

KENT GRAND STAR

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

KENT
Mineral RO™
Water Purifiers

HOUSE of PURITY

Meets
IS 16240 :
2023



Digital Display of
Purity & Minerals

**PURITY
IN EVERY
DROP**

**RETAINS
ESSENTIAL
MINERALS**

**UV LED
IN TANK**

Additional
Advantages of
**Alkaline
& Copper**



KENT
Mineral RO™
Water Purifiers

HOUSE of PURITY

Marketed by:

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KENT TECHNOLOGY

Removes Dissolved Impurities
Retains Essential Minerals
Multiple Purification with Purity in Every Drop
RO+UV+UF+Alkaline+Copper+TDS Control+UV in Tank

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 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.

Best Wishes,

KENT RO SYSTEMS LTD.

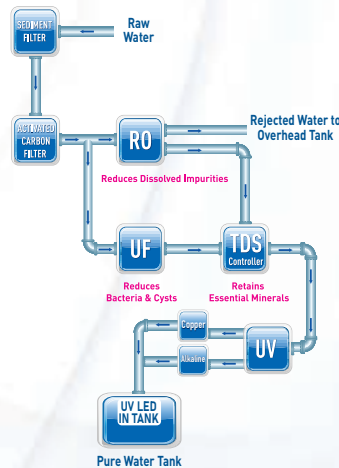
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KENT TECHNOLOGY - A Break Through in Water Purification

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.



Salient Features

- Water purifier with UV Disinfection in tank to keep purified water pure
- Zero Water Wastage**
- Purification by RO+UV+UF+Alkaline+Copper+TDS Control+UV in Tank makes water pure
- RO water purifier with the goodness of Alkaline & 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 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
- 9L 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 |
| 2. 3-Way Connector | |
| 3. S.S. Ball Valve | : 1 N |
| 4. Food Grade Pipe 0.635 cm (White) | : 1 N |
| 5. Food Grade Pipe 0.952 cm (White) | : 2.5 Meters |
| 6. Warranty Card | : 2.5 Meters |
| 7. TDS Meter | : 1 N |
| | : 1 N |

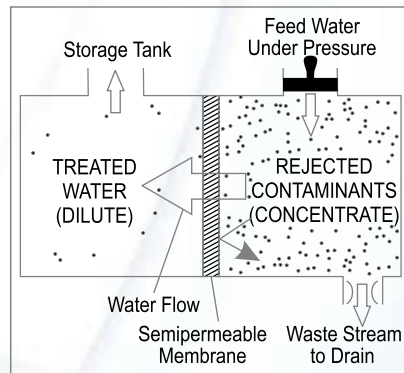
Important Instructions

<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>Reject Water</p> <p>The rejected water can be re-circulated to overhead tank for Zero Water Wastage.</p>	<p>10 M</p> <p>Water Source</p> <p>Water in</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>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.

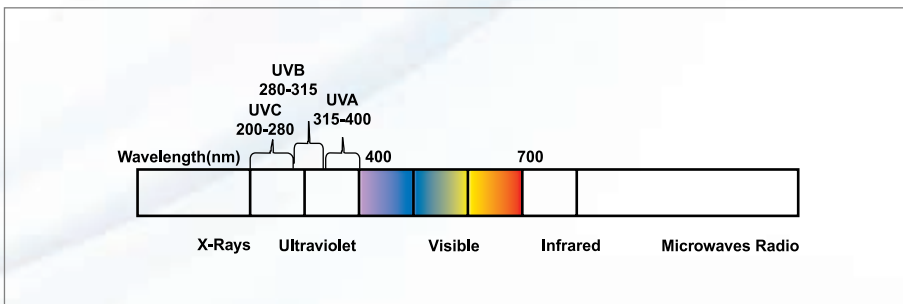
The rejected impurities on the concentrated side of the membrane are washed away in a stream of waste water, and thus do not get accumulated as in a traditional filter.



