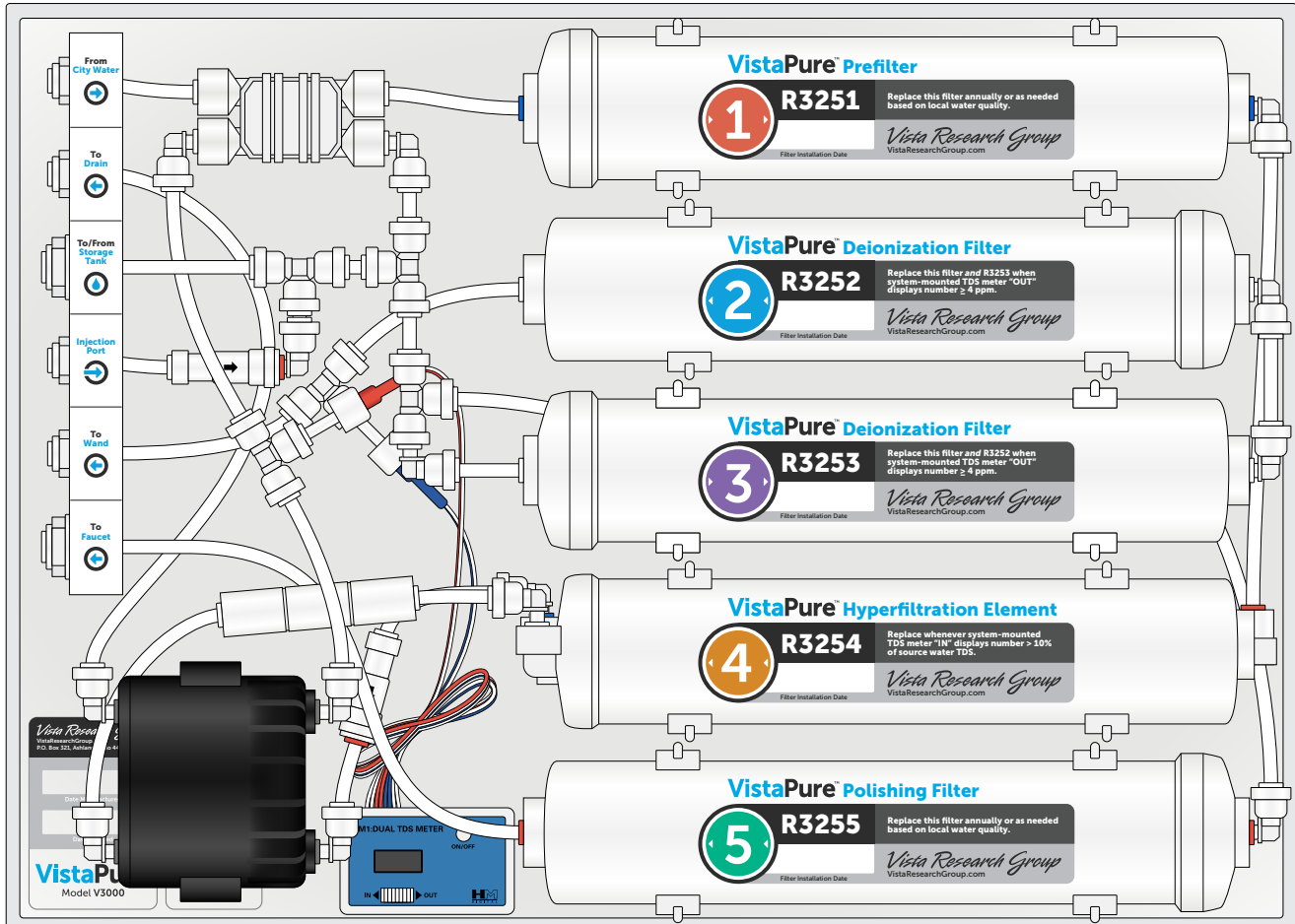


# VistaPure™

## Installation Guide & Owner's Manual



## Model V3000

**VistaPure™**

Specialized water filtration for autoclaves, dental bottles,  
ultrasonic cleaners & instrument washers

