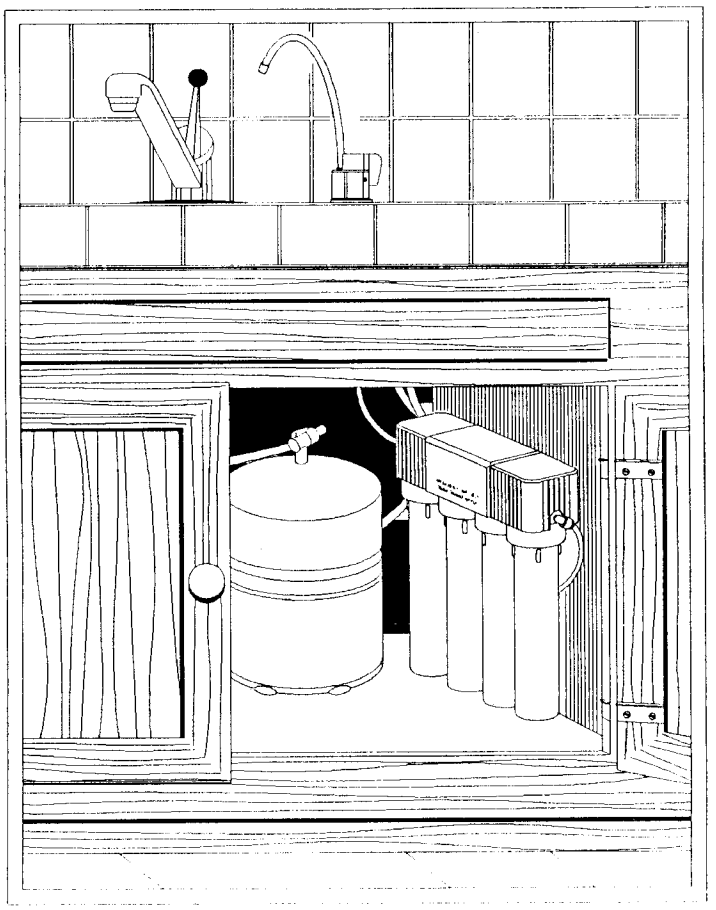
Performance Data Sheet

Advanced Reverse Osmosis Water Treatment Systems
With Smartap® Water Quality Monitor



Models
10103, 10104, 10105, 10106, 10107
THIN FILM COMPOSITE MEMBRANE

hydrotech®

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Performance Data Sheet

Hydrotech® 101 Series

NSF

Advanced Reverse Osmosis Drinking Water Treatment Systems

4 Vessel Unitary Manifold
Smartap® Water Quality Monitor
Thin Film Composite Membrane

MODEL NUMBERS

SELECT MONITOR, FAUCET, OUTPUT, AND CLAIMS. CROSS REFERENCE SELECTION TO CODES FOR MODEL NUMBER

Module Configuration			Output Designation**					Reduction Claims	
Water Quality Monitor	Faucet	Series	9	15	25	35	45	General	Nitrates*
Pushbutton Smartap®	Polymer, Stainless Steel, or Chrome	101	03	04	05	06	07	101	103*
Faucet Smartap®	Polymer, Stainless Steel, or Chrome	101	03	04	05	06	07	102	104*
System Tested and Certified by NSF International against ANSI/NSF 53 and 58 for Specific Contaminants Listed in this Performance Data Sheet									

** Manufacturer's Reference Designation Only. Refer to Output Performance table for certified output performance.

CHEMICAL REDUCTION PERFORMANCE

Organic and Inorganic Contaminants		Influent Average mg/L	Effluent Average mg/L	Rejection Average %	Effluent Maximum mg/L	Rejection Minimum %	EPA Maximum Contaminant Level (MCL) or Action Level mg/L
Barium	(Ba)	10.7	0.15	99%	0.60	94%	2.0
Cadmium	(Cd)	0.03	0.0005	98%	0.00077	97%	0.005
Hexavalent Chromium	(Cr_6)	0.15	0.022	86%	0.049	67%	0.05
Trivalent Chromium	(Cr_3)	0.17	0.02‡	88%	0.02‡	88%	0.05
Copper	(Cu)	2.94	0.038	99%	0.074	97%	0.2
Lead	(Pb)	0.146	0.0011	99%	0.0015	99%	0.015
Nitrate/Nitrite*	(N)	7.3	0.685	87%	0.843	86%	10.0
Radium 226/228†	(Ra)	25pCi/L	5pCi/L	80%	5pCi/L	80%	5pCi/L
Selenium	(Se)	0.1112	0.0042	96%	0.01	91%	0.05

*This system is acceptable for treatment of influent concentrations of no more than 27 mg/L nitrate (NO_3) and 3 mg/L nitrite (NO_2) in Combination measured as 7.8 mg/L nitrogen (N) and is certified for nitrate/nitrite reduction in water supplies with a pressure of 280 kPa (40 psig) or greater. This system is not available in California

† Barium used as surrogate for Radium under NSF protocols. ‡ Minimum Detection Level (MDL).