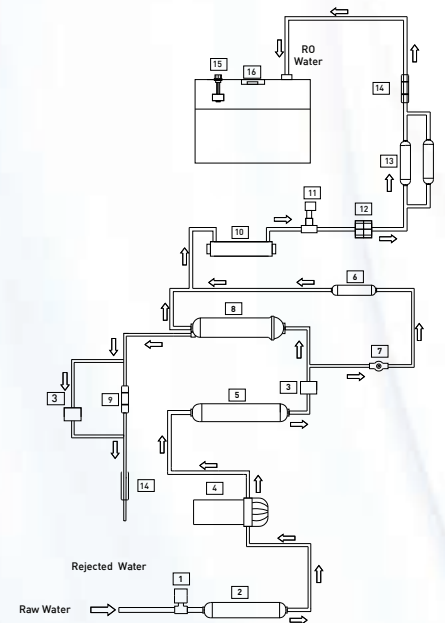
UV Process

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.

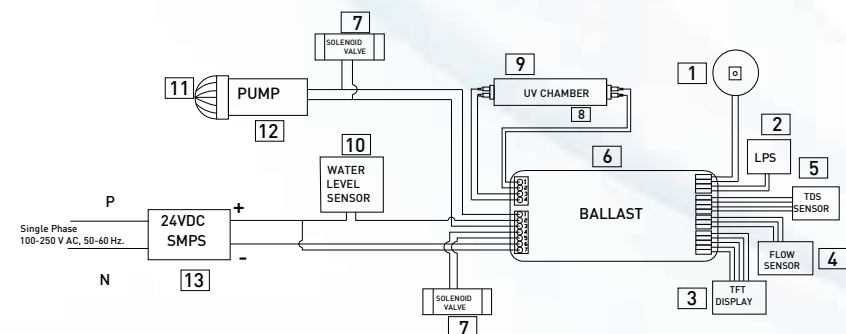


Water Flow Diagram



S.NO.	SPARE PART CODE	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	200020	FLOW RESTRICTOR TUBE
10	200541	UV CHAMBER
11	200441	TDS SENSOR
12	200442	FLOW SENSOR
13	200575	POST CARBON+ALKALINE
14	200058	NON RETURN VALVE
15	200030	WATER LEVEL SENSOR
16	200630	UV LED
17	201878	POST CARBON+COPPER

Electrical Circuit Diagram



S.NO.	SPARE PART CODE	ITEM DESCRIPTION
1	200630	UV LED
2	200035	LOW PRESSURE SWITCH (LPS)
3	200625	DISPLAY SCREEN ASSEMBLY
4	200442	FLOW SENSOR
5	200441	TDS SENSOR
6	200626	COMPUTER CONTROL BALLAST
7	200028	SOLENOID VALVE
8	200541	UV CHAMBER
9	200540	UV LAMP
10	200030	WATER LEVEL SENSOR
11	200005	BOOSTER PUMP
12	200059	PUMP HEAD
13	200016	SMPS

KENT Grand Star Operations

Screen Explained



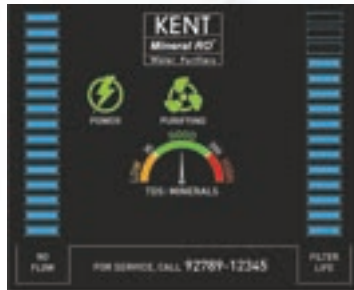
1. RO Flow Indicator
2. Filter Life Indicator
3. Power On/Off
4. RO Pump On
5. Tank Full
6. Auto Flushing On
7. Mineral Content in Purified Water
8. Warning Signs

Normal Running Condition



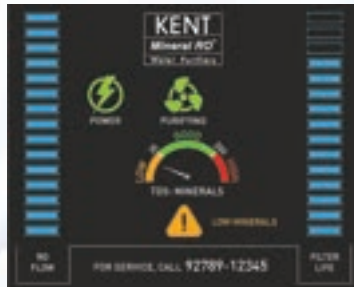
Under normal running conditions and without any fault, the users would be greeted with a screen as shown in the figure, with Power, Tank Full, Filter Life and Water Quality Indicator On. Since the tank is full, the RO flow rate would not be displayed.

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 the 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 the Green zone i.e. Good.

Mineral Content - High



If the TDS level in the purified water is more than the permissible range, the indicator would be in the 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.

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 until regular water supply is restored.

