

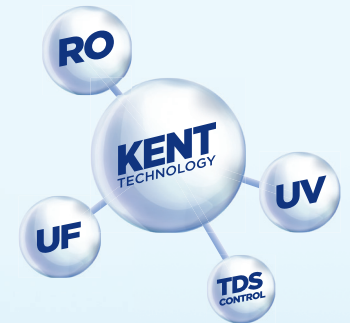
# KENT PEARL STAR

With Digital Display of Minerals & Purity  
RO+UV+UF+Alkaline+Copper+TDS Control

**KENT**  
Mineral RO™  
Water Purifiers  
HOUSE of PURITY

**KENT**  
Mineral RO™  
Water Purifiers  
HOUSE of PURITY

Instruction Handbook  
for Installation, Operation  
and Maintenance.



Digital Display of Minerals & Purity



Marketed by:  
KENT RO SYSTEMS LTD.  
E-6, Sector-59, Noida, U.P.-201 309, India.  
E-mail: sales@kent.co.in | Website: www.kent.co.in

For customer complaints, contact our Customer Care Officer at:  
E-6, Sector-59, Noida, U.P.-201 309, India. Call: 92-789-12345  
E-mail: service@kent.co.in or visit us at www.kent.co.in

Made in India

Kent Deta Hai  
**Sabse  
Shudh Paani**

Reverse Osmosis Water Purifier with UV Sterilization & TDS Controller

# Welcome to KENT

Dear Customer,

At the outset, allow us to thank you for your trust in **KENT** water purifier. We take pride in our reputation for product quality and industry proven performance. We are certain that your decision to own **KENT Pearl Star** Mineral RO™ Water Purifier will go a long way towards keeping you and your family in good health. We are confident that you will be satisfied with its performance and that it will serve your need for safer and cleaner drinking water without any compromise.

This guide will help you in getting the best out of your water purifier. Please go through this booklet to familiarise yourself with its operation and maintenance.

You can look forward to years of trouble-free service. In case you need any further information, contact your nearest KENT dealer or branch.

Best Wishes,

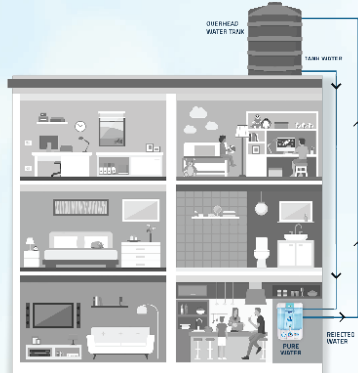
**KENT RO SYSTEMS LTD.**

## Table of Contents

1. KENT TECHNOLOGY - A Breakthrough in Water Purification .....	1
2. Salient Features of KENT Pearl Mineral RO™ Water Purifier .....	1
3. Items in the Box .....	1
4. Important Instructions .....	2
5. Reverse Osmosis Process .....	3
6. UV Process .....	3
7. Auto-flushing System .....	3
8. Water Flow Diagram .....	4
9. Electrical Circuit Diagram .....	4
10. Pearl Star Operations .....	5
11. Computer Controlled Operation* .....	9
12. Automatic Operation .....	9
13. Installation Instructions .....	9
14. TDS Adjustment* .....	11
15. Starting-up the purifier .....	11
16. Maintenance.....	11
17. Important Safety Instructions .....	12
18. Warning .....	12
19. Technical Specifications .....	13
20. Testing Information .....	13

## KENT TECHNOLOGY - A Breakthrough in Water Purification

KENT proudly presents **KENT Pearl Star Mineral RO™** Water Purifier its new and advanced domestic water purifier based on the patented KENT Technology. The ground-breaking KENT Technology, developed at KENT laboratory, broadly comprises of state-of-the-art RO+UV+UF+Alkaline+Copper+TDS Control & Auto-Flushing System. The initial purification by RO membrane having porosity as fine as 0.0001 microns, reduces even dissolved impurities (hard salts, heavy metals etc.). Double purification by UV process ensures complete protection against bacteria and viruses. Moreover, the patented TDS Control System intelligently retains essential natural minerals in the purified water, thus taking total care of your health and well being.



