



System Tested and Certified
by NSF International against
NSF/ANSI Standard 58 for
the reduction of TDS



CE Certificate



Innovations for
Better Living

Marketed by:
KENT RO SYSTEMS LTD.
E-6, 7 & 8, Sector-59, Noida, U.P.-201 309, India.
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Manufactured by:
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2. A-6, Sector-87, Noida-201 305, U.P., India.

For customer complaints, contact Customer Care Officer at:
E-6, 7 & 8, Sector-59, Noida, UP-201 309, India. Call: 92-789-12345
E-mail: service@kent.co.in or visit us at www.kent.co.in

KENT GRAND★

MULTIPLE PURIFICATION BY RO + UV + UF + TDS CONTROL
& UV DISINFECTION IN STORAGE TANK

KENT

Mineral RO™

Water Purifiers

HOUSE of PURITY

Instruction Handbook for Installation, Operation and Maintenance



Digital Display of
Minerals & Purity



System Tested and Certified
by NSF International against
NSF/ANSI Standard 58 for
the reduction of TDS



KENT® TECHNOLOGY
Removes Dissolved Impurities
Retains Essential Minerals
Multiple Purification

RO + UV + UF + TDS Control + UV In Tank



Kent Deta Hai
**Sabse
Shudh Paani**

The process & purifier is patented vide patent no. 199716.

Welcome to KENT

Dear Customer,

At the outset, allow us to thank you for your trust in **KENT** water purifiers. We take pride in our reputation for product quality and industry proven performance. We are certain that your decision to own a **KENT Grand 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 familiarize 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.

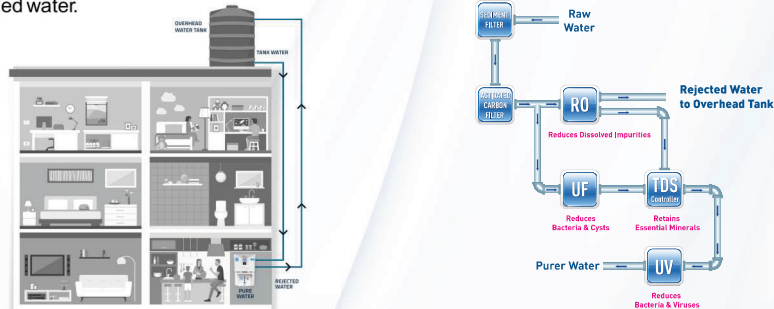
Table of Contents

1. KENT TECHNOLOGY - A Breakthrough in Water Purification	1
2. Salient Features	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. KENT Grand Star Operation	5
11. Computer Controlled Operation	8
12. Automatic Operation	8
13. Installation Instructions	8
14. TDS Adjustment	10
15. Starting-up the Purifier	10
16. Maintenance	10
17. Important Safety Instructions	11
18. Warning	11
19. Technical Specifications	12
20. Testing Information	12
21. Performance Data Sheet	13

KENT TECHNOLOGY - A Breakthrough in Water Purification*

Presenting the **KENT Grand Star Mineral RO™** Water Purifier. It uses futuristic and state-of-the-art technology to provide purer and healthier drinking water.

At the heart of the **KENT Grand Star Mineral RO™** Water Purifier is a Reverse Osmosis membrane having capillaries as small as 0.0001 microns, which reduce dissolved impurities (salts and heavy metals) and convert hard water to sweet and pure drinking water. With a patented mineral retention system, the **KENT Grand Star Mineral RO™** Water Purifier allows the user to control the Total Dissolved Solids (TDS) level in the purified water.



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 100% pure, without wasting any water while retaining essential minerals.