Auto-flushing



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

UV Lamp Failure/LED Failure

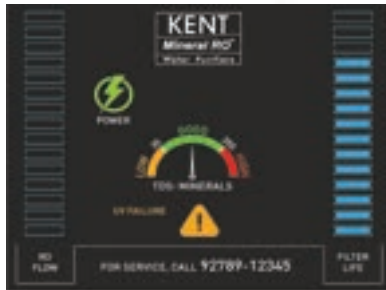


If UV Lamp fails, machine will display a warning signal of UV failure and an alarm with a single beep will be audible. The purifier would stop purifying water till the UV lamp is replaced.

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-B 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 does not start if the inlet water supply pressure falls below 0.3 kg/cm²
- The purifier automatically restarts when the water level drops below the maximum
- 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 250 V AC, 50 Hz. Connection not more than 3m away from the point of installation of the purifier
- Raw water supply with 1/2 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

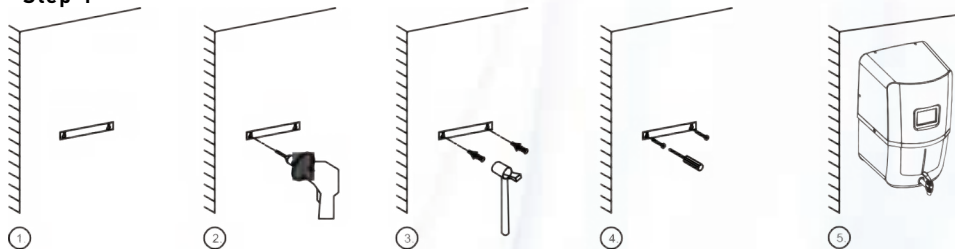
Specific Instructions:

- KENT Grand Star-B 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

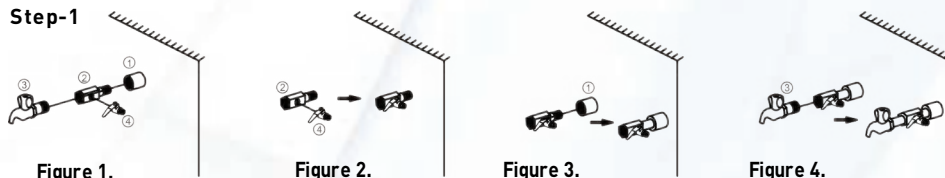


1. Paste the central drill sticker on wall at [3.6 feet to 4.0 Feet from the ground] as per your convenience.
2. Ensure that the sticker is pasted straight on the wall, then drill holes as per the space provided on sticker.
3. Now, insert the puff up with the help of a hammer.
4. Screw in two 10X50 self-tapping 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-1



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 3-way connector is fit 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 or can be plugged off if not required.

Step-3

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

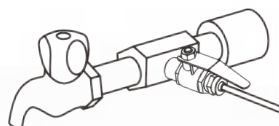
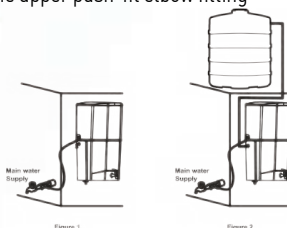
Step-4

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 Controller enables customers to retain the contents of natural minerals 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 with 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.

Starting up the Purifier

- Switch on the power supply
- Wait approximately for half an hour so that the storage tank is full
- Switch off the power supply
- Drain off the storage tank by opening the faucet to remove any dust particles from the pipe and storage tank
- Close the faucet & switch on the Power supply
- The purifier is ready to use

Maintenance

To ensure that the purifier operates at its optimum level, a routine maintenance must be performed. The frequency of the maintenance will greatly depend upon the raw water quality and consumption of treated 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 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 space 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 (RO)
-202202	SP	FRT 300/450

Note: Filters and membranes are consumables. Their replacement time depends upon 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 membranes is available on call. The treatment capacity of RO membrane will reduce with time due to clogging of pores of membrane.

"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 or 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

Technical Specifications

Product	KENT Grand Star Alkaline+Copper
Product Code	111101
Product Generic Name	RO Water Purifier
Colour	White
Applications	Suitable for Purification of Brackish/Tap Water Municipal Corporation Water
Weight	8.60 kg
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)
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, Alkaline Filter Copper Filter
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	9 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

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

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.