KENT is pleased to introduce **Zero Water Wastage Technology™** that recirculates rejected water to overhead tank with its own pump to make it Zero Water Wastage RO. This unique technology helps you make water pure, without wasting any water while retaining essential minerals.



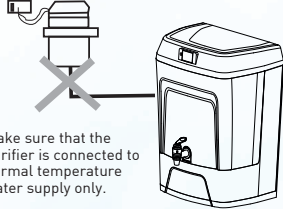
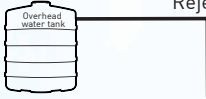

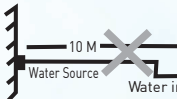
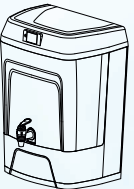




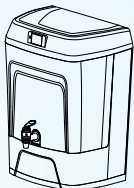
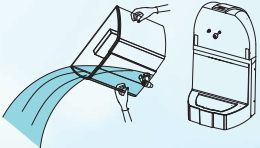

### Salient Features of KENT Pearl Mineral RO™ Water Purifier

- Zero Water Wastage\*\*
- Purification by RO+UV+UF+Alkaline+Copper+TDS Control makes water pure
- Now with the Goodness of Alkaline and Copper
- Real time monitoring and display of purity on a digital screen
- Suitable for purification of brackish/tap water/municipal corporation water supply
- Wall mounted/Counter Top design, best suited for Indian homes and offices
- Fully automatic operation, with auto-on/off function
- Computer controlled operation for enhanced purity and long life
- RO Membrane fused inside membrane housing to prevent tampering
- Use of push-fit fittings for leakage and maintenance free performance
- An aesthetically appealing design
- ABS construction for corrosion free use
- Inbuilt Auto-flushing system
- 11 L storage tank with water level indicator
- High purification capacity of 20 L/hr.
- We are not using any preservative in RO Membrane.

### Items in the Box

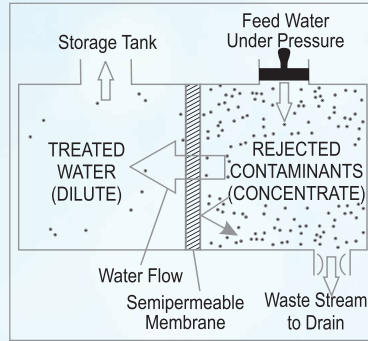
- |                                     |              |                              |            |
|-------------------------------------|--------------|------------------------------|------------|
| 1. KENT Pearl Star Water Purifier   | : 1 N        | 7. Fixing Clips              | : 25 N     |
| 2. 3-Way Connector                  | : 1 N        | 8. Tie Wire 4 inch           | : 4 N      |
| 3. S.S. Ball Valve                  | : 1 N        | 9. Union Connector           | : 1 N      |
| 4. Food Grade Pipe 0.635 cm (White) | : 20 Meters  | 10. Screws & Plastic Inserts | : 2 N each |
| 5. Food Grade Pipe 0.952 cm (White) | : 2.5 Meters | 11. Sticker Center Drill     | : 1 N      |
| 6. Bulk Head Union                  | : 1 N        | 12. Warranty Card            | : 1 N      |

## Important Instructions

 <p>Avoid exposure to direct sunlight and installation in damp areas.</p> 	 <p>Make sure that the purifier is connected to normal temperature water supply only.</p>
 <p>Reject Water</p> <p>The rejected water can be re-circulated to overhead tank for Zero Water Wastage.</p> 	 <p>Maximum distance between the water source and purifier should not be more than 3 meters.</p> 
 <p>Avoid sharp bends in pipe. Do not block the reject water pipe.</p> 	 <p>Do not confine the purifier in a cabinet.</p>
 <p>In case the purifier is not to be used for more than two days, kindly switch off the power supply and drain the storage tank.</p> 	 <p>To keep the storage tank clean, it should be removed, cleaned and wiped dry, once in 15 days.</p>
<p style="text-align: center;"><b>KENT</b></p> <p style="text-align: center;"><b>GENUINE</b></p> <p style="text-align: center;"><b>SPARE PARTS</b></p> <p style="text-align: center;">Use Genuine KENT Spares for optimum performance.</p>  <p style="text-align: center;">Do not try to service the purifier on your own. Instead, call the service technician for help.</p>	

