WaterGroup

12403 Reverse Osmosis Drinking Water System Performance Data Sheet

These models are tested and certified by WQA against NSF/ANSI 58 for the reduction of TDS: 4VTFC09G-PB, 4VTFC25G-PB, 4VTFC50G-PB, 4VTFC75G-PB

MODELS AND SYSTEM CONFIGURATIONS

Table 1

Model Description	Storage Tank	# of Vessels	Storage Tank Capacity Litres (gal)	Vessel 1	Vessel 2	Vessel 3	Vessel 4	Daily Production Rate[2] L/day (G/day)	Efficiency Rating[3] %	Recovery Rating[4] %	Monitor[6]
4VTFC09G-PB	Plastic/Metal	4	6.81 (1.8)	Sediment Filter	Carbon Filter	TFC[1] Membrane	Carbon Filter	15.5 (4.1)	12.8	35	Smartap® Push Button
4VTFC25G-PB	Plastic/Metal	4	7.19 (1.9)	Sediment Filter	Carbon Filter	TFC[1] Membrane	Carbon Filter	29.1 (7.7)	8.2	18	
4VTFC50G-PB	Plastic/Metal	4	6.81 (1.8)	Sediment Filter	Carbon Filter	TFC[1] Membrane	Carbon Filter	34.44 (9.1)	4.8	16.7	
4VTFC75G-PB	Plastic/Metal	4	7.19 (1.9)	Sediment Filter	Carbon Filter	TFC[1] Membrane	Carbon Filter	49.58 (13.1)	5.7	15.3	

These 12403 Series Reverse Osmosis Systems conform to NSF/ANSI 58 for the specific performance claims as verified and substantiated by test data.

CONDITIONS FOR USE

Table 2

Source Water Supply Profile		Chemical Parameters	Max mg/L
Community/Private	Chlorinated/Non-Chlorinated	Hardness ($CaCO_3$)	<350 (20 gpg)
Feed Water Pressure[5]	242-690 kPa (35-100 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	** Nephelometric Turbidity Unit *** Silt Density Index: Value stated in SDI units.	
Maximum SDI***	<4.0		

NOTES:

1. TFC refers to reverse osmosis membranes constructed from a THIN FILM COMPOSITE
2. The daily production rate is the volume of product water produced by the system per day and is determined by testing in accordance with the procedure outlined in NSF/ANSI Standard 58.
3. System's Efficiency rating as verified by testing in accordance with NSF/ANSI standard 58. Efficiency rating means the percentage of the influent water to the system that is available to the user as reverse osmosis treated water under operating conditions that approximate typical daily usage.
4. System's Recovery rating as verified by testing in accordance with NSF/ANSI Standard 58. System's Recovery rating means the percentage of the influent water to the membrane portion of the system that is available to the user as reverse osmosis treated water when the system is operated without a storage tank or when the storage tank is bypassed.
5. PRESSURE REGULATOR IS RECOMMENDED FOR FEED WATER PRESSURES EXCEEDING 552 kPa (80 psig)
6. SMARTAP® PUSH BUTTON MONITOR. Indicator lights located on the module cover report system status.

PERFORMANCE DATA

This system has been tested according to NSF/ANSI 58 for reduction of the Total Dissolved Solids (TDS). The concentration of the TDS in water entering the system was reduced to a concentration less than or equal to the permissible limit for water leaving the system, as specified in NSF/ANSI 58.

System Conforms to NSF/ANSI 58 for Specific Performance Claims as Verified and Substantiated by Test Data										
Total Dissolved Solids (TDS) Reduction								Daily Out put		
Model Description	Storage Tank	Average** Influent Concentration mg/L	Average** Effluent Concentration mg/L	Average** Reduction*** (%)	Lowest Reduction (%)	Average** Recovery (%)	Average** Efficiency Rating (%)	Average** Daily Production L/day (G/day)	Average** Storage Tank Capacity Litres (gal)	Monitor[4]
4VTFC09G-PB	Plastic/Metal	766.6	36	95.3	94.6	35	12.8	15.5 (4.1)	6.81 (1.8)	Smartap® Push Button
4VTFC25G-PB	Plastic/Metal	717.5	66.1	90.8	88.7	18	8.2	29.1 (7.7)	7.19 (1.9)	
4VTFC50G-PB	Plastic/Metal	714.5	95	86.7	84.0	16.7	4.8	34.44 (9.1)	6.81 (1.8)	
4VTFC75G-PB	Plastic/Metal	766.6	154.9	79.8	76.1	15.3	5.7	49.58 (13.1)	7.19 (1.9)	

NOTES:

* The testing was performed under standard laboratory conditions, actual performance may vary.

