Instruction Handbook for Installation, Operation and Maintenance.

Kent Deta Hai

Sabse Shudh Paani

Mineral RO TECHNOLOGY
Maintains essential minerals while reducing dissolved impurities with double purification

RO + UF + TDS Control

Reverse Osmosis Water Purifier + Ultra Filtration Purification + TDS Controller

Mineral RO © 2005 - 2012 KENT RO SYSTEMS LTD, the process & purifier is patented vide patent no. 199716.
Welcome to KENT

Dear Customer

Welcome to the world of KENT, leader of water purification industry in India. With a KENT product you, have all the 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 Elite Water Purifier will go a long way in serving you with pure and mineral enriched drinking water, thus keeping you and your family in good health. We assure you, that you will be satisfied with its trouble-free performance and quality, which comes without any compromise.

This manual is an effort towards familiarising you with the operation and maintenance of KENT Elite. Before operating the unit, please read it thoroughly and retain it for future reference. To ensure that the warranty of your water purifier is effective, fill up the enclosed warranty card and send the installation report within 15 days of purchase. 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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KENT Technology - A Breakthrough in Water Purification

KENT proudly presents KENT Elite - a technologically advanced commercial 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+UF+TDS Control System. While the initial purification by RO membrane having porosity as fine as 0.0001 microns effectively removes even dissolved impurities (hard salts, heavy metals, etc.), the double purification by UF process ensures protection against bacteria and viruses. Moreover, the patented TDS Control System intelligently retains essential natural minerals in purified water, thus taking total care of your health and well-being.

Salient Features of KENT Elite

- Suitable for attachment to water coolers.
- Double Purification by RO and Hollow Fibre UF Membrane effectively filter out bacteria, viruses and cysts.
- Adjustable TDS Control System facilitates TDS adjustment in purified water.
- Fully automatic operation with auto-on and auto-off function.
- Tamper-proof RO/UF Membranes fused inside membrane housing.
- Push-fit components for leak-proof & maintenance-free performance.
- Horizontally mounted SMPS for protection against high voltage.
- ABS construction for corrosion-free life span.
- Suitable for Purification of Brackish/ Tap Water/Municipal Corporation Water.
- Filter change alarm to indicate filter replacement time.
- Inbuilt auto flushing system.
- High flow membrane
- High capacity of 40 L/hr.*

Items in the Box

1. KENT Elite Water Purifier : 01 No.
2. 3-Way Connector : 01 No.
3. S.S. Ball Valve : 01 No.
4. Food Grade Pipe (Blue) ¼ inch : 2.5 meters
5. Food Grade Pipe (White) ½ inch : 2.5 meters
6. Screws & Plastic Inserts : 02 Nos. each

* Treatment capacity tested for tap water having TDS level of 750 ppm at room temperature
<table>
<thead>
<tr>
<th>Important Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid exposure to direct sunlight and installation in damp areas.</td>
</tr>
<tr>
<td>Do not place the reject water pipe at a level higher than the purifier, else reject water may flow backwards into the purifier.</td>
</tr>
<tr>
<td>Avoid sharp bends in pipe. Do not block the reject water pipe.</td>
</tr>
<tr>
<td>Use Genuine KENT Spare Parts for optimum performance</td>
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</tbody>
</table>
Reverse Osmosis Process

Reverse Osmosis also known as Hyper Filtration, is the finest filtration process known till date. The process ensures removal of particles as small as ions from a solution. Reverse Osmosis process uses a semi-permeable membrane to reduce the dissolved salts from potable / brackish water. In Reverse Osmosis, water pressure is applied on the inlet impure water resulting into the squeezing of purer water from the concentrated end of membrane towards the diluted end. Dissolved salts present in water as charged ions get repelled by the RO membrane and are not allowed to pass through. Similarly, bacteria and germs are also blocked by the ultra-fine pores of RO membrane. These rejected impurities suspended on the concentrated end of the membrane are washed away in a stream of waste water preventing the membrane from clogging.

UF Process

KENT Ultra- Filtration is a separation process that uses UF membrane with pore size of 0.1–0.01 micron. This UF membrane has the capacity to remove colloidal materials including bacteria, cyst and even viruses from drinking water. Low applied pressure is therefore sufficient to achieve high flux rates from an ultra filtration membrane.