Salient Features of KENT Grand Star Mineral RO™ Water Purifier

- Water purifier with UV Disinfection in tank to keep purified water pure
- Zero Water Wastage**
- Purification by RO+UV+UF+TDS Control+UV in Tank makes water pure
- Real time monitoring and display of purity on a digital screen
- Suitable for purification of brackish, tap water & Municipal Corporation Water Supply
- Wall mounted design, best suited for Indian homes and offices
- Fully automatic operation, with auto-on and auto-off function
- Computer controlled operation for enhanced purity and long life
- RO membrane fused inside membrane housing to prevent tampering
- Vertically mounted SMPS for protection from water
- 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
- 9 L storage tank with water level indicator
- High purification capacity of 20 L/hr.

Items in the Box

- | | | | |
|--|--------------|------------------|-------|
| 1. KENT Grand Star Mineral RO™ Water Purifier | : 1 N | 8. Warranty Card | : 1 N |
| 2. 3-Way Connector | : 1 N | | |
| 3. S.S. Ball Valve | : 1 N | | |
| 4. Food Grade Pipe 0.635 cm (White) | : 2.5 Meters | | |
| 5. Food Grade Pipe 0.952 cm (White) | : 2.5 Meters | | |
| 6. Screws & Plastic Inserts | : 2 N each | | |
| 7. Sticker Center Drill | : 1 N | | |

* Tested & certified by TUV-SUD South Asia (P) Ltd. **Zero Water Wastage is based on the standard testing conditions.

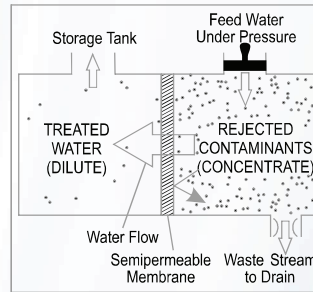
Important Instructions

<p>Avoid exposure to direct sunlight and installation in damp areas.</p>	<p>Make sure that the temperature of the water entering the purifier is within 10° C - 40° C.</p>
<p>The rejected water can be re-circulated to overhead tank for Zero Water Wastage.</p>	<p>The maximum distance between the water source and the purifier should not be more than 3 meters.</p>
<p>Avoid sharp bends in the pipe. Do not bend or block the reject water pipe.</p>	<p>Do not confine the purifier in a cabinet.</p>
<p>In case of not using the purifier 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 drained once every 15 days.</p>
<p style="text-align: center;">KENT</p> <p style="text-align: center;">GENUINE</p> <p style="text-align: center;">SPARE PARTS</p> <p>Use genuine KENT spares for optimum performance.</p>	<p>Do not try to service the purifier on your own. Instead, call a 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 the reduction of 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, water pressure applied to the concentrated side forces the process of osmosis into reverse. Under enough pressure, treated 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.

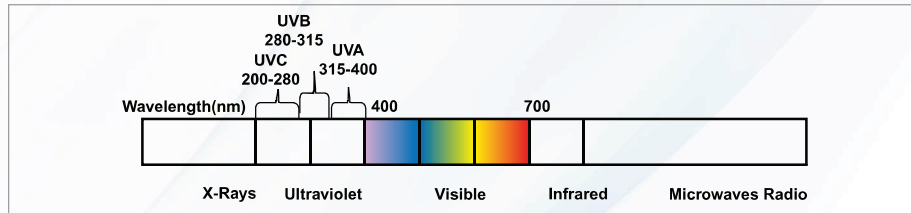
The rejected impurities on the concentrated side of the membrane are washed away in a stream of waste water, and thus do not get accumulated as in a traditional filter.



UV Process

The UV light has shorter wavelength (higher energy) than the visible light. It is called ultra-violet because it is just beyond the violet light in the light spectrum. Technically, the ultra-violet light is defined to be 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. Thus, they are essentially killed and cannot cause infection. This process of DNA modification is called inactivation.