# Table of Contents

Introduction .....	3
Important Information .....	3
Preparation .....	4
System Overview .....	5
Installation .....	6
System Maintenance	
Monitoring TDS .....	10
Filter Life & Replacement Thresholds .....	11
Changing Filter Elements .....	11
Checking Tank Air Pressure .....	12
Sanitizing the Tank and Faucet .....	13
Filter Performance Record .....	14
VistaPure Limited Warranty .....	15
VistaPure System Information .....	16

## Distribution

VistaPure systems are sold through dental and medical dealers throughout North America by:

### **Pelton & Crane**

Pelton.net  
11727 Fruehauf Drive  
Charlotte, NC 28273  
United States of America

CUSTOMER SERVICE  
(800) 659-6560

TECHNICAL SUPPORT  
(800) 659-5922

### **SciCan Inc.**

SciCan.com  
701 Technology Drive  
Canonsburg, Pennsylvania 15317  
United States of America

PHONE (724) 820-1600  
FAX (724) 820-1479  
TOLL FREE (800) 572-1211

### **SciCan Ltd.**

SciCan.com  
1440 Don Mills Road  
Toronto, Ontario M3B 3P9  
Canada

PHONE (416) 445-1600  
FAX (416) 445-2727  
TOLL FREE (800) 870-7777

## *Vista Research Group*

VistaResearchGroup.com  
P.O. Box 321  
Ashland, Ohio 44805-0321  
United States of America

PHONE (419) 281-3927  
FAX (419) 281-7380

VistaPure is a trademark of Vista Research Group, LLC.

# Introduction

VistaPure is designed to produce two grades of high-purity water: distilled-quality water for use in autoclaves, and non-corrosive, low-TDS water for filling dental bottles, ultrasonic cleaners and for final rinse cycles in instrument washers. Water used in autoclaves must be virtually free of dissolved solids in order to protect the heating chamber and to prevent buildup of contaminants that can create hard deposits and necessitate more frequent cleanings. Water used in self-contained dental bottle systems should be of a high quality, but not distilled-grade water, which is corrosive to metals used in the construction of dental units.

The VistaPure system is designed to be built in to sterilization center cabinetry, and can also be installed in an equipment room. The system provides up to 4.25 gallons of treated water in its pressurized storage tank (based on city water pressure), and automatically replenishes this supply as water is drawn from storage. The system does not require electricity—it needs only a potable supply of cold water and a drain. To maximize the life of the system filtration elements, we recommend that the water supplied to the system be free of sediment, and softened if the source water is very hard.

## IMPORTANT INFORMATION

### For System Owners



We recommend that a professional technician or plumber familiar with dental/medical offices perform the installation since interface with a cold water line and drain is involved. He/she should be familiar with local plumbing codes and techniques for successful dental/medical equipment installations.

**Please keep the Installation Guide & Owner's Manual handy for future reference** and ensure that anyone responsible for operation and maintenance of the system is familiar with all details contained in this manual.

Please return the registration form or register online at [vrg.support/register](http://vrg.support/register) immediately upon installation.



We recommend turning off the system at the end of each work day by closing the valves on the system board, water storage tank, and autoclave wand.

## IMPORTANT INFORMATION

### For System Installers



**Please read this entire manual before proceeding with installation and operation, and always follow local plumbing codes.**

The VistaPure system can be installed nearly anywhere in the typical dental, medical, lab or hospital setting, typically near a faucet and sink in a sterilization center. The system and tank are designed to fit in a base cabinet, but can be installed anywhere there is a quality cold water supply and drain connection. The system board is designed for horizontal installation. Please keep the system board and water storage tank at the same level. The system should be installed no farther than 10-12' from where the wand and faucet will be used.

Please locate the system label on the corner of the mounting board and record the installation date using a fine-tipped permanent marker or some other writing instrument that will not smear.

# Preparation

Every VistaPure comes in two (2) cartons. Box 1 of 2 contains the system. Box 2 of 2 contains all other items, including the Installation Guide & Owner's Manual, warranty registration card, water storage tank, dispensing wand, faucet, drain fitting, TDS meters, colored tubing and all other accessories. Make sure all items needed for installation are present and undamaged. If damage is evident, contact the shipping company or your distributor immediately.

