure a total run of the piping between the softener and the boiler is not less than 3 meters. It is recommended to install a check valve between the filters and the boiler if unable to meet the required piping length.
- The input water pressure must be between 20 to 125 psi, no negative water pressure is allowed.
- No chemical allowed at the inlet and outlet connections sectors. No excessive force which can damage the plastic conjunction parts should be applied by any tools.
- The required operating temperature for softener is 03°C - 38°C..
- Please set up a waterspout on the floor nearby the softener in case of any leakage accident.
- Avoid installation under direct sunlight. Exposure to excessive sun heat may cause distortion or other damages to non-metallic parts.
- Do not subject the water softener to freezing temperatures.
- Please select regeneration salt pill as regenerant.

## Softening Process

- Hard Water containing high concentrations of dissolved magnesium and calcium enters the softener through the 'IN' port. It passes through the control valve into the tank, where it flows down through a specially prepared ion-exchange resin that 'softens' it.
- The resin consists of specially manufactured beads that have been saturated with sodium ions. The process of 'Softening' occurs as the ions of hardness minerals Calcium and Magnesium are attracted to the charged resin beads. They swap their places with Sodium ions resulting in Soft Water.
- Soft Water then enters the strainer basket, located at the bottom of tank and passes upward through a long central tube, known as the Riser. Water exits the softener via the control valve and is then ready to use.
- Eventually when the beads of resin become saturated with hard minerals, the softener automatically starts regenerating. The regeneration process initiated by the timer, washes down the hard minerals to drain via a drain tube. By the time regeneration is over; the resin bed is rinsed, resettled and recharged with Sodium ions. KENT Automatic Water Softener 8L is set to soften your water again.

## Installation Location

- To condition the complete water supply at home, install the water softener close to main water supply inlet. Outdoor faucets should remain on hard water to avoid wastage of conditioned water and salts.
- A nearby drain is required to carry away regeneration discharge (drain) water. Use a floor drain, laundry tub, sump, standpipe or any other options.
- Any other conditioning equipment should not be installed between the water softener and main water supply inlet.
- The location chosen for the installation must have enough space for the system itself, its accessories, and connections and to carry out a proper maintenance.
- The system should not be installed next to heat source or where it receives a direct flow of hot air.
- Avoid external dips from pipes, drains, etc onto the system
- Should the softened water be supplied to a hot water it would be necessary to install a dependable check valve between water softener and the supply in order to prevent hot returning to the system and damaging it.

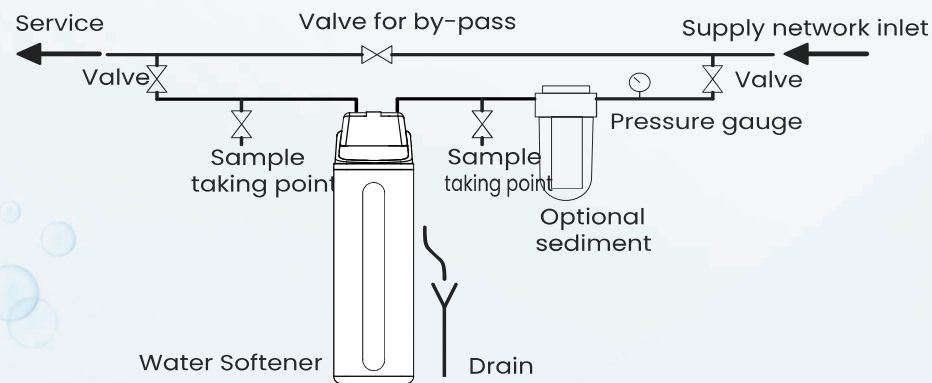


## Installation Procedure

**KENT Automatic Water Softener 8L** installation must be done according to the following schemes and in accordance with the local laws. Please respect assembly and installation indications given in the manual. Contact KENT technical service for any support.

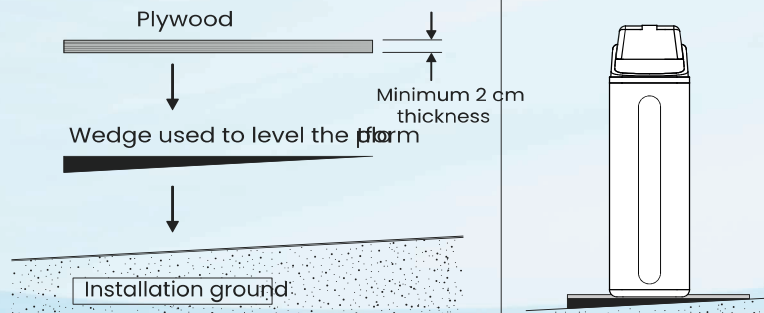
- Close main water supply valve, near the well pump or water meter or any other water source to softener.
- Open all the plumbing fixtures in house and outside faucets to completely drain out water from the house hold pipeline.
- Move the Water softener into installation position.

