

# Membrane Cleaning Systems

Capacity: 4" and 8" Membranes

CS  
SERIES

Pure Aqua Clean-in-Place (CIP) Systems are engineered for on-site cleaning of Reverse Osmosis (RO), Nanofiltration (NF) and other membrane-based water treatment equipment. The cleaning skid is designed for manual operation through a local control box located on the skid. A chemical storage tank is connected to the skid with either hard PVC piping or quick disconnect fittings and flexible hoses. This gives the unit the ability to be mounted in a permanent location or portable, if desired.



## Standard Features

- Skid mounted system, plumbed and wired
- 220V/1Ph/60Hz or 460V/3Ph/60Hz power
- 5-micron cartridge filter with PVC housing (all CS4 & CS8-1 to CS8-4), stainless steel housing for CS8-5 & CS8-6
- Local flow meter and pressure gauge
- Manual recirculation line for solution mixing
- Sample valve
- Chemical solution tank with cover
- Manual tank drain valve
- PVC piping and recirculation valve
- Stainless steel cleaning pump
- Tank level switch
- Cartridge filter isolation valve

## Available Options

- Variable Frequency Drive (VFD)
- 220V/1Ph/50Hz or 380-415V/3Ph/50Hz
- pH monitor
- Immersion heater with temperature controller
- Flexible hoses for cleaning connection
- Temperature indicator
- Wheel mounted skids for smaller units
- Chemical tank mixer
- CPVC piping
- 4" or 8" installed pressure vessels
- Low and high pH cleaning chemicals
- All stainless steel piping and/or skid
- Integral mounted, pre-piped, pre-wired directly on the RO skid

## Benefits of Using Membrane Cleaning System

- Restores the original design rates of membranes
- Extends lifespan of membranes
- Enhances recovery and rejection rate percentages
- Keeps the membranes safe from irreparable fouling

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## Membrane Cleaning Process

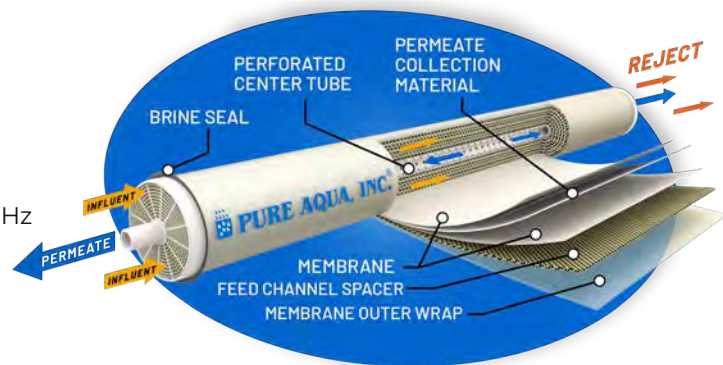
Reverse Osmosis membrane elements can experience a decline in performance due to the accumulation of deposits on the membrane surface. Mineral scale, colloidal particles, biological matter, and insoluble organic compounds are the usual causes of membrane fouling. When production of a Reverse Osmosis system drops by at least 10 percent, or the differential pressure increases by 15 percent (over normal operating conditions), membrane cleaning should be performed.

## Membrane Cleaning Chemicals

Acid and Caustic cleaning chemicals are most commonly used for membrane cleaning. Acid cleaners are designed to remove inorganic and iron deposits. Acid (low pH) cleaning should be performed at a pH of about 2. Caustic (high pH) cleaners are designed for removal of biological matter, organic foulants, and silica deposits. Caustic cleaning is performed at a pH of about 12. Pure Aqua is a global supplier of NSF chemicals (antiscalant & cleaning chemicals).

### Operation Specifications

- 💧 Operating pressure: 35-50 psig
- 💧 Operating temperature: 50-110° F
- 💧 Pump motor power: 460 VAC, 3-phase, 60 Hz
- 💧 Control circuit: 120 VAC, 1-phase, 60 Hz



Model #	Qty of pressure vessels to be cleaned at a time	Tank Capacity (Gal)	Tank Location	CIP Motor HP		Shipping Weight (Lbs)	Dimensions L"xW"xH"
				60 Hz	50 Hz		
CS4-1	1 (4")	50	Tank on Skid	1	1	300	38x55x64
CS4-2	2 (4")	115		1.5	2	350	40x60x68
CS4-3	3 (4")	155		3	2	375	45x72x68
CS8-1	1 (8")	165		3	3	500	53x67x61
CS8-2	2 (8")	200		7.5	5	600	54x67x61
CS8-3	3 (8")	300	Tank off Skid	7.5	7.5	700	78x96x68
CS8-4	4 (8")	310		10	7.5	800	83x91x67
CS8-5	5 (8")	500		15	10	900	88x102x96
CS8-6	6 (8")	550		15	15	980	110x112x75

Note: Dimensions and shipping weights are estimated only. Actual dimensions and weights differ depending on the final system design and options selected.

Pure Aqua also supplies: Custom Engineered Solutions, Multimedia Pretreatment, Activated Carbon Pretreatment, Water Conditioning, Chemical Dosing Systems, Ultraviolet (UV) Sterilizers and Ozonation Systems.

**PURE AQUA, INC.**  
Water Treatment and Reverse Osmosis Systems

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