## Box 1

### VistaPure System

## Box 2

**x3 S6112**  
1/4" Swivel Elbows

**x2 S6114**  
3/8" Swivel Elbows

**S6119**  
3/8" x 3/8" x 1/4" Tee Union

**S6133**  
3/8" Tube x Faucet

**S6135**  
3/8" Angle Stop Adapter  
x 3/8" Compression x 1/4" Tube

**S6161**  
3/8" x 1/4" Tank Valve

**S6310**  
3/8" x 1/4" Union

**x2 S6588**  
Cable Ties

**S6589**  
Mounting Cable Tie

**S9035**  
Syringe

**S9111**  
Water Storage Tank

**S9118**  
Economy TDS Meter

**S9146**  
Drain Tee Line Adapter  
(with Stem Reducer)

**S9155**  
VistaPure Chrome Faucet

**S9300**  
VistaPure Wand  
(with clip, wrench, screws)

### Tubing

**6'** White (3/8")

**6'** Red (1/4")

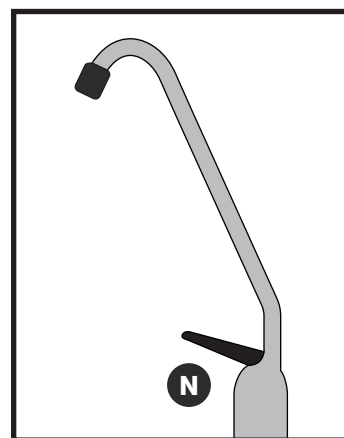
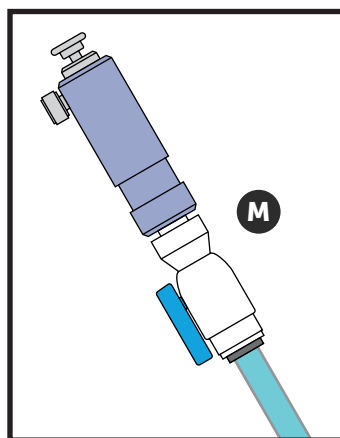
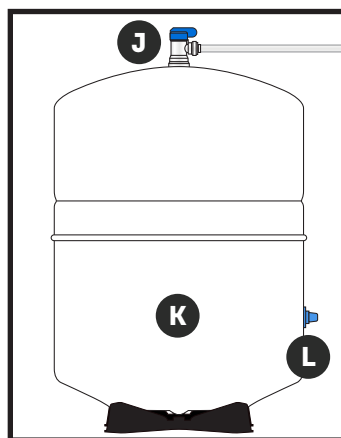
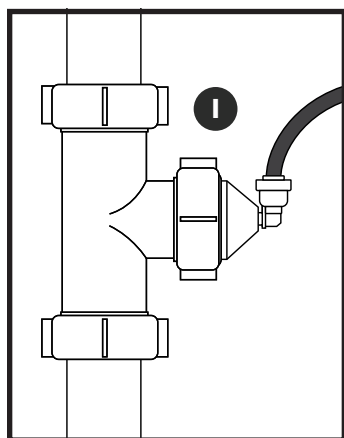
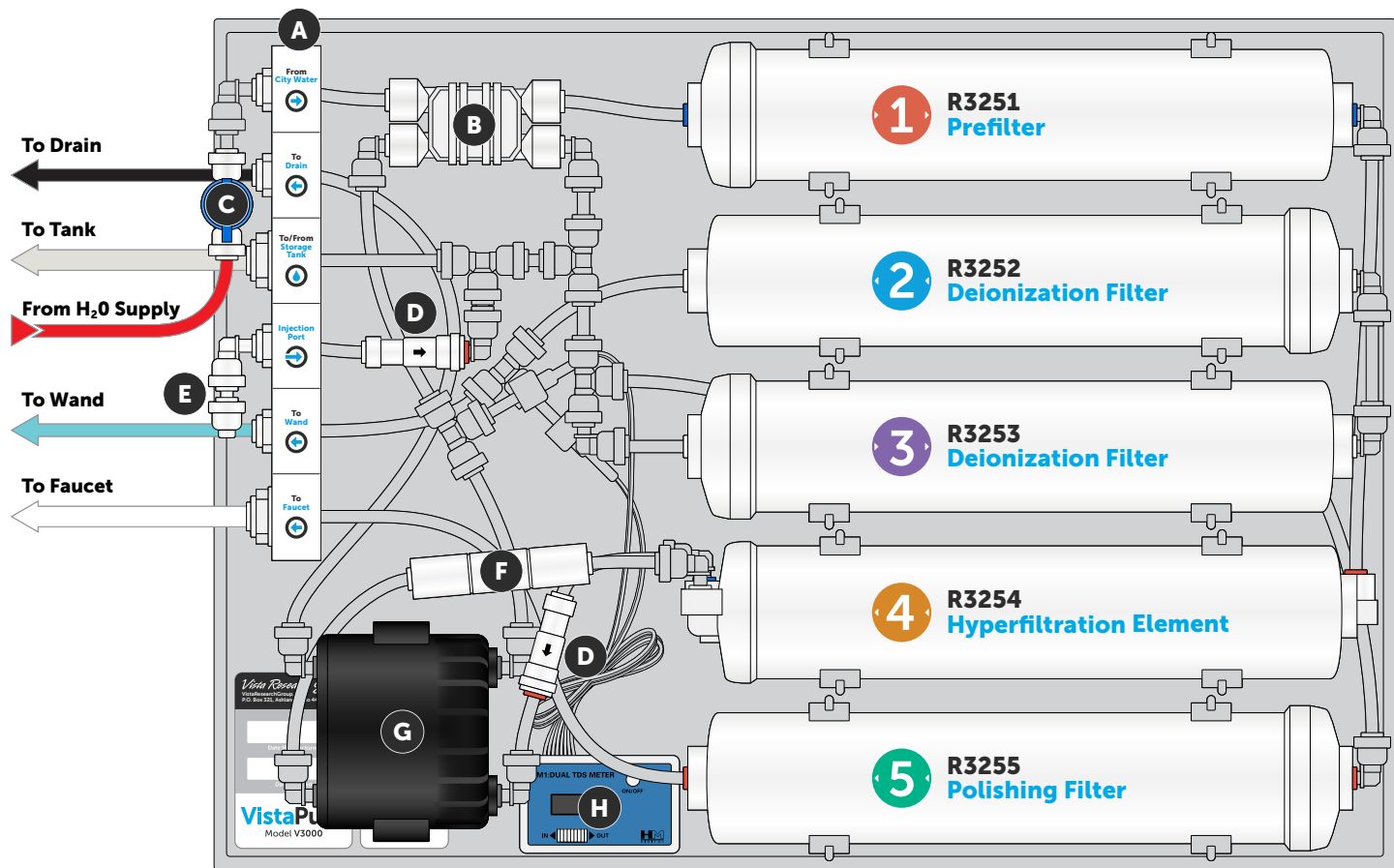
**6'** Black (1/4")