## Reverse Osmosis Process

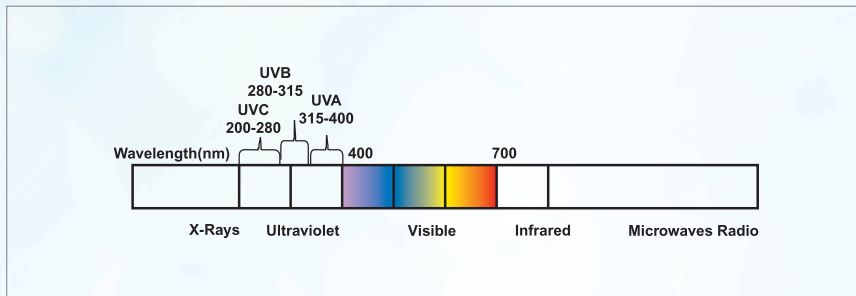
The Reverse Osmosis process, also known as hyper filtration, is the finest filtration process known till date. The process ensures reduction in particles as small as ions from a solution. Reverse Osmosis uses a semi-permeable membrane to reduce salts from potable/brackish water. In Reverse Osmosis, the water pressure applied to the concentrated side forces the process of osmosis into reverse. Under enough pressure, purer water is "squeezed" through the membrane from the concentrated side to the diluted side. Salts dissolved in water as charged ions are repelled by the RO membrane. The rejected impurities on the concentrated side of the membrane are washed away in a stream of waste water and thus does not get accumulated as in a traditional filter.



## UV Process

The UV light has shorter wavelength (higher energy) than visible light. It is called ultra-violet because it is just beyond violet light in the light spectrum. Technically, ultra-violet light is defined to be of any wavelength of light, which is shorter than 400 nanometer.

UV rays, which penetrate into the micro-organisms, are absorbed by the DNA of the pathogen in the water. The DNA is altered in such a way that the pathogen cannot reproduce itself. Thus, it is essentially killed and cannot cause infection. This process of DNA modification is called inactivation.

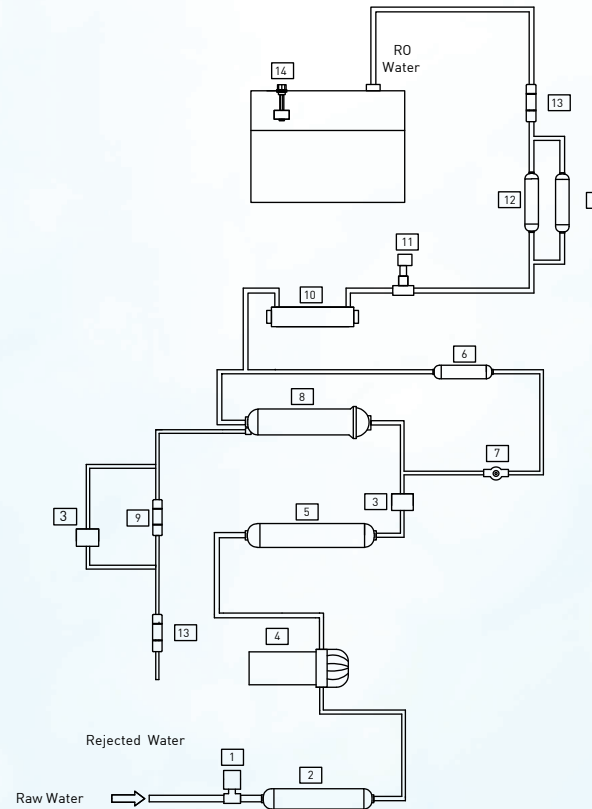


## Auto-flushing System

The purpose of the Auto-flushing system is to help prevent scaling or fouling of the RO membrane by providing a rapid rinse which washes away impurities from the membrane's surface and keeps the membrane clean. It offers the following benefits.

