



High Purity Water Treatment Systems
CANADIAN WATER TECHNOLOGIES LTD

Ultrapure Quality for Dialysis

Up to 30 beds

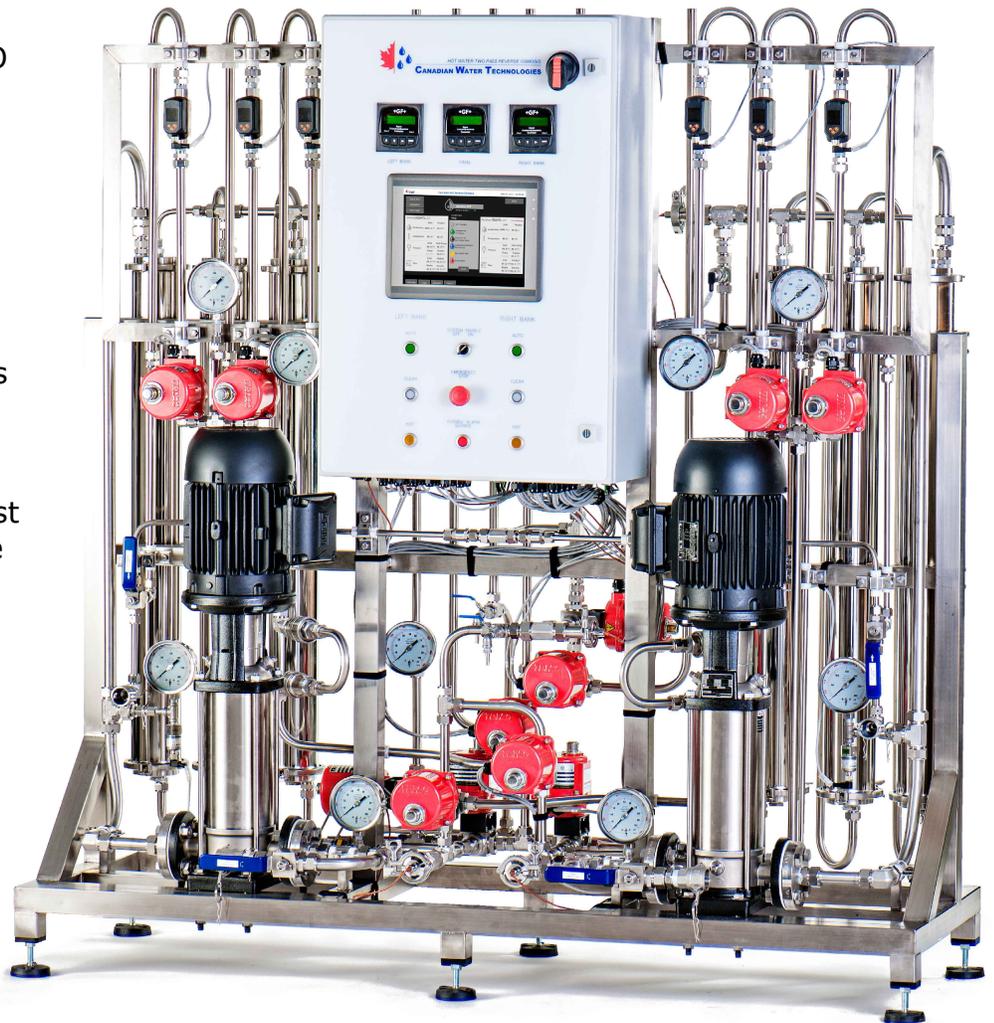
HDF ready. Meets or exceeds ISO 13959 Water for haemodialysis and related therapies

Licensed as a Medical Device Component by Health Canada under ISO 13485

Two pass reverse osmosis with failsafe single pass mode ensures the highest quality of water and uninterrupted operation

Ultrapure output with the smallest footprint in its class, for even the most confined clinics

Available with optional heat sanitizable membranes for safe, effective and fully automated sanitization of the entire product water path



RO-HDU2HS4D3 shown



What does smart machine design mean?

The first response is to inhibit to maintain operation. This machine is proactive vs. reactive. Let's look at some scenarios to see how that actually plays out:



1. Reduction in feed water pressure

Traditional: As the feed water pressure drops below the setpoint, the system alerts, then alarms. As the pressure continues to drop, the system shuts down and locks out. Staff are exposed to multiple incrementing alarms. Upon resumption of water pressure, the system needs to be reset manually to continue operation, including a start-up process which takes between 2 and 5 minutes.

Smart: As the feed water pressure drops below the setpoint, the system reduces the output of the pumps until the pressure stabilizes. If the pressure continues to drop, the system generates an alert. Upon resumption of water pressure, the system automatically increases the output of the pumps to nominal levels.