**6'** Natural (3/8")

**10'** Blue Coil (3/8")

**12'** Blue (1/4")

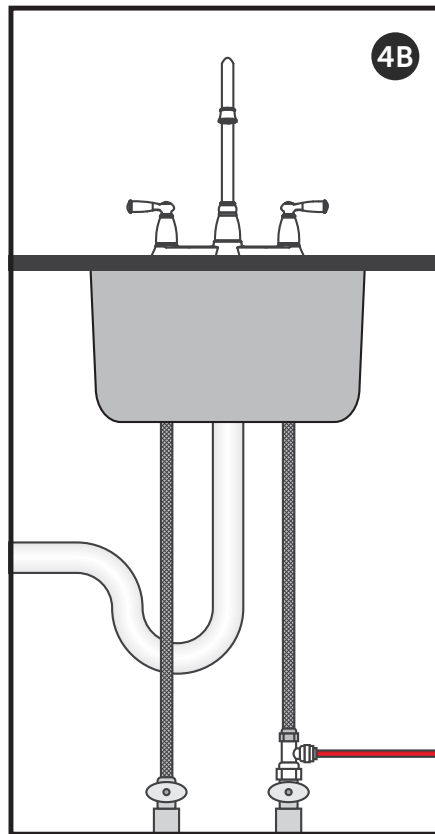
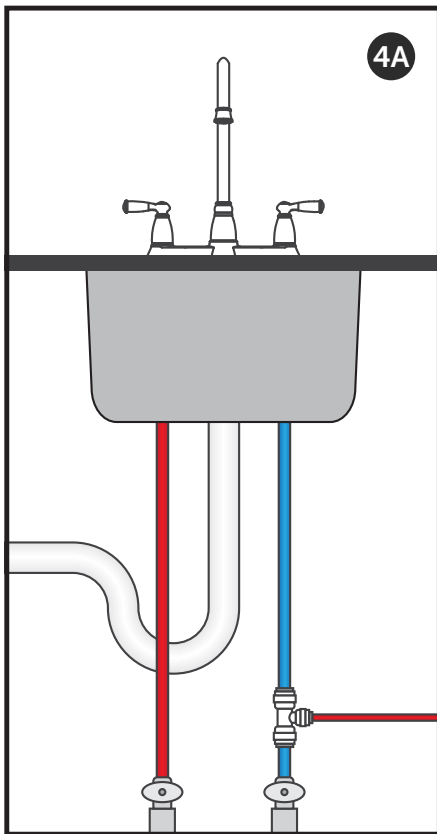
# System Overview



- A** System Manifold
- A1** From City Water to Prefilter
- A2** To Drain from Pump
- A3** To and from Storage Tank
- A4** Injection Port to Tank Line
- A5** To Autoclave Wand
- A6** To Bottle Faucet
- B** Automatic Shut-Off Valve
- C** System Water Shut-Off Valve
- D** Check Valves
- E** Injection Port Assembly
- F** Flow Restrictor
- G** Permeate Pump
- H** Dual TDS Meter
- I** Drain Fitting (see page 7)
- J** Storage Tank Shut-Off Valve
- K** Water Storage Tank
- L** Tank Air Valve
- M** VistaPure Wand
- N** VistaPure Chrome Faucet

# Installation

- 1 If the system is not already mounted in another product (sterilization center, etc.), mount as desired near a cold water source and 1-1/2" drain.
- 2 Position the water storage tank as near to the VistaPure system board as possible, at the same level.
- 3 Locate the white elbow tank valve in the accessory pack and attach valve to the top of the storage tank. Hand-tighten only—never use tools on system valves and fittings! Make sure to open the tank valve after installing it on the tank—the system will not work if the tank valve is closed. (A valve handle in the open position is in line with the tubing; when closed, it is 90° to the tubing.)
- 4 Provide for a 1/4" connection to the cold water supply. This is usually accomplished using a compression fitting or one of the supplied fittings on the cold water line. Check local codes.