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 outflow of rejected water.
- Improves TDS rejection rate i.e increases RO membranes efficiency.
- Extends life of RO membrane.
The above specifications are subject to modification for improvement without notice.

Electrical Circuit Diagram

- **Item Description**
  - 1. 20016: SMPS
  - 2. 20035: LOW PRESSURE SWITCH (LPS)
  - 3. 20023: AUTO FLUSH PCB
  - 4. 20028: SOLENOID VALVE
  - 5. 20006: BOOSTER PUMP
  - 6. 20059: PUMP HEAD
  - 7. 20036: HIGH PRESSURE SWITCH (HPS)

- **Diagram Elements**
  - **Components**
    - SMPS
    - AUTO FLUSH PCB
    - PUMP
    - SOLENOID VALVE
  - **Connections**
    - 24V DC
    - 24V DC
    - 24V DC
Installation Report

By signing on this Installation report, the customer hereby agrees to the terms & conditions of warranty mentioned on the back side of the warranty card.

Service Providers Stamp:

Service Providers Ph:

Service Providers Address:

Service Providers Name:

Installation Date:

Invoice Date:

Invoice No.:

Customer Signature:

Customer Ph:

Customer Address:

Customer Name:

Serial No.:

Product: KENT Elite
Filter Change Alarm*

KENT Elite Mineral RO™ has an in-built feature that sounds an audible alarm to indicate replacement time for filters. This alarm will be audible after 700 hrs of use since the last filter change (or since the time of installation). The Filter Change Alarm will sound as following:

4 short beeps after every two seconds; for 30 seconds. The alarm will repeat after every 2 hours of use.

30 Sec. 2 Hours 30 Sec.

In case such an alarm is audible, please call the service technician and request him to change the filters of the purifier. However, if the filters are not changed within the next 60 hours of operation, the purifier will stop functioning to ensure purity and hygiene. The following alarm will be audible after 60 Hrs. A continuous beep for an infinite time.

In case, such an alarm is audible, kindly switch off the purifier and call the service technician to replace the filters. In such a circumstance, the purifier will not function unless the filters are changed.

Automatic Operation

- The purifier automatically shuts off when the tank is full.
- The purifier does not start when inlet water supply pressure fall below 0.3kg/cm²
- The purifier automatically restarts when the water level drops below the maximum level.
- The purifier does not allow any water rejection in absence of electricity/when tank is full.
- The purifier automatically flushes & cleans the RO membrane on periodic intervals.

Installation Instructions

KENT Elite is designed to facilitate wall mounting as well as counter-top purification. It is easy and convenient to install.

Recommended Site Preparations:

- Single phase 100-250 V AC, 50 Hz supply not more than 3m away from the point of installation.
- Raw water supply with ½ inch nipple not more than 3m away.
- Drain for reject water not more than 3m away.
- Installation space as per the dimensions of the purifier.
- For proper installation, make sure that the purifier is mounted on a wall surface. Avoid installation on wooden and metallic stands.
- For optimum inlet pressure, source water tank should be at least 10 ft. above the purifier installed.

Installation Procedure:

1. Screw in two 10x50 self taping screws, 234 mm apart horizontally.
2. Wall-mount the purifier with the help of slot holes given on back side.
3. Fasten the SS ball valve to ½ inch port of 3-way connector.
4. Attach the threaded end of 3-way connector to raw water supply and plug off the other end or connect to a tap.
5. Now connect one end of white pipe to SS ball valve and

* Tested & Certified by TUV-SUD South Asia (P) Ltd.
the other end to lower elbow fitting connector labeled as **WATER IN**, on the bottom of purifier.

**Use white pipe for raw water supply**

6. Connect one end of blue pipe to upper elbow fitting connector labeled as **REJECT WATER** and lead the other end to drain.

**Use blue pipe for reject water**

7. Connect the purified water pipe to the water cooler.
8. Turn on the lever given on SS ball valve to initiate the water flow to purifier.
9. Allow the filters to pre-soak in the water for 2-3 minutes.
10. Connect the power supply.
11. Installation is complete.