**Average concentrations shall be arithmetic mean of all reported influent challenge or product water concentrations (the detection limit value shall be used for any nondetectable concentrations). The specified percent reduction shall not be greater than the reduction calculated using arithmetic means of the influent challenge and the product water concentrations respectively.

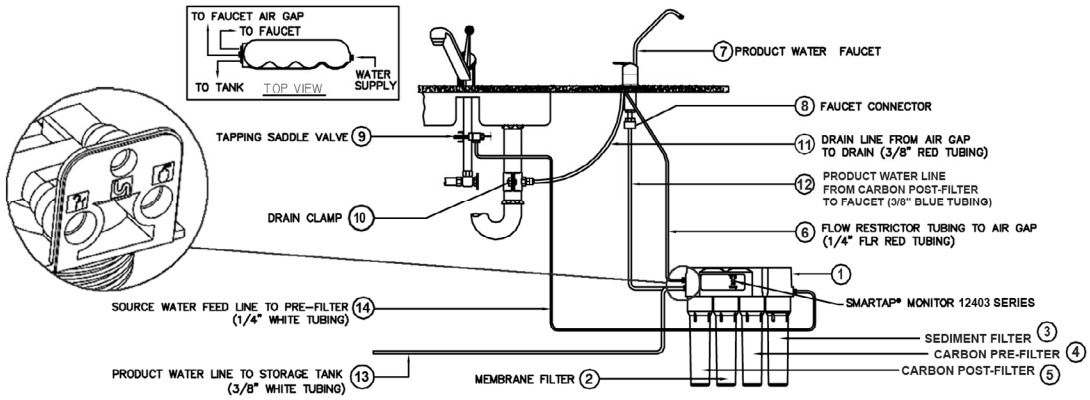
*** Minimum TDS reduction per NSF/ANSI 58 is 187 mg/L

1. The daily production rate is the volume of product water produced by the system per day and is determined by testing in accordance with the procedure outlined in NSF/ANSI Standard 58.
2. System's Efficiency rating as verified by testing in accordance with NSF/ANSI Standard 58. Efficiency rating means the percentage of the influent water to the system that is available to the user as reverse osmosis treated water under operating conditions that approximate typical daily usage.
3. System's Recovery rating as verified by testing in accordance with NSF/ANSI Standard 58. System's Recovery rating means the percentage of the influent water to the membrane portion of the system that is available to the user as reverse osmosis treated water when the system is operated without a storage tank or when the storage tank is bypassed.
4. SMARTAP® PUSH BUTTON MONITOR. Indicator lights located on the module cover report system status.

GENERAL INFORMATION

This Owner's Guide covers all components that may be included with a system. Information relating to any component that is NOT included with your system may be disregarded.

SYSTEMS WITH AIR GAP FAUCET, MODEL 12403



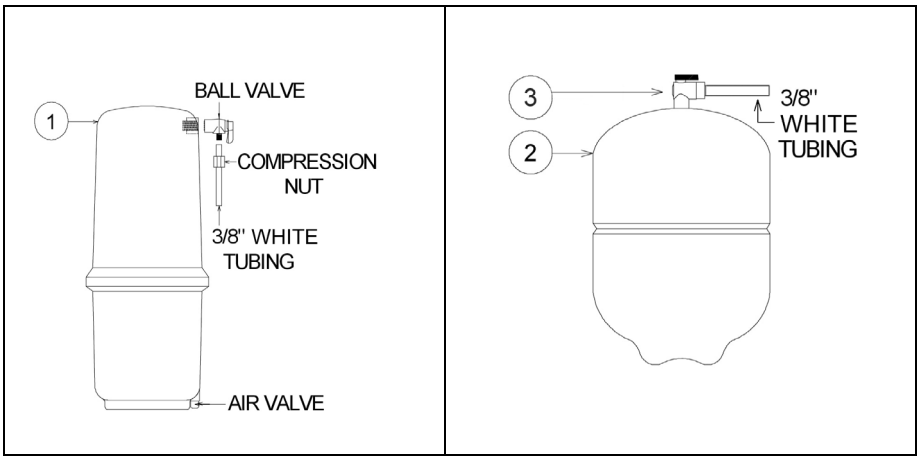
REVERSE OSMOSIS SYSTEM		
Item	**Description**	**Part No.**
1	4 Vessel Module, With Quality Monitor	Fig 8
	MEMBRANE AND FILTERS	
2	Reverse Osmosis TFC Membrane	
	9 GPD, Yellow Casing, Red Tape	33001071
	25 GPD, Yellow Casing, Black Tape	33001068
	50 GPD, Yellow Casing, White Tape	33001033
	75 GPD, Yellow Casing, Blue Tape	33001056
3	Sediment Filter	41400008
4	Carbon Pre-Filter	41400009
5	Carbon Post Filter	41400009
	FLOW RESTRICTOR TUBING	
6	Flow Restrictor Tubing	
	9 GPD	40600034
	25 GPD	40600040
	50 GPD	40600041
	75 GPD	40600042