MECHANICAL FILTRATION

Contaminant Reduction Performance	Influent Average/ml	Effluent Average/ml	Rejection Average %	Effluent Maximum/mil	Rejection Minimum %	NSF Requirement % Rejection/Max NTU
Asbestos	671 mfp/L	0.347 mfp/L	99.95%	3.7 mfp/L	99.45%	7 million fibers per Liter (mfp/L)
Cysts	102,938	6.5	>99.99%	56	99.95%	99.95% 3 - 4 micron size
Turbidity	19.4 NTU	0.10 NTU	99.5%	0.19 NTU	99%	1.0 NTU
Chlorine# (Cl_2)	1.98	0.115	94%	0.37	81%	Class I >75%

NOTE: Certified for Cyst Reduction including Cryptosporidium parvum ococysts and cysts of Giardia and Entamoeba.

System Tested and Certified by NSF International against ANSI/NSF 42 to a capacity equal to total influent water volume processed in 9 months.

OUTPUT

TOTAL DISSOLVED SOLIDS (TDS) REDUCTION AND SYSTEM PRODUCTION							
Model Number	Influent Avg mg/l	Effluent Avg. mg/l	Reject Avg %	Effluent Max. mg/l	Reject Min %	Production Rate	Recovery Rating
10103	795	19	98%	24	97%	19 Liter/day (5 gal/day)	34%
10104	795	51	94%	74	91%	27.6 Liter/day (7.3 gal/day)	25%
10105	760	22	97%	28	96%	28.3 Liter/day (7.5 gal/day)	21%
10106	761	32	96%	44	94%	34 Liter/day (9 gal/day)	24%
10107	796	39	95%	58	93%	45 Liter/day (12 gal/day)	24%

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TEST SPECIFICATIONS

Influent Water Parameters			
Contaminants	Chemical and Nitrate Reduction	TDS and Output	Mechanical Filtration
TDS	750 mg/L	757 mg/L	200-500 mg/L
pH	7.5	7.1	7.0 - 8.0
Turbidity	<1.0 NTU	<1.0 NTU	1.0 NTU
Temperature	25° C (77° F)	25° C (77° F)	20° C (68° F)
Pressure	345 kPa (50 psig)	345 kPa (50 psig)	414 kPa (60 psig)

CONDITIONS FOR SYSTEM USE

MEMBRANE TYPE: THIN FILM COMPOSITE

Source Water Supply Profile		Chemical Parameters		Max mg/L
Community/Private	Chlorinated/Non-chlorinated	Hardness	($CaCo_3$)	<350
System Pressure	280-690 kPa (40-100 psig)	Iron	(Fe)	<0.1
Temperature	4°-38° C (40°-100° F)	Manganese	(Mn)	<0.05
pH Range	3.0 - 11.0	Hydrogen Sulfide	(H_2S)	0.00
Maximum TDS Level	2000 mg/L	Residual Chlorine	(Cl_2)	<2.0
Turbidity	<1.0 NTU	* Silt Density Index: Value stated in SDI units.		
Maximum SDI*	<4.0			

SMARTAP® WATER QUALITY MONITORS

Our *patented* water quality monitor uses dual probe LOGIC PULSE MEMORY technology to accurately indicate membrane performance. A split-second power pulse compares the Total Dissolved Solids (TDS) level of feed water with that of product water. Then, by reversing polarity of the electronic pulse, probes are cleaned and kept free of chemical plating. A nine-volt alkaline battery provides power to Monitor. To prolong battery life, indicator lights self-extinguish after a few seconds even if button is still pressed or water continues to be dispensed.

PUSHBUTTON SMARTAP®

Pressing a test button located on the manifold cover activates monitor. When button is pressed, and momentarily held down, the monitor instantly checks TDS levels and reports membrane status by illuminating either a green or yellow light located next to test button.

FAUCET SMARTAP®

Opening the product water faucet or extra point-of-use device activates monitor. When monitor is activated, it instantly checks TDS levels and reports membrane status by illuminating a green or yellow light located at faucet base or on faucet body.

