



Maintenance & Filter Replacement Guide

Below are some general recommendations on the maintenance of the HyperLogic commercial RO system. When the equipment needs to be changed is highly dependent upon the feed water quality, pre-filtration, run time hours, number of membranes, and previous maintenance. There is no prescribed formula for when the equipment should be replaced, which means frequent monitoring and keeping a data log of the system will be crucial for efficiency and prolonging the life of the system.

Maintenance

Membrane Cleaning - In normal operation, the membranes in reverse osmosis membranes can become fouled by mineral scale, biological matter, and grime. These deposits build up during operation until they cause a loss in product water output or an increase in product water TDS, or both. Membranes should be cleaned whenever the product water output rate drops by 10 percent from its initial flow rate (the flow rate established during the first 24 to 48 hours of operation), or when the TDS of the product water rises noticeably.

Common Foulants and Their Associated Symptoms:

Foulant	Symptoms	Solution/Cartridge Part #
Biological Growth	Membrane may have strong odor, possible mold growth on scroll end. Membrane will likely exhibit low permeate flow, but salt rejection will usually be as good if not better than original test.	Organics Removal Cartridge #11917
Carbonate Scale	Carbonate scale is caused by hardness minerals (mostly calcium and magnesium) common in most water sources. The membrane will exhibit low permeate flow and poor salt rejection, and may be noticeably heavier than normal.	Scale Removal Cartridge #11916
Iron Fouling	Rust coloring seen on end of scroll. Possibly some large rust flakes from iron plumbing. Membrane will exhibit low permeate flow and poor salt rejection. Rust colored reject water may be seen on start of baseline test.	Scale Removal Cartridge #11916

Membrane Replacement – Eventually the membranes will become fouled past to point of not being able to clean them anymore, and they will need to be replaced. We recommend budgeting to replace the membranes once per year. Generally, you should consider replacing the membranes after you notice a 60% reduction from the original permeate flow rate (but take temperature and incoming pressure into account). The membrane life span is highly dependent on the source water, pre-treatment, run time hours, number of membranes, and regular maintenance, and could last anywhere between 6 months to 6 years.

Membrane Storage – If the HyperLogic system will not be used for a period of time longer than 1 month, we recommend using the preservative cartridge to immerse the system in a preservative solution (short term) or removing the membranes from the system, wrapping them in a plastic bag, storing them in a storage solution, and placing them in the refrigerator (long term).

Filter Replacement

HyperLogic Sediment Cartridge – We recommend changing the sediment pre-filter cartridge about every 3-4 months. If the pressure drop across the cartridge filter (as indicated by the differential between the filter inlet and filter outlet pressure gauges) increases by 10 psi, then the cartridges should be changed.

Softener Brine Tank – **Make sure that the softener brine tank ALWAYS contains salt** or the softener will not be able to regenerate, causing hard water to pass through the system which will scale up the membranes and need to be replaced. There is not a pre-determined refilling frequency since the softener regenerates based on gallons used since the last backwash, but keep in mind that the system will use about 50 pounds per month, so make sure to keep extra salt on hand. **We recommend checking the brine tank twice per month.**

Carbon Filter – Typically, carbon media will last 3-5 years before needing to be replaced, but we recommend testing the water after the carbon tank for chlorine once or twice per year to ensure that the carbon filter is removing all of the chlorine. If chlorine passes through the membranes, the chlorine will burn through the RO membrane causing an increase in product total dissolved solids.