PRODUCT WATER FAUCETS		
Item	**Description**	**Part No.**
7	Chrome-Plated Metal, Air Gap	92192, Fig 7
8	Connector, Faucet 3/8" x 7/16"	92407
	INSTALLATION KIT	
	Complete Kit	
9	Supply Valve, Saddle-Tapping	92276
10	Drain Clamp, Saddle Clamp, Air Gap, 3/8"	92160
11	Tubing, 3/8", Red	87604
12	Tubing, 3/8", Blue	87600
13	Tubing, 3/8", White	115207
14	Tubing, 1/4", White	115200
n/s	Screw, Mounting Bracket (2 each)	32701006
n/s	Elbow, Stem, 3/8" (2 each)	33501071
n/s	Elbow, Stem ¼" (2 each)	33501064
n/s	Owner's Guide	36101291
n/s	Kit, O-Rings, Collets, QC ¼" & 3/8"	92166
n/s	Safety Clip 1/4"	96345
n/s	Safety Clip 3/8"	92346

n/s - not shown

Figure 1.A: Component* and Interconnection Locators, Model 12403.

*Replacement parts can be obtained from your local dealer. Refer to your local dealer stamp at the back page of this manual.



PRODUCT WATER STORAGE TANKS - ALL SYSTEMS		
Item	**Description**	**Part No.**
1	Storage Tank Assembly, Polymer	92313
2	Storage Tank Assembly, Metal	92342/ 92294
3	Ball Valve, 3/8"	33503601

Figure 1.B: Product Water Storage Tanks.

INSTALLATION REQUIREMENTS

READ THIS ENTIRE INSTALLATION AND SERVICE GUIDE BEFORE BEGINNING INSTALLATION

The 12403 Series Reverse Osmosis (RO) Drinking Water Treatment Systems have been designed for ease of installation and serviceability and are constructed with the finest materials available. Using these instructions and paying close attention to the parameters outlined within "CONDITIONS FOR USE" detailed on Page II will ensure a successful installation.

All systems must be installed in accordance with applicable city, state, provincial and local plumbing codes. **For installation in Massachusetts, the Massachusetts Plumbing Code 248 CMR shall be adhered to. Consult your licensed plumber for installation of this system. The use of saddle (piercing) valves is not permitted.** To ensure a system continues to operate at its optimum level, it is necessary to have a routine maintenance and replacement schedule (Table 4). Frequency at which filters must be changed will depend on quality of feed water supply and level of system usage.

These RO systems contain a replaceable treatment component critical to the efficiency of the system. Replacement of the reverse osmosis component should be with one of identical specification, as defined by WaterGroup to assure the same efficiency. Product water shall be tested periodically to verify the system is performing properly. Operator performs test using the optional Smartap® Water Quality Monitor.

All state, provincial and local government codes regarding installation of these devices must be observed.

PREPARATION

1. Check that all appropriate components are packed with your system (Figures 1.A. and 1.B.).
2. Determine locations for RO component installation. Two requirements for consideration are: access to cold water supply line and household sink drainpipe. Specific requirements are detailed in Table 3.