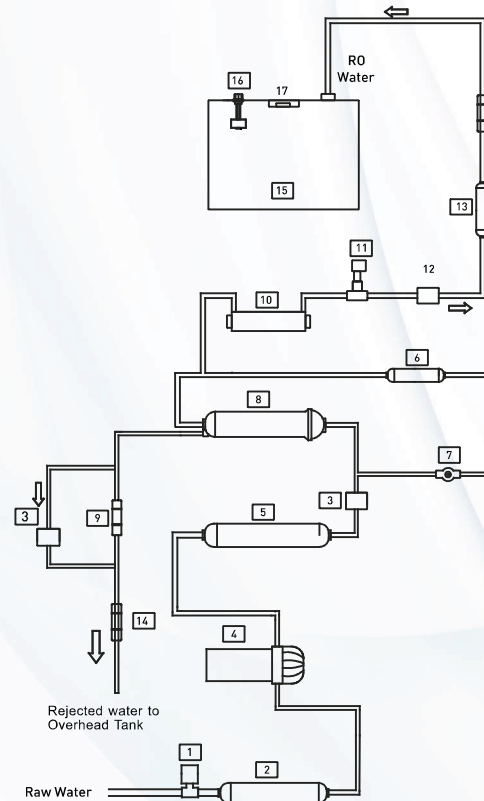
Note: The purified water stored in the tank is disinfected using UV LED, which automatically switches on for 30 minutes in a two hour cycle.

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 following benefits:

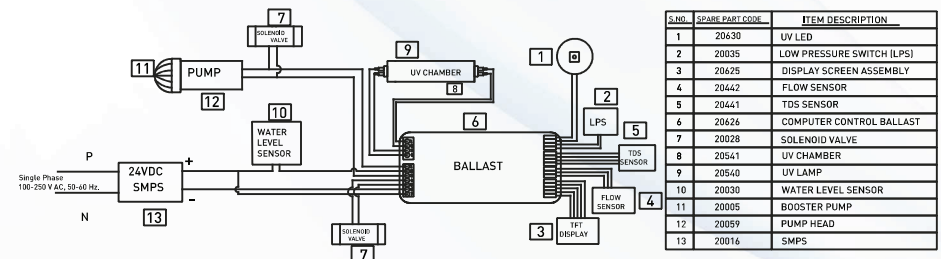
- Lowers rejected water outflow
- Improves "TDS" rejection rate i.e. increases the RO membrane's efficiency
- Extends the life of the RO membrane

Water Flow Diagram



S.NO.	SPARE PART CODE	ITEM DESCRIPTION
1	20035	LOW PRESSURE SWITCH
2	20010	SEDIMENT FILTER
3	20028	SOLENOID VALVE
4	20005	BOOSTER PUMP
5	20009	ACTIVATED CARBON FILTER
6	20003	UF FILTER
7	20034	TDS CONTROL VALVE
8	20529	RO MEMBRANE
9	20020	FLOW RESTRICTOR TUBE
10	20541	UV CHAMBER
11	20441	TDS SENSOR
12	20442	FLOW SENSOR
13	20015	POST CARBON FILTER
14	20058	NON RETURN VALVE
15	20373	WATER STORAGE TANK
16	20030	WATER LEVEL SENSOR
17	20630	UV LED

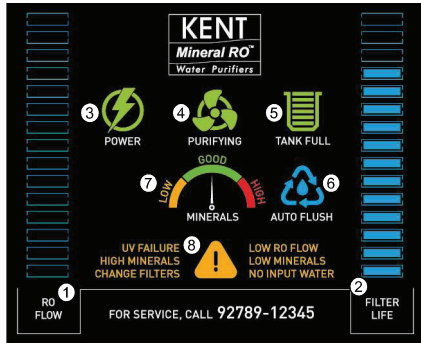
Electrical Circuit Diagram



S.NO.	SPARE PART CODE	ITEM DESCRIPTION
1	20630	UV LED
2	20035	LOW PRESSURE SWITCH (LPS)
3	20625	DISPLAY SCREEN ASSEMBLY
4	20442	FLOW SENSOR
5	20441	TDS SENSOR
6	20626	COMPUTER CONTROL BALLAST
7	20028	SOLENOID VALVE
8	20541	UV CHAMBER
9	20540	UV LAMP
10	20030	WATER LEVEL SENSOR
11	20005	BOOSTER PUMP
12	20059	PUMP HEAD
13	20016	SMPS