OPERATIONAL DESCRIPTIONS

a. Factory Specifications rated at water pressure of 414 kPa (60 psig), temperature of 251 C (771 F), and >350 mg/l TDS.

b. Actual Production/Flow Rates vary according to water temperature, pressure, TDS levels, membrane variations, and customer usage.

c. This system cleans itself automatically by rinsing concentrates from the membrane vessel.

d. System performance may vary according to local water conditions. Contaminants listed in this Data Sheet are not necessarily in your water.

e. Patented Fail Safe Flow Control Valve ensures product water is never contaminated by reject water. If product pressure exceeds specifications, the Control Valve relieves the excess pressure and prevents membrane damage.

f. System has been tested and operates at the specified recovery rating under standard test conditions as specified in ANSI/NSF Standard 58. The recovery rating is a percentage measure of the amount of influent water which is delivered as permeate under open permeate discharge conditions.

WE RECOMMEND YOUR WATER BE TESTED TO DETERMINE SYSTEM REQUIREMENTS

This drinking water system is for use on potable water supplies only.
Source water exceeding Chemical Parameters requires pretreatment.
System can be used on disinfected water that may contain filterable cysts.

CAUTION

DO NOT USE THIS SYSTEM WHERE WATER IS MICROBIOLOGICALLY UNSAFE OR WITH WATER OF UNKNOWN QUALITY WITHOUT ADEQUATE DISINFECTION BEFORE OR AFTER THE SYSTEM.

System Tested and Certified by NSF International **against ANSI/NSF Standard 58 for reduction of:**

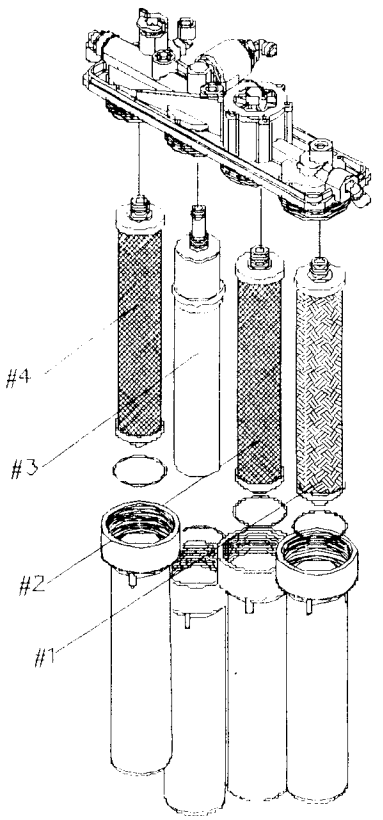
Asbestos, Barium, Cadmium, Copper, Cysts, Hexavalent Chromium, Trivalent Chromium, Radium 226/228, Lead, Nitrate/Nitrite, Selenium, Turbidity, Total Dissolved Solids (TDS)

PARTS INFORMATION

Manufacturers Suggested Retail Price (MSRP)

Item	Replacement Element	Part No.	MSRP
1	Polypropylene Sediment Filter	41400008	30.00
2	Carbon Pre-Filter - CTO	41400009	40.00
3	Membrane - Model 10103	41400003	150.00
	Membrane - Model 10104	41400004	
	Membrane - Model 10105	41400005	
	Membrane - Model 10106	41400006	
	Membrane - Model 10107	41400007	
4	Carbon Post-Filter - CTO	41400009	40.00
n/s	Battery, 9 volt alkaline	31300001	3.00

PARTS LOCATOR - 101 SERIES



MAINTENANCE AND WARRANTY INFORMATION

REFER TO INSTALLATION AND SERVICE GUIDE FOR DETAILED OPERATION, MAINTENANCE, AND WARRANTY INFORMATION

Routine Maintenance Requirements	Hydrotech® Warranty
Replace filters every 6 to 12 months Replace membrane as required based on periodic TDS rejection tests or Smartap® monitor indication. Maximum recommended service life for membrane is 36 months.	System: 2 years limited Membrane: 12 months prorated Smartap®: 5 years

This system contains components that are critical for the effective reduction of Total Dissolved Solids. These components, by the very nature of the processes involved, have a finite life span. We strongly recommend that the user test the product water at regular intervals (six months minimum) to ensure the system is performing satisfactorily. The test is performed using the Smartap® Water Quality Monitor. Compliance with operational, maintenance, and component replacement requirements is essential for this drinking water system to perform as specified.

PARTS AND SERVICE AVAILABLE THROUGH YOUR HYDROTECH® DEALER.

DISTRIBUTED BY:

BUYER: _____

SELLER: _____

OUR DRINKING WATER SYSTEMS ARE FACTORY TESTED, SANITIZED, AND PREPARED FOR INSTALLATION

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Part No. 36101105