### Installation diagram



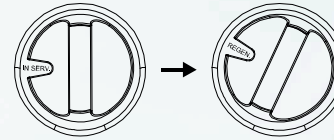
### Levelling the water softener

The System must be installed onto a levelling surface. If necessary place it on a plywood platform, which must be 2 cm thick. Then level the platform using a wedge. Under no circumstances should the wedge be placed directly under the salt tank, since it could get damaged.



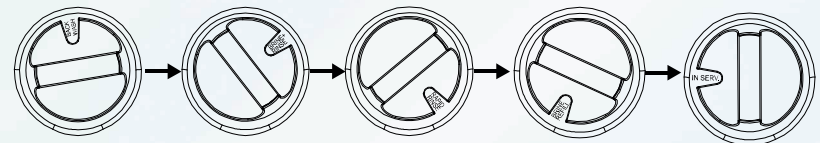
## MANUAL REGEN.(KNOB OPERATION)

### MANUAL Start



1. Rotate the knob a little bit to index the valve to REGEN. position

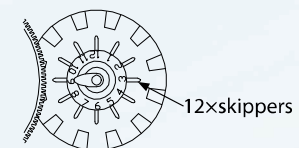
### Auto.Regen



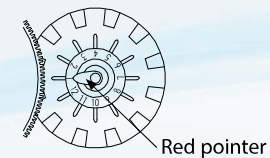
2. The valve will then automatically go through a standard regeneration process

## START-UP INSTRUCTIONS

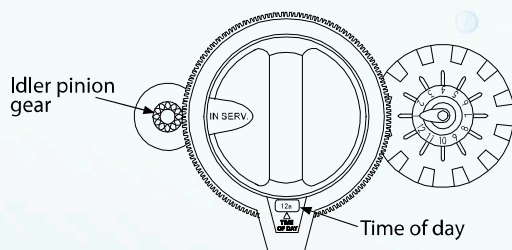
1. Push all skippers down to the bottoms toward center



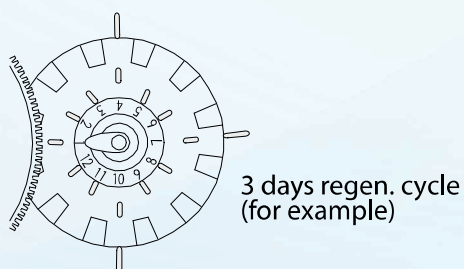
2. Rotate skipper wheel until red pointer points to digit 1. (Digit 1 indicates the first day, digit 2 indicates the second day and so forth). 12 days is one cycle and it continuously runs in cycles



- Press the idler pinion gear down and not release, meanwhile rotating the time gear to set the present time of day, after the time of day is set, release the idler pinion gear. The valve will be regenerated automatically at 02:00am on the next regen. day.



- Pull the desired skippers outward to set which day the system will regenerate. It's recommended to pull the skippers with the same interval space to ensure regeneration cycle days to be even.



Then measure the water hardness present on the outlet of the system and check that it fits within the desired values. Otherwise adjust regulator and check again



**Warning:** The hardness regulator is supplied in a closed position, therefore is the system is not adjusted then it would supply fully softened water.

## MAINTENANCE INSTRUCTIONS

### CHECK THE SALT LEVEL

Check the salt level monthly. Remove the lid from the cabinet or brine tank, make sure salt level is always above the brine level.

### NOTE

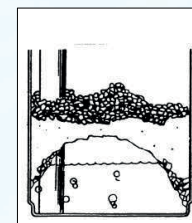
YOU SHOULD NOT BE ABLE TO SEE WATER IN THE CABINET OR BRINE TANK.

### ADDING SALT

Use only clean salt labeled for water conditioner use, such as crystal, pellet, nugget, button or solar. The use of rock salt is discouraged because it contains insoluble silt and sand which build up in the brine tank and can cause problems with the system's operation. Add the salt directly to the tank, filling no higher than the top of the brine well.

### BRIDGING

Humidity or the wrong type of salt may create a cavity between the water and the salt. This action, known as "bridging", prevents the brine solution from being made, leading to your water supply being hard.