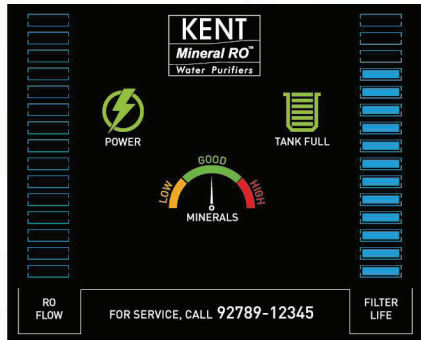
Grand Star Operations

Screen Explained



1. RO Flow Indicator
2. Filter Life Indicator
3. Power On/Off
4. RO Pump On
5. Tank Full
6. Auto Flushing On
7. Mineral Content in Purified Water
8. Warning Signs

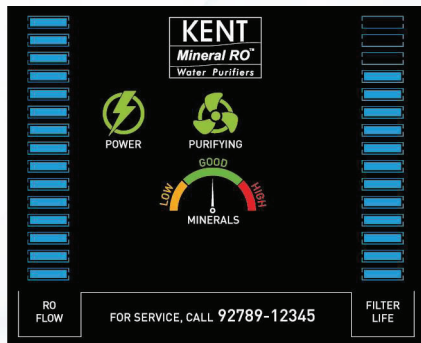
Normal Running Conditions



Under normal running conditions and without any fault, the users would be greeted with a screen as shown in the figure, with Power, Tank Full, Filter Life and Water Quality Indicator On

Since the tank is full, the RO flow rate would not be displayed

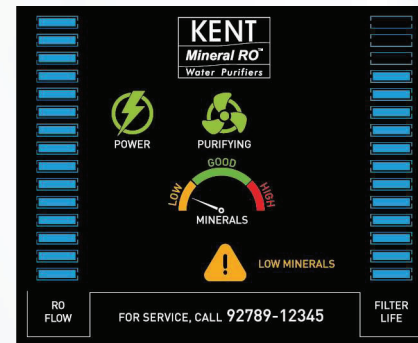
Emptying of Tank



When water is drawn from the tank, thus emptying it, the water tank sign would turn Off, and instead RO Flow, Purification and Mineral Quality would turn On

Depending upon the mineral contents in the water, the indicator would display Low, Good or High

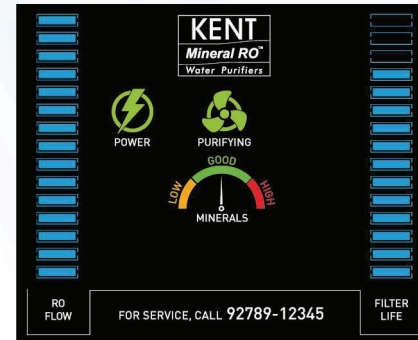
Mineral Content - Low



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

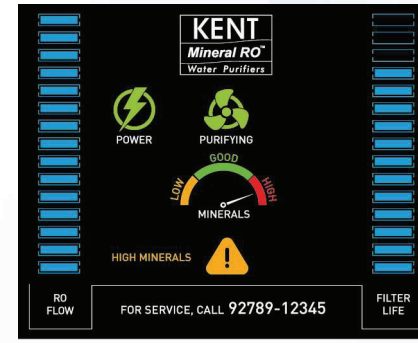
The warning sign would be displayed as shown in the figure

