

Department	HydroLogic		Doc #	SOP – Cleaning Cartridge	
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Standard Operating Procedure (SOP); Membrane Cleaning Cartridge

1. Purpose

The purpose of this SOP is to aid users in the typical use of our Acid and/or Alkaline Membrane Cleaning Cartridges within a Commercial Series RO system; Hawthorne item numbers HGC741680 & HGC741681.

In normal RO operation, despite the source water type, the reverse osmosis membrane element can become fouled by mineral scale, biological matter, and grime. These deposits build up during operation until they cause a drop in Permeate output or loss of salt rejection; sometimes both. **Membrane elements should be cleaned whenever the water output rate drops by 10% from its initial flow rate** (as established during the first 24-28 hours of RO operation), **or when the Permeate tds rises noticeably**. The timing of such cleaning frequency will vary by location and can vary seasonably within a given location.

2. Applicable To

This SOP is applicable to all HyperLogic Commercial Series RO systems [1-12 membranes] with 4x38 or 4x40 RO membranes. This RO series must feature the 20" grey sediment filter housing located under the RO to perform this task.

Common Foulants

Mineral Scale, Hardness & Iron
Biofilms/Organics

Use Hawthorne HGC741680 – Acid pH
Use Hawthorne HGC741681 – Alkaline pH

Cleaning Sequence

Acid pH [HGC741680] > Thorough Flush > Alkaline pH [HGC741681] > Thorough Flush

3. Prerequisites

Ensure you follow all state & federal guidelines for personal workplace safety prior to disassembly and/or maintenance of your HyperLogic equipment & related consumables. Be sure to dispose of unwanted goods appropriately.

4. Materials/Reference

Suggested tools/materials required for this operation include, but may not be limited to, the following:

- Cleaning Cartridge HGC741680/81
- Filter Wrench
- Towels
- Ref. HyperLogic 'Owner's Manual'
- Sediment Filter HGC741681
- DOW Molykote 111 Lubricant
- HyperLogic Maintenance Log sheet
- Ref. SOP – Sediment Filter

5. Procedure

The general steps to perform a HyperLogic RO membrane cleaning cartridge cycle replacement (Hawthorne item HGC741680/81) are as follows:

- a. Place RO in 'Standby.'
 - i. Ensure that all Pressure and Flow Gauges on the RO read '0'.
- b. Disconnect or divert the Permeate line to drain during the cleaning process.
- c. Loosen the grey Sediment Filter housing & remove the Sediment Filter, Hawthorne item HGC7416382, as seen in 'Figure 1'. Refer to SOP – Sediment Filter Replacement for additional details on housing removal and O-ring inspection.



HGC741680/81
Cleaning
Cartridge



HGC741672
Sediment Filter



- d. Replace the Sediment Prefilter with a single-use Membrane Cleaning Cartridge in the grey filter housing; Flow arrow pointing UPWARD.
- e. Reinstall the grey sediment prefilter housing, by hand, securing it in place as shown in 'Figure 1' – **DO NOT OVERTIGHTEN!**
- f. Run RO for 30-40 seconds then press 'Power' button to place RO in "Standby". For RO systems with more than 6 membranes, run two (2) of the same cartridges back-to-back. Do not flush in between.

Note: Instead of time, you may run the system until the pH of the Concentrate is almost the same as the cleaning solution

HGC741680 Acid of 3pH

HGC741681 Alkaline of 10-12pH

- g. Allow the cleaning solution to soak overnight.
- h. Remove the single-use cleaning cartridge and replace it with a new Sediment Filter; Hawthorne item HGC741682. Dispose of the used cleaning cartridge in accordance with its SDS sheet.
- i. Restart the RO, leaving the Permeate to drain. Flush the RO until the Concentrate returns to its normal operating pH.
 - i. If additional cleaning cartridges are to be performed, repeat steps accordingly.
- j. Reconnect or redirect the Permeate to normal operating conditions.
- k. Record the cleaning procedure and sediment prefilter change date on 'HyperLogic Maintenance Log' sheet.

END OF SOP DOCUMENT

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