Silver Stream®

Canadian Crystalline
Nurturing Nature Since 1969

Commercial RO Systems

HIGH OUTPUT RO TECHNOLOGY

* Build as per Aquafina, Bisleri, Pepsi Standard
* Fully Stainless Steel on special request only

Silver Stream® RO SYSTEM

These systems are designed for any application that requires high output Reverse Osmosis equipment. We can also customize these units as per the feed-water parameters, whether it be Bore well or Brackish water.

Our Silver Stream® plants are equipped with large commercial type sediment filter to remove suspended solids down to 5 microns in size. Other standard components include centrifugal high pressure pumps, TFC Membranes, full instrumentation, high pressure regulating valve, analogue / digital water quality meter and a built-in membrane cleaning and preservation system.

All of the components are of the highest quality and arranged on a single compact frame for the maximum utilization of space. The Silver Stream® equipment can be custom designed to work with feed-water that contains up to 12,000 PPM (parts per million) of total dissolved solids (TDS).

Our Commercial ***SILVER STREAM*** systems are designed for Brackish Water Applications where high output is required such as Packaged Drinking Water Plants, Automatic Bottling Plants, Domestic, Industrial, Commercial establishments, Real Estate developments etc. These units include the State of the Art Reverse Osmosis Technology that allows fully automatic operation.

BWW BOTTLE WATER WORLD

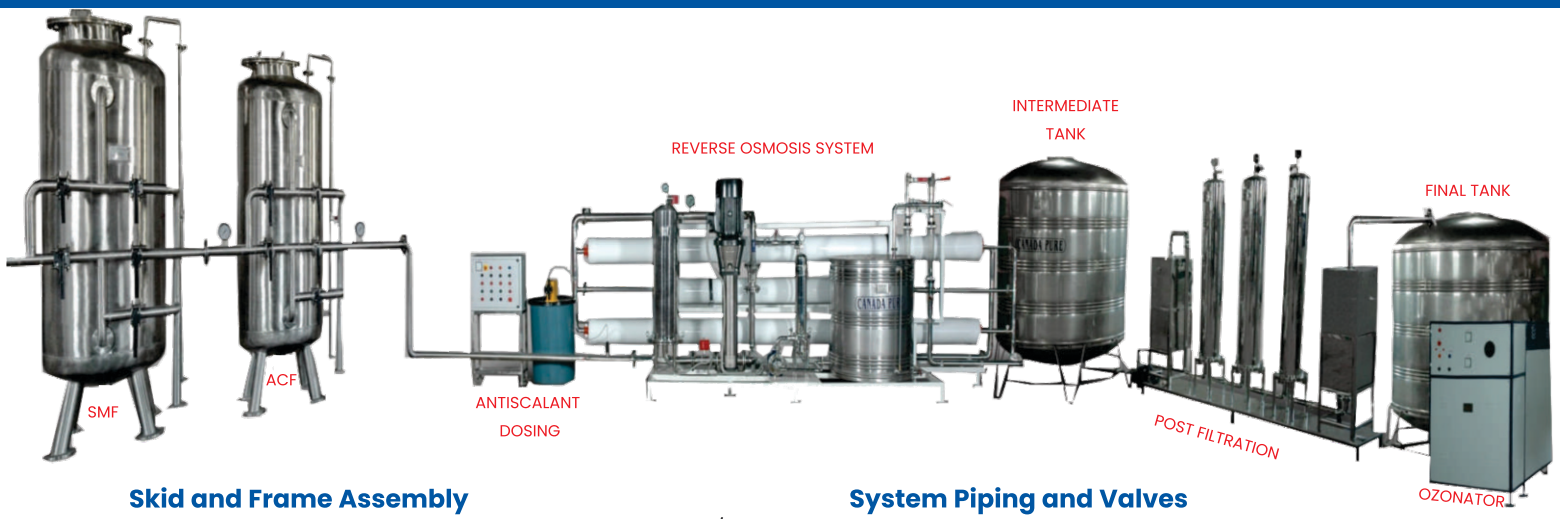
TÜV MANAGEMENT SERVICE ISO 9001

MEMBER INTERNATIONAL BOTTLED WATER ASSOCIATION

Water Quality® Association

AWA australian water association

Silver Stream® RO SYSTEM



Skid and Frame Assembly

All membrane systems are manufactured in a skid / frame design providing for ease of installation with minimum floor-space requirement. Constructed of welded structural carbon steel tubing, finished with corrosion resistant epoxy paint coating. Stainless steel fastener hardware is standard for corrosion resistance.

Cartridge Pre-Filtration Vessel

Pre-filtration of the membrane feed is standard on all systems. Filter housing is constructed of 304 stainless steel. Filter cartridges are pure polypropylene with a 5.0-micron nominal rating.

System Pressure Pump

Standard pressure pumps are constructed with a 304 / 316 stainless steel housings and impeller / diffuser stage assemblies. Pumps are equipped with TEFC motors wired for 230 / 460 VAC voltage and rated for full load, continuous duty.