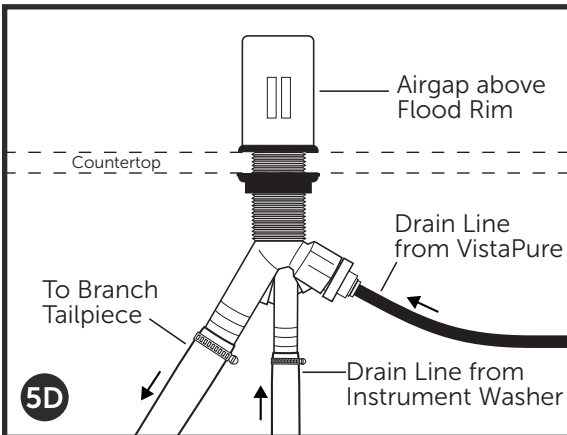
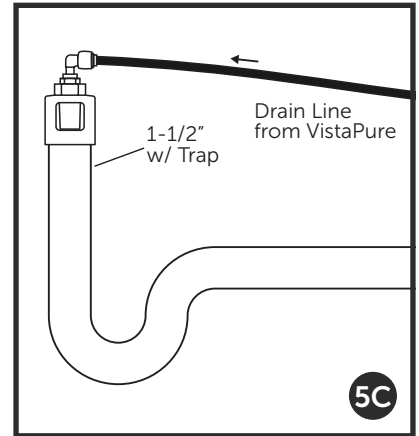
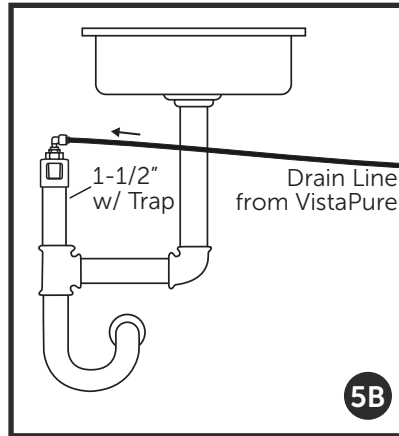
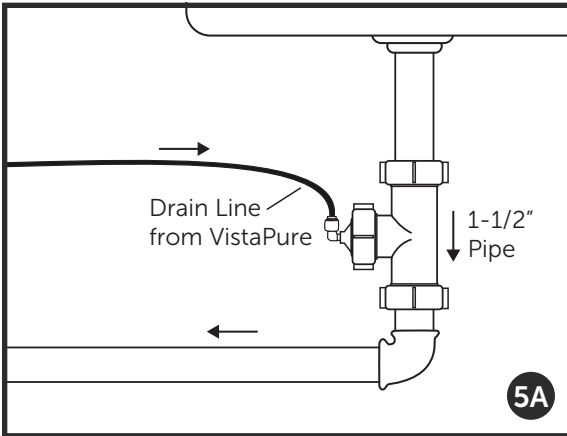


**4A S6119**  
3/8" x 3/8" x 1/4" Tee Union  
For 3/8" O.D. smooth supply tubing

**4B S6135**  
3/8" Angle Stop Adapter  
x 3/8" Compression x 1/4" Tube  
For 3/8" braided supply lines  
with prefitted compression nuts

**NOTE:**  
Use either 4A or 4B method to supply cold water to the VistaPure.

- 5 Provide a drain connection using 1-1/2" material with trap as shown below. A 1-1/2" utility Tee with both 3/8" and 1/4" push-in type fittings are included with each VistaPure. Various optional configurations are available.



- 5A Typical installation of drain Tee (S9146) using existing sink drain system. **Included with unit.**
- 5B Alternate installation of drain Air Gap (S9145) using existing sink drain system. Order separately.
- 5C Alternate installation of drain Air Gap (S9145) using separate riser and trap. Order separately.
- 5D Alternate installation of dual inlet drain Air Gap system (S9147) using branch tailpiece. Order separately.

**NOTE:**

Local codes vary greatly, so be sure to verify the preferred method prior to installation. Every VistaPure has a pressurized drain discharge and multiple check valves in the system to prevent backflow from drain connections.

If additional backflow measures are required, a 1/4" VistaCheck Dual Check Backflow Preventer (VC250-A) can be installed on the red water supply line. VistaCheck is CSA-certified for supply lines in the USA and Canada.

- 6 Mount the faucet on the sink or countertop deck in the sterilization center, lab or kitchenette as desired. The faucet & 3/8" push-type faucet connector fitting are included in the accessory kit.

- 7** Attach colored tubing to the proper segments on the system manifold and the appliance/device as shown below and on page 5. When attaching tubing to the push-type fittings, make certain all tubing cuts are straight and free from burrs. Tubing must be firmly inserted into the fitting (11/16" plunge) to avoid leaks.



- If the system is mounted inside a cabinet, under a sink or on a sliding device, be careful that tubes are not crushed or crimped. If the system is on a sliding device for easy access, make certain to create a coil with the tubes that will allow the system to move in and out without causing damage or restriction.
- If the VistaPure system is to be installed remote to the autoclave(s) and/or in a cabinet, fish the solid blue tubing behind cabinetry to the autoclave center. Join the solid blue tubing and the coiled blue tubing with the white 1/4" x 3/8" push-type union that is already attached to one end of the coiled tubing. Make certain to provide a restraint at the straight end of the coiled tubing near the union so that when pulling out on the autoclave wand and coiled tubing the union connection is not stressed. Extra lengths of tubing are included with each system. A mounting zip tie is provided with system.