- Lowers rejected water outflow
- Improves "TDS" rejection rate i.e increases the RO membrane's efficiency
- Extends the life of the RO membrane

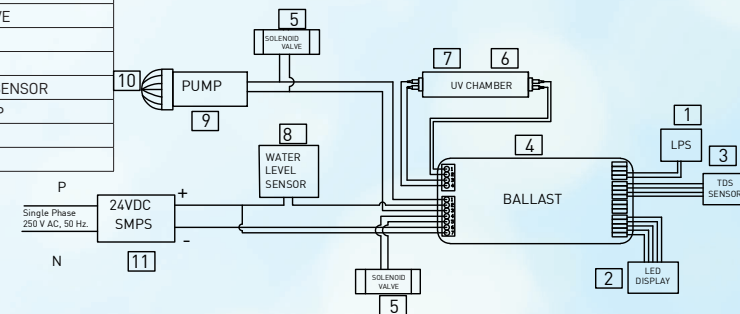
## Water Flow Diagram



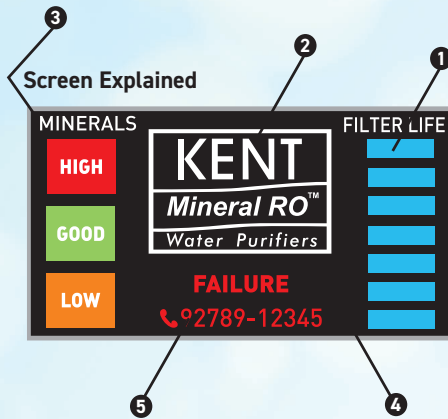
S.NO.	SP - CO.	ITEM DESCRIPTION
1	200035	LOW PRESSURE SWITCH
2	200010	SEDIMENT FILTER
3	200028	SOLENOID VALVE
4	200005	BOOSTER PUMP
5	200009	ACTIVATED CARBON FILTER
6	200003	UF FILTER
7	200034	TDS CONTROL VALVE
8	200529	RO MEMBRANE
9	202202	FLOW RESTRICTOR TUBE
10	200541	UV CHAMBER
11	200441	TDS SENSOR
12	200575	POST CARBON+ALKALINE
13	200058	NON RETURN VALVE
14	200030	WATER LEVEL SENSOR
15	201878	POST CARBON+COPPER

## Electrical Circuit Diagram

S.NO.	SP - CO.	ITEM DESCRIPTION
1	200035	LOW PRESSURE SWITCH (LPS)
2	201869	LED DISPLAY
3	200441	TDS SENSOR
4	201870	COMPUTER CONTROL BALLAST
5	200028	SOLENOID VALVE
6	200541	UV CHAMBER
7	200540	UV LAMP
8	200030	WATER LEVEL SENSOR
9	200005	BOOSTER PUMP
10	200059	PUMP HEAD
11	200016	SMPS



## Pearl Star Operations



### Mineral Content - High



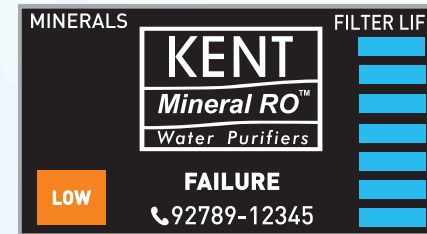
If the TDS level in the purified water is more than permissible range, the indicator would be in Red Zone. i.e High

### Normal Running Condition



Under normal running condition and without any fault, the users will be greeted with a screen as shown in figure

### Mineral Content - Low



If the TDS level in the purified water is less than permissible range, the indicator would be in Yellow Zone. i.e Low

### Mineral Content - Good



If the TDS level in the purified water is within the permissible range, the indicator would be in green Zone i.e Good

### No Input Water



In case of no water input, Kent logo will be blinking, that means no water input



### TDS Sensor Fault



HIGH, GOOD & LOW TDS bands will be blinking  
Service call number will be continuous ON. No  
Buzzer Sound for TDS Sensor Fault