Membrane Pressure Vessels

All systems feature membrane pressure vessels constructed of fiberglass reinforced polyester (FRP) with 316 stainless steel side-entry feed / concentrate ports. Standard vessels have a white polyurethane finish. Operating rating of pressure vessels is 400 psig. Higher pressure ratings and ASME code-stamping is available on all pressure vessels.

Membrane Elements

Standard reverse osmosis (RO) membrane elements are high rejection, thin-film composite (TFC) type in a spiral-wound configuration. Membrane elements are tested at 99.5% average salt rejection. All membrane elements carry a three-year warranty against defects in quality and workmanship.

Instrumentation

All systems feature a complete instrumentation package for optimal performance monitoring. Each of the following instruments are completely panel-mounted and pre-wired:

- Pre/Post cartridge filter pressure gauges
- RO feed/interbank pressure gauges
- Product/reject pressure gauges
- RO inlet/pump discharge pressure switches
- Product/reject electronic flow meters
- Product conductivity monitor
- System temperature indicator
- Pump run hour meter

System Control

Operations of the system are automatically controlled through a comprehensive programmable logic controller (PLC) package housed in a NEMA-4 industrial electrical enclosure. The control system also includes a pre-wired motor starter, operator switches / pushbuttons, and status / alarm indicator lights. Standard systems include the following isolated alarm conditions:

- Low inlet pressure
- High pump discharge pressure
- High RO product conductivity

System Piping and Valves

All membrane systems are completely pre-piped to the fullest extent and installation ready. Schedule 80 PVC is standard material for all piping and valves under 75 psig operating pressure. Higher pressure piping and valves are constructed of 304 stainless steel using. The following valves are provided as standard for accurate flow/pressure control and convenient operation:

- Automatic inlet valve to prevent water flow through machine during shutdown
- Pressure pump discharge throttle valve
- RO reject/recirculation flow control valves
- Automatic system flush valve for prevention of membrane fouling and scale formation
- Pre/Post cartridge filter housing isolation valves
- Inlet, product, and reject sampling valves
- Individual membrane housing product sampling valves.
- Isolation valves and blind ports for use with membrane cleaning systems

SYSTEM OPTIONS

Machine Hardware

- 304 stainless steel skid and frame assembly
- 316 stainless steel pre-filter housing
- 316 stainless steel high pressure piping / valves
- Premium efficient pressure pump motor

Instrumentation

- Digital inlet feed-water pH monitor/controller
- Digital inlet feed-water ORP monitor/controller
- Inlet feed-water hardness monitor
- Inlet feed-water turbidity monitor
- Silt Density Index (SDI) test assembly
- High RO product pressure alarm / shutdown
- RO product divert valve
- Touch-screen operator control monitor

RO Product Storage and Distribution Systems

- FRP and HDPE storage tanks with level controls
- Repressurization pumps and controls

Pre-Treatment Systems

- Multi-media filters
- Activated carbon filters
- Water softener systems
- Inlet feed-water pH adjustment chemical addition
- Inlet feed-water anti-scalant chemical addition
- Inlet feed-water dechlorination chemical addition
- Inlet feed-water heat exchanger systems

Post-Treatment Systems

- UV sterilization
- Polishing cartridge filter housings

Membrane Cleaning and Maintenance

- Skid mounted membrane Clean-In-Place (CIP) systems
- RO product water membrane flush system
- RO system performance evaluation software.

TECHNICAL SPEFICIATION

Model	Capacity (LPH)	Element Quantity	RO Feed (LPH)	RO Reject (LPH)	Operating Pressure (bar)	Power (HP)
CCRO-2BW4H	250	1	357	107	7	2
CCRO-5BW4H	500	2	714	214	7	3.5
CCRO-10BW8H	1000	1	1429	429	7	7.5
CCRO-20BW8H	2000	2	2857	857	7	9.5
CCRO-30BW8H	3000	3	4286	1286	7	11.5
CCRO-40BW8H	4000	4	5714	1714	7	12.5
CCRO-50BW8H	5000	5	7143	2143	7	15.5
CCRO-60BW8H	6000	6	8571	2571	7	19
CCRO-80BW8H	8000	8	11429	3429	7	22
CCRO-100BW8H	10000	10	14286	4286	10	28.5
CCRO-120BW8H	12000	12	17143	5143	10	34
CCRO-150BW8H	15000	15	21429	6429	10	39
CCRO-200BW8H	20000	20	28571	8571	10	55
CCRO-250BW8H	25000	25	35714	10714	12	70.5
CCRO-300BW8H	30000	30	42857	12857	12	98
CCRO-400BW8H	40000	40	57143	17143	12	120
CCRO-500BW8H	50000	50	71429	21429	12	150

SEA WATER OR FEED WATER TDS UP TO 35,000 PPM AND ABOVE

(Standard models between 500 LPH to 50000 LPH available on request)

Operating temperature range: 10 – 40° C
Maximum inlet free chlorine: <0.3 ppm
Maximum inlet silt density index (SDI): 3.0
Standard electrical power: 420 VAC, 3-phase, 50 Hz.
Nominal system TDS reduction: 95% – 99%
Nominal system overall recovery rate (product/feed): 70% – 80%
Projected performance and operations based on inlet feed of 2000 ppm TDS.

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