If you suspect salt bridging, carefully pound on the outside of the plastic cabinet or pour some warm water over the salt to break up the bridge. This should always be followed up by allowing the unit to use up any remaining salt and then thoroughly cleaning out the cabinet. Allow four hours to produce a brine solution, then manually regenerate the softener.

### CARE OF YOUR WATER CONDITIONER


To retain the attractive appearance of your new water conditioner, clean occasionally with a mild soap solution. Do not use abrasive cleaners, ammonia or solvents. Never subject your conditioner to freezing.

## Basic Troubleshooting

Problem	Possible Solutions
<b>1. CONDITIONER DELIVERS HARD WATER</b> A. Bypass valve is open B. No salt in brine tank C. Injector or screen plugged D. Insufficient water flowing into brine tank E. Leak at distributor tube F. Internal valve leak G. Flow meter jammed H. Flow meter cable disconnected or not plugged into meter cap I. Improper programming	A. Close bypass valve B. Add salt to brine tank and maintain salt level above water level C. Replace injectors and screen D. Check brine refill time and clean brine line flow control if plugged E. Make sure distributor tube is not cracked. Check O ring and tube pilot F. Replace seals and spacers and/or piston G. Remove obstruction from flow meter H. Check meter cable connection to timer and meter cap I. Reprogram the control to the proper regeneration type, inlet water hardness, capacity or flow meter size.
<b>2. CONDITIONER FAILS TO REGENERATE</b> A. Electrical service to unit has been interrupted B. Timer is not operating properly C. Defective valve drive motor D. Improper programming	A. Assure permanent electrical service (check fuse, plug, chain or switch) B. Replace timer C. Replace drive motor D. Check programming and reset as needed
<b>3. UNIT USES TOO MUCH SALT</b> A. Improper salt setting B. Excessive water in brine tank C. Improper programming	A. Check salt usage and salt setting B. See #7 C. Check programming and reset as needed
<b>4. LOSS OF WATER PRESSURE</b> A. Iron build-up in line to water conditioner B. Iron build-up in water conditioner C. Inlet of control plugged due to foreign material broken loose from pipes by recent work done on plumbing system.	A. Clean line to water conditioner B. Clean control and add resin cleaner to resin bed. Increase frequency of regeneration C. Remove piston and clean control
<b>5. LOSS OF RESIN THROUGH DRAIN LINE</b> A. Air in water system B. Drain line flow control is too large	A. Assure that well system has proper air eliminator control. Check for dry well condition. B. Ensure drain line flow control is sized
<b>6. IRON IN CONDITIONED WATER</b> A. Fouled resin bed B. Iron content exceeds recommended parameters	A. Check backwash, brine draw and brine tank fill. Increase frequency of regeneration. Increase backwash time. B. Add iron removal filter system
<b>7. EXCESSIVE WATER IN BRINE TANK</b> A. Plugged drain line flow control B. Brine valve failure C. Improper programming	A. Clean flow control B. Replace brine valve C. Check programming and reset as needed

Problem	Possible Solutions
<b>8. SALT WATER IN SERVICE LINE</b> A. Plugged injector system B. Timer not operating properly C. Foreign material in brine valve D. Foreign material in brine line flow control E. Low water pressure F. Improper programming	A. Clean injector and replace screen B. Replace timer C. Clean or replace brine valve D. Clean brine line flow control E. Raise water pressure F. Check programming and reset as needed
<b>9. CONDITIONER FAILS TO DRAW BRINE</b> A. Drain line flow control is plugged B. Injector is plugged C. Injector screen is plugged D. Line pressure is too low E. Internal control leak F. Improper programming G. Timer not operating properly	A. Clean drain line flow control B. Clean or replace injectors C. Replace screen D. Increase line pressure (line pressure must be at least 20 psi at all times) E. Change seals and spacers and/or piston assembly F. Check programming and reset as needed G. Replace timer

### Specifications

Product	: KENT Automatic Water Softener 8L
Product Code	: 111137
Product Generic Name	: Water Softener
Colour/Finish	: Light Grey
Dimensions (mm)	: 472 (L) x 225 (W) x 648 (H)
Mounting	: Wall Mountable/Counter Top
Resin Volume	: 8 L
Net Weight	: 14 kg
Flow Rate	: 1200L/H
Input Power Supply	: Single Phase 110-240 V AC, 50-60Hz 
Output Power Supply	: 12 V AC
Water Temperature	: 3° C-38° C