### Filter Replacement Pre Indication



Service call number will be continuous ON.  
Filter life last bar will be blinking Buzzer will  
beep for 4 times at an interval of 2 seconds  
once for 30 seconds. This will repeat in every  
2 Hrs

Call service engineer for help

### UV Lamp Open/ Not present



Failure and Call Service Icon will be ON  
Continuous. Buzzer will beep twice at an  
interval of 9 Secs for 50 cycles. After 50 cycles  
buzzer will go OFF

### End of Filter Life Lock



Service call number will be continuous ON.  
Filter life all bars will be blinking If Product  
is in standby mode then Buzzer will turn ON  
continuous

Call service engineer for help

### UV tube/Inlet SV or RO Pump/ Auto Flush SV Fault



Failure and Call Service Icon will be ON  
Continuously.

#### UV Fault:

Buzzer will beep continuously @ 50m Sec ON,  
1.5 Sec OFF rate.

#### Inlet SV or RO Pump Fault:

Buzzer will beep continuously @ 50m Sec ON,  
1 Sec OFF rate.

#### AF SV Fault:

Buzzer will beep continuously @ 50m Sec ON,  
0.5 Sec OFF rate.

## Computer Controlled Operation\*

To ensure delivery of purer and healthier water, a micro-processor is installed in the purifier that performs the following functions:-

**UV Stabilization Delay:** To ensure that the UV lamp is pre-heated and is working at its optimum level before it starts disinfecting water, the controller provides a two second delay to the UV lamp when the purifier is switched on. During this period, only the UV lamp is switched on and other electrical devices of the purifier are switched off.

**Purification Delay:** To ensure that the idle water lying in the internal pipes and in the UV chamber is disinfected before being passed into the storage tank, the system provides a 5 second delay when the purifier is switched on. During this time, the UV lamp kills all micro-organisms that may be in the water inside the UV chamber. After this delay, all other electrical devices such as the booster pump and solenoid valve are switched on to start normal purification process.

**Alarm:** To ensure delivery of purer water, **KENT Pearl Star Mineral RO™ Water Purifier** in-built micro controller controls and senses various vital components and displays their status on the Display

## Automatic Operation

- The purifier automatically shuts off when the storage tank is full
- The purifier automatically restarts when water level drops below the maximum
- The purifier automatically flushes & cleans the RO membrane on periodic intervals
- The purifier does not allow any water rejection in absence of electricity/when tank is full
- The purifier does not start when inlet water supply pressure falls below 0.0344 Mpa - 0.3792 Mpa

## Installation Instructions

**KENT Pearl Star Mineral RO™ Water Purifier** is designed to facilitate both wall mounting as well as the counter-top usage. The purifier is easy and convenient to install.

### Recommended Site Preparations:

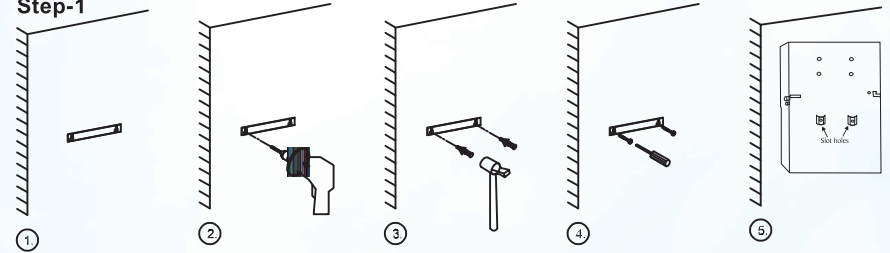
- Single Phase Single Phase 250 V AC, 50 Hz supply not more than 3m away from the point of installation
- Raw water supply with 1/2 inch nipple not more than 3m away
- Installation space as per dimensions of the purifier
- For wall mounting installation, make sure that the purifier is mounted on a wall. Avoid installation on wooden and metallic stands
- For optimum inlet pressure, the source water tank should be at least 10 ft above the purifier installed
- Install the purifier near a sink for easy availability of inlet and reject water lines
- The system and installation must comply with state and local laws and regulations