<b>RED</b>	From Cold Water Supply	<b>NATURAL</b>	To and From Tank	<b>BLUE (STRAIGHT)</b>	To Autoclave Area
<b>BLACK</b>	To Drain	<b>WHITE</b>	To Faucet	<b>BLUE (COILED)</b>	To Autoclave Filler Wand

## **8** Wand Installation

- 8A** Push wand assembly valve onto the end of the 3/8" O.D. coiled tubing. Firmly push and twist the tubing to make certain it engages into the O-ring in the valve.
- 8B** Attach the white 3/8" x 1/4" union adapter on the opposite end of the coiled tubing to the 1/4" tubing that runs to the "Autoclave Wand" port on the VistaPure system manifold. Secure the union adapter to a solid surface using the included mounting zip tie.
- 8C** Attach the small wand holder clip to the desired location using the two screws provided. The clip may be oriented in any direction and mounted in any location.

**USE:** To use the wand, remove it from the clip holder, turn the blue valve handle so it's inline with the tubing, then press downward on the mushroom button. Water will flow from the spout.

**STORAGE:** To store the wand after use, turn the blue handle so it is 90° to the tubing and press the wand into the clip holder.



- 9 After all tubing connections have been made, turn the cold water supply valve on to allow water to enter the system. Allow it to run for at least 10 minutes. Wastewater should run to the drain and a pulsing/ clicking sound should be audible from the permeate pump—this is normal. Check for leaks at all connections.
- 10 It is important to check the air pressure pre-charge in the water storage tank and sanitize the system upon installation prior to use.
  - Check the air pressure in the water storage tank according to the maintenance instructions on page 12.
  - Sanitize the storage tank and faucet following the maintenance instructions on page 13.
- 11 After installing the system, checking the air pressure in the storage tank, and sanitizing the tank and faucet, the VistaPure system is ready for use. Depending on the city water pressure, filling the storage tank completely (up to 4.25 gallons for the standard tank) may require about an hour. However, water can be used any time after about 30 minutes, as the system can send water to the wand and faucet even while making new water.

# Monitoring TDS

**! Check TDS levels at least monthly and record the data in the chart on page 14.**

Total dissolved solids (TDS) is the quantitative measure of virtually all constituents found in a particular water supply, counted as parts per million (ppm) or milligrams per liter (mg/L). Water is simply H<sub>2</sub>O; basically, everything else found in it would contribute to the TDS. A typical city water supply will have a TDS reading of 150-350 ppm, although it varies greatly. The federal standard for municipal water systems is a maximum of 500 ppm TDS. Please do not use VistaPure with private water wells since TDS can be very high and contain high levels of contamination.

Water for use in autoclaves should be of distilled quality, which is a TDS of 0-5 ppm (0-4 ppm preferred). Water with TDS readings higher than 5 ppm will eventually cause scale build-up and more frequent cleaning and/or repair. The worse the water, the more costly the maintenance and repairs—to the point that some autoclaves won't even operate if the TDS is high.

The VistaPure system comes equipped with a battery-operated dual TDS meter that enables you to check the water quality throughout the system. For example, slide the switch on the TDS meter (see Figure F) to "IN." This reads the level of TDS in the water emerging from the Hyperfiltration element. Slide the switch to "OUT" to display the level of TDS emerging from the Deionization filters.