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

Mineral Content - High



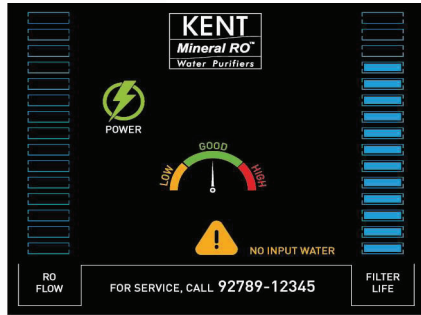
If the TDS level in the purified water is more the permissible range, the indicator would be in Red zone i.e High

The warning sign would be displayed as shown in the figure

What to do if Mineral Content is Low or High?
Call Customer Care or Login to App

*Mineral Content is displayed based on TDS levels in the purified water

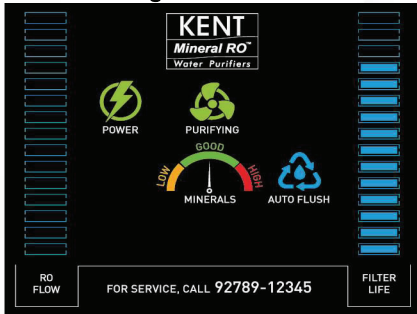
No Water Input



In case of No Water Input, the warning would be displayed, as shown in the figure.

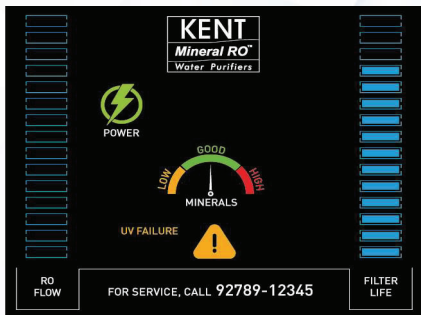
The water purifier would automatically shut off and will remain off till regular water supply is not restored

Auto-flushing



Auto Flush sign as shown in the figure indicates that RO Membrane is getting flushed automatically. Once Auto-flushing is complete, the light would turn off.

UV Lamp Failure/LED Failure

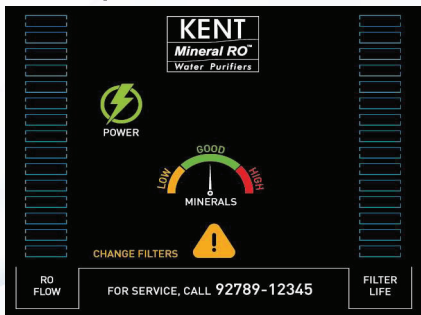


If UV Lamp fails, machine will display a warning signal of UV failure and an alarm with a single beep will be audible. The purifier would stop purifying water till the UV lamp is replaced.

If UV LED fails, machine will display a blinking warning signal of UV failure and an alarm with two beeps will be audible.

If the interface shows a UV failure message, switch off the purifier and call a service technician for help.

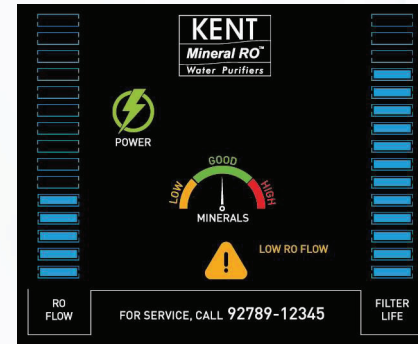
Filter Replacement



On exhaustion of filter life, 'Replacement Filter message' will be displayed on screen with a continuous buzzer and the purifier will stop purifying water till filters are not replaced.

If the interface shows 'Replace Filter Message', switch off the purifier and call a service technician for help.

Low RO Flow



Low RO flow warning sign indicates reduced capacity of RO Membrane.

Although the water purifier will continue working till the membrane failure happens, it is recommended to call the KENT Customer Care and ask for Membrane Replacement.

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 Grand Star Mineral RO™ Water Purifier in-built micro controller controls and senses various vital components and displays their status on the digital interface.