When the water cooler’s storage tank gets filled up completely the float in the cooler will cut off the RO purified water supply from KENT Elite. This will further create a water pressure. In turn the high pressure sensor installed in the machine will cut off the electric supply to the machine. The purification of KENT Elite will automatically start again as soon as the water level drops.

**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.

We recommend keeping the TDS at lowest possible level but not below 50mg/l.
Starting up the Purifier

- Switch on the power supply.
- Allow water to fill to the maximum level.
- Switch off the power supply.
- Open the faucet and drain water to remove residual dust particles present in the pipes and tank.
- Close the faucet and switch on the power supply.
- Purifier is ready to use.

Recommended Usage of Rejected Water

Although the rejected water has high concentration of salts, it is absolutely clean and free from impurities like chlorine, dirt, sand, etc. This rejected water usually goes down the drain but can be used for gardening purpose. The high concentration of salts and minerals accelerate the plant growth. Rejected water can also be used for cleaning utensils, mopping etc.

Maintenance

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

- Tank must be drained and cleaned once in every 15 days.
- Replace RO membranes once in a year.
- Replace UF membrane once in a year.
- Replace sediment filter, activated carbon filter once in a year or earlier if they get clogged. It is recommended to change FRT along with the filters.

Please note that the replacement time of consumables such as filters and membranes is dependent on the quality of raw water and the quantity of water consumed.

Recommendation for optional Pre-filter installation

![Recommendation for optional Pre-filter installation]

**X No**
If water comes from municipal supply or from an overhead tank.

**✓ Yes**
If water comes from bore-well or it contains heavy sediment particles.

For best results must use only KENT’s Genuine Pre-filter
Recommend Frequency for Filters/Membrane Change

For optimum performance we recommend the following frequency for replacement of cartridges:

Sediment/Activated Carbon → Once in a year or earlier if they get clogged
RO/UF Membranes → Once in a year or earlier if they get clogged

Technical Specifications

<table>
<thead>
<tr>
<th>MODEL NAME</th>
<th>KENT ELITE MINERAL RO™</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model Number</td>
<td>11008</td>
</tr>
<tr>
<td>Application</td>
<td>Suitable for Purification of Brackish/Tap Water Municipal Corporation Water</td>
</tr>
<tr>
<td>Installation</td>
<td>Suitable as attachment to water coolers</td>
</tr>
<tr>
<td>Body Material</td>
<td>ABS Food Grade Plastic</td>
</tr>
<tr>
<td>Mounting</td>
<td>Wall Mounted</td>
</tr>
<tr>
<td>Purification Production Rate</td>
<td>40 L/hr. or 0.83 L/min*</td>
</tr>
<tr>
<td>Max. Duty Cycle</td>
<td>200 L/Day</td>
</tr>
<tr>
<td>Filter Cartridge</td>
<td>Sediment, Activated Carbon</td>
</tr>
<tr>
<td>Membrane Type</td>
<td>Thin Film Composite RO (2)</td>
</tr>
<tr>
<td>UF Membrane</td>
<td>0.1 – 0.01 Micron</td>
</tr>
<tr>
<td>Auto Flushing System</td>
<td>Yes</td>
</tr>
<tr>
<td>Inlet Water Pressure/Temp (Min)</td>
<td>0.3 Kg/cm² or 4.267 psi/10°C or 50°F</td>
</tr>
<tr>
<td>Inlet Water Pressure/Temp (Max)</td>
<td>3 Kg/cm² or 42.67 psi/40°C or 104°F</td>
</tr>
<tr>
<td>Min./Max. Working Pressure</td>
<td>20/150psi</td>
</tr>
<tr>
<td>Min./Max. Operating pH</td>
<td>2-11</td>
</tr>
<tr>
<td>Booster Pump Voltage</td>
<td>24 V DC</td>
</tr>
<tr>
<td>Total Power Consumption</td>
<td>60 W</td>
</tr>
<tr>
<td>Dimension (mm)</td>
<td>415 (L) x 222 (W) x 410 (H)</td>
</tr>
<tr>
<td>Net Weight</td>
<td>14.200 Kg</td>
</tr>
<tr>
<td>Input Power Supply</td>
<td>Single Phase 100 – 250 V AC, 50 Hz</td>
</tr>
</tbody>
</table>

- Purification capacity tested on raw water with TDS level of 750 ppm at room temperature