2. Increase in feed water temperature

Traditional: As the feed water temperature rises above the setpoint, the system alerts, then alarms. As the temperature continues to rise, the system shuts down and locks out. Once the root cause of the temperature issue has been found and repaired, the pre-treatment needs to be manually flushed over a period of minutes or hours, and the system needs to be reset manually to continue operation. Upon system reset, if the system has not cooled, it will immediately alarm again and lockout. This process of reset -alarm must be continued until all the hot water is flushed out of the system.

Smart: As the feed water temperature rises above the setpoint, the system alerts. As the temperature continues to rise, the system alarms and moves into a flush mode. Once the root cause of the temperature issue has been found and repaired, the pre-treatment is flushed automatically through the RO system. Once the temperature has reduced, the RO will automatically continue normal operation.

Annual Services Required

	Hot membranes and loop	Hot loop only	Cold loop
System chemical sanitization	1	1	1
Loop chemical sanitization	0	0	12
RO sanitization	0	4	4
RO cleaning	1	4	4
	2	9	23

NOTE: These figures represent typical recommended services per year and are intended for comparison purposes only. Actual service frequencies may vary depending on inlet water composition and local regulations.

Heat vs. Chemical Sanitization



HS – Heat Sanitizable



CS – Chemical Sanitizable

Residual	High temperature – risk decreases with time.	Chemical disinfectant – risk decreases only with a quality rinse and testing by a qualified tech.
Operator Involvement	Fully Automatic	Prompted, Manual, Overtime.
Training Required	Minimal	Extensive
Consumables	None	Chemical storage, Compliance with WHIMIS / TDG
Operation and control	Smart machine design with 12.1" heads-up style interface	Traditional 9" process-based machine design and interface
Membrane Configuration	Symmetrical (left or right pass leads) for even membrane loading and optimization of sanitization	Traditional (left pass only leads)

Specifications

HS (Heat Sanitizable)

CS (Chemical Sanitizable)

Dimensions	72" W x 30" D x 72" H	72" W x 30" D x 72" H
Weight (Approx)	850-1100 lbs	750-1000 lbs
Product Flow ¹ (Nominal)	5000 - 13000 USGPD (3-8 membranes)	6000 - 16000 USGPD (3-8 membranes)
Membrane Rejection ²	99.5%	99.5%
Inlet TDS	<2000 ppm	<2000 ppm
Inlet Pressure	20-100 psi	40-100 psi
Power Requirements	1x 120 VAC, 60 Hz, 5A max (UPS supply) AND 1x 3ph 208 VAC -OR- 1x 3ph 600 VAC	1x 120 VAC, 60 Hz, 5A max (UPS supply) AND 1x 3ph 208 VAC -OR- 1x 3ph 600 VAC
Pump	Multi-stage centrifugal	Multi-stage centrifugal submersible
Membrane Configuration	Symmetrical (Worker and polisher swap)	Conventional (Left worker, right polisher)
Machine Design	Smart	Conventional
Screen	12.1" touchscreen w/ heads-up interface	9.7" touchscreen w/ process interface
Operating Temperature	5-35 C	5-35 C
Sanitization Temperature	80 C	n/a
Storage Temperature	5-50 C	5-50 C
Inlet Water Temperature	5- 40 C	5- 40 C

1 Actual product flow varies based on feed water composition, temperature and operating pressures. Additional flow is available with the RO-HDH2 line which utilizes 8 inch membranes.

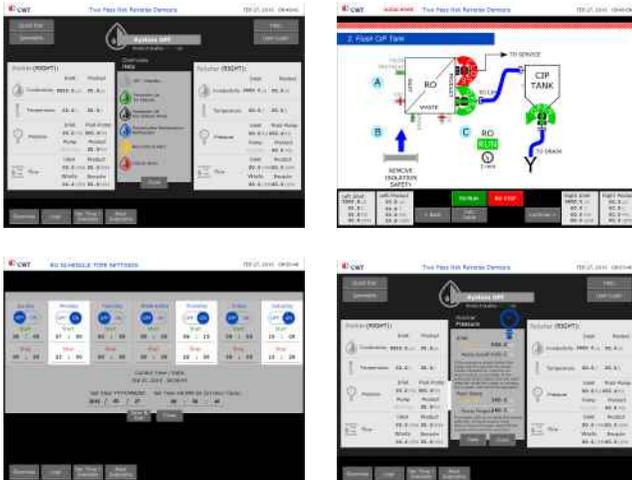
2 Actual rejection percentage depends on feed water composition and membrane selection.

Service and Support

Our commitment to world class technology doesn't end at installation. To help you realize the most benefit of your product, Canadian Water Technologies provides a practical, informative training curriculum. Training is included with all system installations and follow up training service is available upon request.

We also offer:

- Service contracts (full or shared)
- Cleaning and sanitization services
- Emergency on-call response
- Phone support



The heat sanitizable RO features an all-new interface designed to show the status of the machine at a glance, complete with advanced logging and diagnostics