Automatic Operation

- The purifier automatically shuts off when the storage tank is full
- The purifier automatically restarts when the water level drops below the maximum
- The purifier does not start if the inlet water supply pressure falls below 0.3 kg/cm²
- The purifier does not allow any water rejection in absence of electricity / when the tank is full

Installation Instructions

The KENT Grand Star Mineral RO™ Water Purifier is a product of advanced technology, which ensures safe and clean drinking water. The purifier is easy and convenient to install.

Recommended Site Preparations:

- Single Phase 100-250 V AC, 50-60 Hz. connection not more than 3m away from the point of installation of the purifier
- Raw water supply with ½ inch nipple not more than 3m away
- Space as per the dimensions of the purifier
- Wall/plane surface for mounting two screws and holding the machine
- The system and installation must comply with state and local laws & regulations

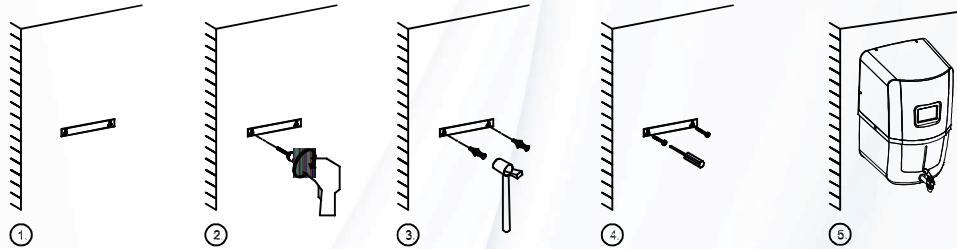
Specific Instructions:

- KENT Grand Star Mineral RO™ Water Purifier is a wall mountable purifier. Make sure that it is only mounted on a wall. Avoid installation on wooden and metallic stands
- For optimum performance and minimum inlet pressure required, ensure that the raw water supply tank is at least 10 ft. above the purifier

Installation Procedure:

Step-1

Wall Hanging Diagram

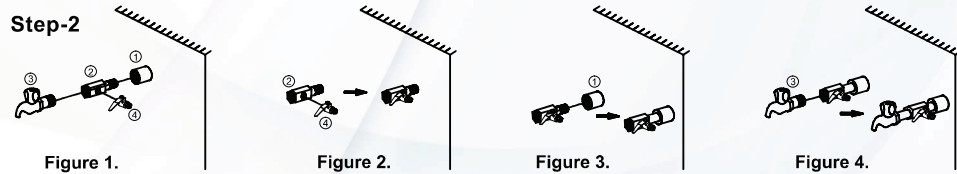


1. Paste the central drill sticker on a wall at 3.6 Feet to 4.0 Feet from the ground as per your convenience.
2. Ensure that the sticker is pasted straight on the wall, then drill holes as per the space provided on the sticker
3. Now, insert the puff up with the help of a hammer
4. Screw in two 10X50 self-taping screws, 5.4 inches (138 mm) apart horizontally
5. Carefully hang the purifier on the wall with the help of wall-mounting slot holes provided on the back side of the purifier

Note:

1. If the wall is not straight or the screws are not properly drilled in an even position, it will damage your purifier
2. Keep the device away from heat or direct sunlight

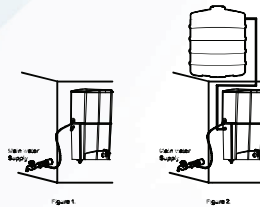
Step-2



1. First fix the SS ball valve (marked no. 4) to the 1/4 inch port of the 3-way connector (marked no. 2) 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 3-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 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 the other end to the upper push-fit elbow fitting to the left hand side of the purifier labelled WATER IN, as shown in figure 1.
2. Similarly, connect one end of the white pipe to the lower elbow fitting connector in the tank labelled REJECT WATER and leave the other end in overhead tank, as shown in fig 2.