\* Tested & certified by TUV-SUD South Asia (P) Ltd. Installation Procedure: Wall Hanging Diagram

## Installation Procedure:

### Wall Hanging Diagram

#### Step-1

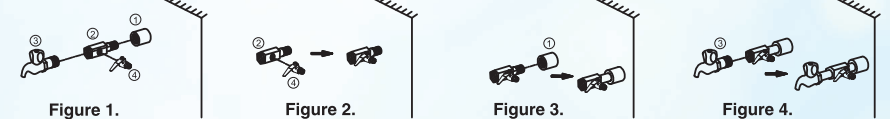


1. Paste the central drill sticker on wall at (3.6 feet to 4.0 feet from the ground) as per your convenience.
2. Ensure that sticker is pasted straight on the wall, then drill holes as per the space provided on sticker.
3. Now, insert the puff up with the help of a hammer.
4. Screw in two 10X50 self-taping screws, 5.1 inches (130 mm) apart horizontally.
5. Carefully hang the purifier on the wall with the help of the wall-mounting slot holes provided on back side of the purifier.

**Note:** If the wall is not straight or the screws are not properly drilled in an even position, it will damage your purifier.

**Note:** Keep the device away from heat or direct sunlight.

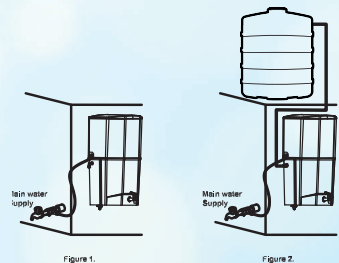
#### Step-2



1. First fix the SS ball valve (marked as no. 4) to the 1/4 inch port of the 3-way connector (marked as no. 2) as shown in figure 2.
2. Connect the 3-way connector to the raw water supply (marked as no. 1) as shown in the Figure 3. The a-way connector is fitted in line with the raw water supply.
3. The other end of the 3-way connector can be connected to a tap (marked as no.3) as shown in Figure 4. or can be plugged off if not required.

#### Step-3

1. Now connect one end of the white pipe to the SS ball valve and another end to the upper push-fit elbow fitting to the left hand side of the purifier labelled WATER IN, as shown in fig 1.
2. Similarly, connect one end of the white pipe to the lower elbow fitting connector in tank labelled REJECT WATER and leave the other end in the overhead tank, as shown in fig 2.



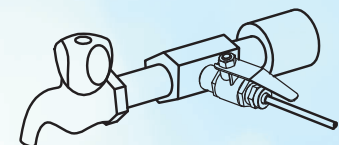
#### Step-4

Before connecting the power supply, it is important that you perform the following functions:

1. Open the SS ball valve (Handle parallel to the ball valve) to start the flow of water into the purifier, as shown in the figure.
2. Wait for 2-3 minutes to ensure that the filters are soaked in water.

#### Step-5

1. Connect the power supply.
2. Installation is complete.



## TDS Adjustment\*

The unique TDS Control System enables customers to retain the contents of natural minerals (TDS) in purified water, as per their requirement.

- Turning the screw of the valve anti-clockwise, results in an increased mineral content
  - Turning the screw of the valve clockwise, results in a decreased mineral content
  - ➔ TDS Meter Calibration certificate frequency is yearly.
1. Firstly, remove the protective cap from the TDS
  2. Clean the cap and fill it the water. Turn on the TDS meter and dip the head of the TDS meter to test TDS level of water. Alternatively, you can also do the same procedure in the clean container to test the TDS of the water
  3. Carefully immerse the meter into the water or solution up to the maximum immersion level, which is 2 inches. Allow the display to stabilize; this takes 10 to 30 seconds. The TDS meter will automatically compensate for any temperature variations once the reading has stabilized. Now, press the hold button to save the stabilized reading.
  4. After using the meter, ensure to shake off any meter. Excess water or gently wipe it with a tissue to keep it clean and dry.

☞ We recommend keeping the TDS at lowest but not below 50mg/l.

