ESSENCE RO SYSTEM MAINTENANCE SCHEDULE

The system requires very little maintenance. Just change the filter cartridges regularly as suggested below. Keep the system indoors away from extreme hot or cold temperatures, and run the system within its reasonable output capacity (i.e. allow the system to rest at least a few hours a day).

To ensure the longevity and integrity of your drinking water system,
please use genuine APEC Water replacement filter at
WWW.FreeDrinkingWater.com/parts.htm

Stages 1, 2, 3 Pre-Filters: (FILTER-SET-ES) Replace every **6-12 months.**

(Private well water source: may need to replace pre-filters sooner than 12 months due to heavy sediments and other particles.)

Stage-4 Membrane: (MEM-ES-75 or MEM-ES-50)

City Water: Replace every **2-4 years** depending on input water quality, water usage, and pre-filter change maintenance

Private Well Water: Replace every **2 years** depending on well water quality, and pre-filter change maintenance.

Stage-5 Carbon Filter: (FI-ES-TCR-QC) Replace every **2-4 years.** It's best to replace this filter when replacing the stage-4 membrane.

Filter Housing O-rings: We recommend replacing the filter housing O-ring every year or when replacing the 3 pre-filters.

Important! It is important to change the 3 pre-filters timely, at least every 6-12 months. The pre-filters protect the stage-4 membrane. If they are not changed timely and become over-depleted, the membrane life capacity may be reduced and affect contaminant removal and pure water production rate.

It's best to use APEC replacement filters. Using "non APEC"and lesser quality filters may clog up the RO system and damage the membrane.

We recommend that the stage 1-3 filter housings be replaced every 5 years.

FILTER CHANGE INSTRUCTIONS

How To Replace Stages 1, 2, 3 Pre-Filters:

1) **Turn OFF** cold water supply to RO system. Turn OFF tank ball-valve. Turn on the RO faucet lever to relieve the built-up pressure inside the RO system. This will make opening the housings easier.

2) **Open housing**: Have the RO standing upright. Slip the plastic wrench onto the 1st housing. Looking down from a top view, you should open the housing turning ***clockwise.*** If necessary, lay RO down on the floor to get a better leverage. If the housing is too tight, use a hammer and gently tap on the wrench handle to help turn the wrench. See **Fig.14** (**Page 21**).

3) Discard 3 used filters, wash housings with mild soap, rinse off. Put 3 new filters into their respective housings: sediment filter in stage-1, carbon block filters in stages 2 & 3.

4) Close up the housings. Make sure each housing has a **black O-ring** in the thread groves. First hand tighten the housing, then use filter wrench to fully tighten each housing. DO NOT OVER-TIGHTEN.

5) **Turn ON** the cold water supply with the tank ball valve **CLOSED** with RO faucet lever turned on. Please let purified water flow run for 10-15 minutes to a normal water stream to relieve built-up pressure inside the RO unit then **turn OFF** the RO faucet lever and **OPEN** the tank ball valve.

6) Remember: Turn ON the cold water supply and OPEN the tank valve after finished changing filters!

7) Check for leaks!

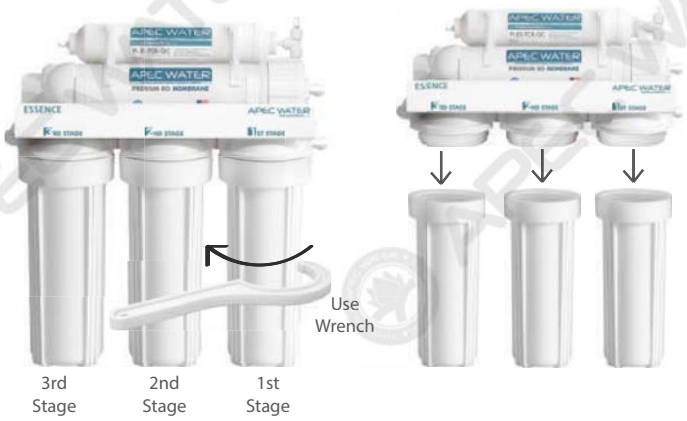

Fig. 14



Turn counter-clockwise to open the membrane housing cap.

Fig. 14A



Fig. 14B

After taking the housing off, take out the dirty filters and put the new 3 pre-filters in. Remember, Stage 2 and Stage 3 are the same carbon filters.

How to Replace Stage-4 Membrane:

1) Turn OFF the cold water supply to RO system. Turn OFF tank ball-valve. Lift up RO faucet lever briefly to relief the built-up pressure inside the RO system. This will make opening the housings easier.

2) See **Fig.14C Page 22.** Locate the Membrane housing on the system (labeled "Membrane"). Remove the WHITE tubing from the housing's cap at **point D**. To remove tubing, Push In and Hold Down on the collet ring square against the fitting. With the collet held in this position the tube can be removed. Open up the cap (turn counter-clockwise) See **Fig.14A**. Using a plier, remove the used membrane for disposal.

3) Once the membrane is removed, please tilt the RO system at an angle to drain out residual water from inside the membrane housing and insert the new membrane using a plier. Push membrane into housing. Avoid touching the Membrane with your hands to prevent contamination!

4) **Important!** Make sure the "double-ring" end of the membrane goes into the housing first as shown in **Fig.14B**. The membrane cannot filter water if it's inserted in the WRONG direction!

5) Close the housing cap. Reconnect the WHITE tubing to the cap. **Turn on** the cold water supply and tank valve. Let the RO system run to re-fill the tank (takes about 2-3 hours).

6) **Check for leaks!**

7) ***Drain the first tank of water (through faucet) to flush out the new membrane!*** The 2nd tank of water is ready for use.

Fig. 14C



How to Replace Stage-5 Carbon Filter:

Replace this last filter at the same time you replace the stage-4 membrane.

1) Remove the OLD filter: See **Fig. 14C.** Disconnect the output tubing from **point H** and tubings at **point G & F**. To remove the tubing, push in and hold down on the collet ring square against the fitting. With the collet held in this position the tube can be removed.

2) Unclip the old filter from the membrane housing and discard the used filter.

3) Sanitize: Use some mild bleach solution to rinse the 2 plastic ports of the Tee fitting and the open port of the new filter. This is to prevent contamination.

   NOTE: Only this filter change needs bleach sanitizing. **Do not** apply chlorine/ bleach in any way to Membrane for it will damage the membrane!

4) Connect New Filter: **See Fig. 14C.** Attach the new filter onto the clips. Make sure the **"FLOW →"** arrow on the filter is pointing towards the pure water output direction. Reconnect the tank yellow tubing and clear tubing from **C4** back to **point G & F** on the Tee fitting. Then, connect the output tubing to **point H**.

5) **Check for leaks!**

* * * End Filter Change Section * * *