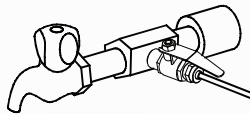
Step-4

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 increased mineral content
- Turning the screw of the valve clockwise results in decreased mineral content



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

Starting-up the Purifier

- Switch on the power supply
- Wait till the storage tank completely fills up**
- Switch off the power supply
- Drain the storage tank by opening the drain plug present at the bottom of the storage tank, so as to remove any dust particles present in the pipes and storage tank
- Close the drain plug and switch on the power supply
- The purifier is ready to use

Maintenance

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

- The storage tank must be drained once in 2 weeks. To do so, switch off the power supply, open the drain plug at the bottom of the tank and allow the water to drain. Then, screw back the plug and switch on the power supply
- Replace the RO membrane once every year
- Replace the UV Lamp once in a year
- If you are not going to use the purifier for a long time (in case you are on a holiday, tour or out of home), make sure that you disconnect the power supply, turn off the raw water supply and drain the storage tank
- Replace the sediment, activated carbon and post carbon filter when the filter change alarm is audible,

* Tested & certified by TUV-SUD South Asia (P) Ltd.

** Tested or certified flushing time - 24hrs.

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:-

-20010	SP	Inline Sediment Filter 8"
-20529	SP	RO Membrane High Flow
-20009	SP	Inline Carbon Filter 8"
-20015	SP	Post Carbon Filter (Blue)
-20003	SP	Hollow Fibre Membrane
-20020	SP	FRT 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 within 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 the RO membrane will reduce with time due to clogging of pores of membranes.

"This 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 Grand Star
Product Code	111101
Product Generic Name	Water Purifier
Product Colour	White
Applications	Suitable for purification of brackish / Tap water / Municipal Corporation Water
Purification Production Rate	20 L/hr.*
Body Material	ABS Food Grade Plastic
Mounting	Wall Mounting
Dimensions (mm)	400 (L) x 230 (W) x 540 (H)
Inlet Water Pressure/Temp. (Min.)	0.3 kg/cm ² /10°C
Inlet Water Pressure/Temp. (Max.)	4 kg/cm ² /40°C
Min./Max. Operating pH	6.5-8.0
Filter Cartridge	Sediment, Carbon Block Filter, UF and Post Carbon
UV Lamp Wattage	11 W
UV LED Wattage	0.7 W
Life of UV Lamp	5000 hrs. of operation
Weight	8.60 kg
Storage Capacity	9 L
Maximum Duty Cycle	100 L/day
Membrane Type	Thin Film Composite RO
Booster Pump Voltage	24V DC
Total Power Consumption	60W
Input Power Supply	Single Phase 100-250 V AC, 50-60Hz. 
IP Rating	IPX1

* Treatment capacity tested for tap water having TDS level of 750ppm at room temperature.

Testing Information

The System has been tested according to IS 10500:2012 (Standards for drinking water as per Bureau of Indian Standards) for reduction of the hazardous substances.

Performance Data Sheet-KENT Grand Star Mineral RO™ Water Purifier

"This system has been tested according to NSF/ANSI 58 for reduction of the substances listed below. The concentration of the indicated substances in water entering the system was reduced to a concentration less than or equal to the permissible limit for water leaving the system, as specified in NSF/ANSI 58".

Substance	Influent challenge concentration mg/L	Maximum permissible product water concentration mg/L	Minimum % reduction
Total Dissolved Solids	750 ± 40 mg/L	187	86.8%

"Do not use with water that is microbiologically unsafe or of unknown quality w/o adequate disinfection before or after the system".

The replacement component, 20010 SP Inline Sediment Filter 8", 20529 SP RO Membrane High Flow, 20009 SP Inline Carbon Filter 8", 20015 SP Post Carbon Filter(Blue), 20003 SP Hollow Fibre Membrane, 20020 SP FRT 450, Can be purchased directly from the manufacturer **KENTRO SYSTEMS LTD.**