## Starting-up the purifier

- Switch on the power supply
- Allow the storage tank to fill to the maximum level
- Switch off the power supply
- Open the upper cover. Lift and drain the storage tank so as to remove residual dust
- particles present in the pipes and storage
- Place back the storage tank and close the upper cover
- Switch on the power supply
- Purifier is ready to use

☞ The glowing Red LED indicates power is on. The glowing Green LED indicates the purification is on.

## Maintenance

To ensure that the purifier operates at its BEST, routine maintenance must be performed. The frequency of the maintenance will greatly depend upon the raw water quality and consumption of purified water.

- Storage tank must be cleaned once in 2 weeks.
- Replace the sediment filter, activated carbon filter & post carbon filter once in 12 months or whenever the filter change alarm activates. It is recommended to change FRT along with the filters
- Replace the RO membrane once in a year
- Replace the UV Lamp once in a year
- In the event of not using purifier for a long time (while going for a holiday, tour etc.), make sure that you disconnect the power supply, turn off the raw water supply and drain the storage tank
- Cleaning and disinfection of the storage tank by halogenated solution (usually Chlorine) or any other equivalent disinfecting method in every three months.

☞ The replacement time of consumables such as filters and membrane is dependent on the quality of raw water and water consumed.

The Reverse Osmosis system contains a replaceable treatment component critical for the effective reduction of total dissolved solids and that product water shall be tested periodically to verify that the system is performing properly.

Replacement of spare parts are as under:-

-200010	SP Inline Sediment Filter 8"
-200009	SP Inline Carbon Filter 8"
-200529	SP RO Membrane
-200015	SP Post Carbon Filter (Blue)
-200003	SP Hollow Fibre Membrane
-200020	SP FRT 300/450

Note: Filters and membrane are consumables. Their replacement time is dependent on the quality of raw water and water consumption. They are not covered under the warranty. However, if a filter chokes with six months and a membrane within a year, it will be cleaned/repared/replaced free of cost. Changing the filters and system inspection is available on call. The treatment capacity of RO membrane will reduce with time due to clogging of pores of membranes.

"The reverse osmosis system contains a replaceable component critical to the efficiency of the system. Replacement of the reverse osmosis component should be with one of identical specifications as defined by the manufacturer, to ensure the same efficiency and contaminant reduction performance."

## Important Safety Instructions

- If the supply cord is damaged, it must be replaced by the original part in order to avoid hazard
- Children should be supervised to ensure that they do not play with the appliance
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety

## Warning

- Do not operate the UV-C emitter when it is removed from the appliance enclosure
- Read the maintenance instructions before opening the appliance
- The appliance must be disconnected from the supply before replacing the UV-C emitter



## Technical Specifications

Product	KENT PEARL STAR
Product Code	111118
Product Generic Name	RO Water Purifier
Colour	White
Applications	Suitable for Purification of Brackish/Tap Water Municipal Corporation Water
Weight	9.80 kg
Purification Production Rate	20 L/hr.*
Body Material	ABS Food Grade Plastic
Mounting	Wall-mounting/Counter-top
Dimensions(mm)	380 (L) x 330 (W) x 470 (H)
Recovery Rating (Min.)	40%
Reject Water Generation (Max.)	60%
Maximum Operatable Feed Water TDS	1500 mg/liter
Filter Cartridge	Sediment, Activated Carbon, UF, Post Carbon
UV Lamp Wattage	11 W
UV LED Wattage	0.7 W
Life of UV Lamp	5000 hrs. of Operation
Operating Pressure (Min./Max.)	0.0344 Mpa - 0.3792 Mpa
Min./Max. Operating pH	6.5-8.0
Storage Capacity	11 L
Maximum Duty Cycle	100 L/day
Membrane Type	Thin Film Composite RO
Booster Pump Voltage	24 V DC
Total Power Consumption	60 W
Input Power	Single Phase 250 V AC, 50 Hz
IP Rating	IPX1

\*Purification capacity tested on tap having TDS level of 1500 ppm at room temperature.

## Testing Information

The System has been tested according to IS 16240:2023 (Standards for drinking water as per Bureau of Indian Standards) for reduction of the hazardous substances as listed below.