COMPONENT LOCATION REQUIREMENTS

Table 3

PRODUCT WATER FAUCET	**REVERSE OSMOSIS MODULE**
Faucet may be installed in any convenient location. Make sure underside of location is free of obstructions.	Module may be installed under sink or in any convenient location within 15 feet of source water supply and faucet.
STORAGE TANK Tank may be placed in any space within 15 feet of faucet, generally under kitchen sink or in an adjacent unused cabinet. Tubing length between components should be kept to a minimum, avoiding sharp bends or kinks.	
DO NOT PLACE MODULE WHERE IT WILL BE EXPOSED TO FREEZING AND/OR DIRECT SUNLIGHT. MODULE MUST BE EASILY REMOVABLE FOR PERFORMANCE OF ROUTINE MAINTENANCE. Mount Module on side of cabinet using bracket (attached to Module) and two screws provided in the Installation Kit. **HOLD THE MODULE BY THE FILTER HOUSINGS WHEN PICKING UP OR CARRYING UNIT.**	

NOTE

THIS DRINKING WATER SYSTEM IS FOR USE ON POTABLE WATER SUPPLIES ONLY.
SOURCE WATER EXCEEDING CHEMICAL PARAMETERS REQUIRES PRE-TREATMENT.

CAUTION

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

MAINTENANCE REQUIREMENTS

Table 4

Service Requirements	Recommended Service Intervals
To insure the system operates at its optimum level, certain routine maintenance must be performed. Frequency of maintenance performance will depend on feed water quality and level of system usage. **CLEAN:** Each time filters are replaced **SANITIZE:** At least once a year and each time membrane is replaced	Replace filters as required or every 6 to 12 months depending on feed water quality. Replace membrane as required based on Smartap® Water Quality Monitor indication or periodic TDS rejection tests. Maximum recommended service life for membrane is 60 months.

OPTIONAL SMARTAP® WATER QUALITY MONITOR

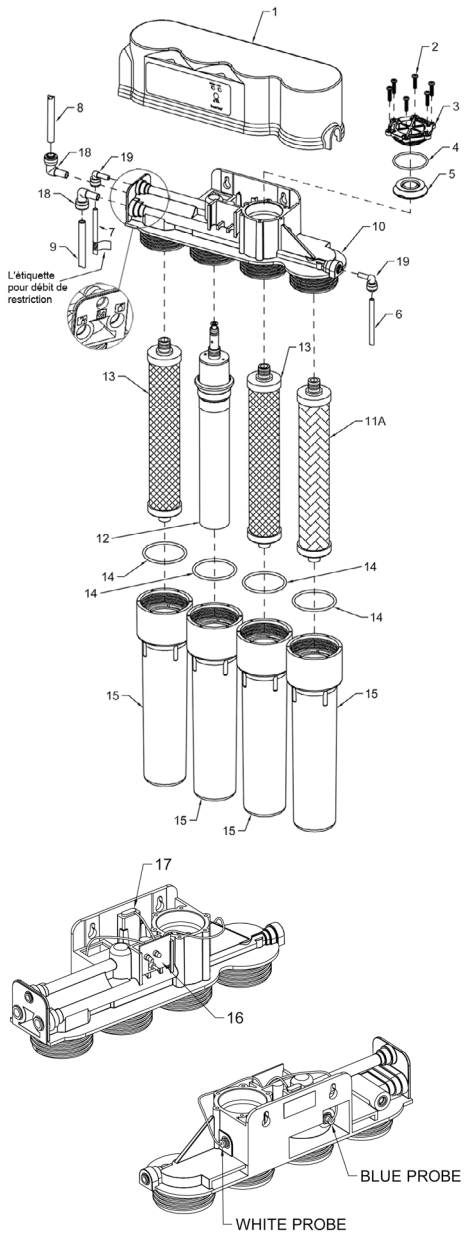
WaterGroup's 12403 Series Reverse Osmosis Systems incorporate a proven performance indicator. Our *patented* Smartap® Water Quality Monitor uses dual probe LOGIC PULSE MEMORY technology to accurately indicate membrane performance. A split-second power pulse compares feed water Total Dissolved Solids (TDS) level with that of the product water. Then, by reversing the polarity of the electronic pulse, the probes are cleaned and kept free of chemical plating. A nine-volt alkaline battery provides power to the Monitor. For optimum monitor performance, the battery should be replaced each time system is sanitized.

Push Button Actuated Smartap® - 12403 Series

Pressing a test button located on the manifold cover activates monitor. When button is pressed, and momentarily held down, monitor reports membrane status by illuminating a light located next to test button. A green light means system is operating normally. A yellow light indicates system needs servicing (membrane may be depleted or fouled). While the button may be pressed at any time, the most accurate readings are obtained when the system is making water for at least 10 minutes.

The customer can also contact the local dealer for water sampling service or kit.

