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WATER TREATMENT SERIES | R/O

February 2012

This month in our water treatment series we look at Reverse Osmosis R/O.

Reverse Osmosis is one of the processes that makes desalination (or removing salt from seawater) possible. Beyond that, reverse osmosis is used for recycling, wastewater treatment, and purifying water. It is the final stage of water filtration in your plant room after softening and de-chlorination. In your R/O system, pressure is applied to water passing over the membrane. The R/O membrane has a large surface area wrapped around a central core. The water is forced into the membrane and the clean water (permeate) will reach the core of the membrane and go to the Spot Free storage tank. The water that does not make it through to the core is rejected along with all dissolved salts and inorganic molecules which are the cause of “spotting”.

Your R/O system has two flow gauges on the outflows. One showing the reject or concentrate and one showing the permeate or spot free water. Rejecting water is actually an important part of the process as it is this reject water constantly flushing over the membrane that removes the impurities from the system preventing fouling of the membranes and thereby prolonging their lifespan.

You can check the quality of your spot free water with a TDS (total dissolved solids) meter. TDS is measured in parts per million (ppm). When testing the quality of the spot free water it is important to check both the water in the tank and the water being produced by the R/O system as it enters the tank. Whilst the R/O system may be producing good quality water, the tank could become contaminated due to the lid being left off or a faulty check valve. Ideally, for a spot free finish you should be recording a reading of below 10ppm, some systems will attain a 0ppm when supplied with good quality town water.

Pocket TDS Meter – Part # DH62865
Membrane BW30-4040 – Part # DH63513