Model 12403
Push Button Smartap® Monitor Module Cover and Monitor Connections



Item	Description	Part No.
1	Cover, 4-vessel Push Button Manifold †	20500127
2	Screw, inlet Valve Cover	32701038
3	Cover, Inlet Valve	20500126
4	"O" Ring, Inlet Valve Cover	34201024
5	Shut Off Assembly	40600010
6	Tubing, 1/4", White *	115200
7	Flow Restrictor, 1240 Series, Red	
	9 GPD	40600034
	25 GPD	40600040
	50 GPD	40600041
	75 GPD	40600042
8	Tubing, 3/8", Blue *	87600
9	Tubing, 3/8", White *	115207
10	RO, 4V Manifold, Assembled **	12402
11A	Cartridge, Sediment, 5 micron	41400008
12	Filter, Membrane Thin Film Composite	
	9 GPD, Yellow Casing Red Tape	33001071
	25 GPD, Yellow Casing Black Tape	33001068
	50 GPD, Yellow Casing White Tape	33001033
	75 GPD, Yellow Casing Blue Tape	33001056
13	Cartridge, Carbon AES, 10 micron	41400009
14	"O" Ring, Filter Housing	34201026
15	Housing, Filter	20500129
16	Circuit Board	40200132
17	Battery 9 volt	701085
18	Elbow, Stem, 3/8" *	33501071
19	Elbow, Stem, 1/4" *	33501064
n/s	Kit, O-Rings, Collets, QC, ¼" & 3/8"	92166
n/s	Safety Clips ¼"	92345
n/s	Safety Clips 3/8"	92346

*Note: These parts are included with installation kit.
** Includes Items: 2, 3, 4, 5.
n/s – not shown

†To obtain the correct replacement decal/label, contact your dealer.

Figure 1.C: Exploded Schematic 12403 Model Series

LIMITED WARRANTY

Subject to the conditions and limitations described below, WaterGroup warrants its Model 12403 Series Reverse Osmosis Drinking Water Treatment Systems (excluding membrane, cartridge filters and battery), when installed in accordance with WaterGroup specifications, to be free from defects in materials and workmanship under normal use within the operating specifications for a period of two (2) years from the date of purchase. WaterGroup also warrants the Smartap® Water Quality Monitor to be free from defects in materials and workmanship under normal use within the operating specifications for a period of five (5) years from the date of purchase. This warranty shall apply to the original end-user of the system only.

Other than the membrane, cartridge filters and battery, any part found defective within the terms of this warranty will be repaired or replaced by WaterGroup. If any part is found defective, WaterGroup also reserves the right to replace the drinking water appliance with a comparable WaterGroup drinking water system of equal or greater quality. You pay only freight for repaired or replaced parts from our factory and local dealer charges, including but not limited to labor charges, travel and transportation expenses and handling fees.

This warranty shall not apply to any part damaged by accident, fire, flood, freezing, Act of God, bacterial attack, membrane fouling and/or scaling, sediment, misuse, misapplication, neglect, alteration, installation, or operation contrary to our printed instructions, or by the use of accessories or components which do not meet WaterGroup specifications. If the drinking water system is altered by anyone other than WaterGroup the warranty shall be void.

ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THE PERIOD SPECIFIED ABOVE FOR THE PARTS DESCRIBED IN THIS LIMITED WARRANTY.

As a manufacturer, we do not know the characteristics of your water supply. The quality of water supplies may vary seasonably or over a period of time. Your water usage may vary as well. Water characteristics can also change if the drinking water appliance is moved to a new location. For these reasons, we assume no liability for the determination of the proper equipment necessary to meet your requirements, and we do not authorize others to assume such obligation for us. Further, we assume no liability and extend no warranties, express or implied, for the use of this product with a non-potable water source or a water source which does not meet the conditions for use as described in this Owners Guide.

WATERGROUP'S OBLIGATIONS UNDER THIS WARRANTY ARE LIMITED TO THE REPAIR OR REPLACEMENT OF THE FAILED PARTS OF THE DRINKING WATER SYSTEM, AND WE ASSUME NO LIABILITY WHATSOEVER FOR DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL, GENERAL OR OTHER DAMAGES, WHETHER FROM CORROSION OR OTHER CAUSES.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. Similarly, some states do not allow the exclusion of incidental or consequential damage, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may have other rights that vary from state to state.

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For parts and service, contact:

If no contact information has been provided above, please contact WaterGroup to find the dealer nearest you.

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Part No. 36101292