**Water should always be running from chrome faucet while testing TDS!**

A separate, handheld TDS meter is also included, which can be used to determine the level of TDS in the supply water fed to the system. With these data, one can monitor the complete process as necessary. Under normal operating conditions, TDS levels might be as follows in this example:

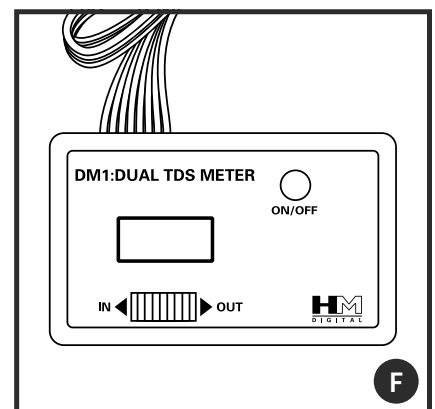
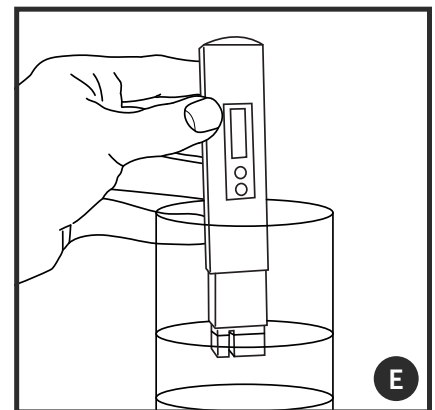
City Water Feed	=	200 ppm TDS	=	X
After Hyperfiltration	=	010 ppm TDS	=	5% of X
After Deionization	=	000 ppm TDS		

**Remember, this is only an example.** However, the reading on the "IN" should generally be about 5% or less of the inbound water TDS. The Deionization filters remove the balance remaining to achieve the 0-4 ppm TDS level desired.

Figure E shows the handheld TDS monitor provided with your system. It can be used to determine the quality of the raw and treated water. Simply remove the protective cap exposing the probe, push the power button to activate, and immerse the probe into the water. The LCD display will show the TDS level. After use, shake the water out of the probe area and wipe the outer portion dry—never push anything into the probe area. Check the water quality frequently and change filter elements as required. Both TDS monitors are powered by a simple button-cell battery, available at most any store.

**NOTE:**

Replacement batteries for meters should be purchased locally. Both included TDS meters take two (2) of the following battery:  
357A (LR44) Alkaline Button Cell - 1.5V 110mAh.



# Filter Life & Replacement Thresholds

**Prefilter (R3251):** approximately one year (change at least annually).

**Deionization Filters (R3252 & R3253):** 4 months to 3 years, depending on volume of usage and quality of local water supply. Change BOTH deionization filters whenever the system-mounted TDS meter "OUT" (recorded in Column D above) displays a number equal to or greater than 4 parts per million (ppm).

**Hyperfiltration Element (R3254):** 3-5 years, depending on the volume of usage and quality of local water supply. Replace the hyperfiltration filter whenever the system-mounted TDS meter "IN" exceeds 10% of the TDS of the municipal water supply TO the system, as measured with the included, handheld meter (percent recorded in Column C above).

**Polishing Filter (R3255):** approximately one year (change at least annually).

## Changing Filter Elements



**Warning:** never attempt to change any filter element(s) with pressure on the system. Follow these steps when changing filter elements:

- 1 Turn OFF water inlet supply (Figure C on page 5).
- 2 To relieve all pressure from the system, discharge all water from the storage tank by locking open the handle on the chrome faucet (lift UP on the black handle)
- 3 Disconnect the tubing from any filter element(s) to be replaced by pushing in on the collet and removing the tubing, starting on the side of the filter(s) opposite the system manifold.
- 4 Pull the filter(s) out away from the board, one clip at a time, then disconnect the tubing from the other end of the filter(s).
- 5 Reverse the process to install your replacement filter(s). Take care to note the proper direction of flow. Don't forget to record the installation date on the filter label using a permanent marker and in the table on the back panel of the instruction manual.
- 6 After any filter elements are replaced, perform a system cleansing procedure as outlined on page 13. This cleansing procedure should be followed at least once per year and anytime a filter is changed.



**Notice:** During the initial installation and at least once per year during the tank cleansing process, check the air precharge pressure in the water storage tank using a digital tire pressure gauge. With the tank empty and water valve in the OPEN position, remove the cover cap from the air valve and check the precharge air pressure. The precharge pressure should be set at 6.0-7.5 psi for most applications. Add air as needed using a tire pump or compressor. To lower air pressure if too high, depress the stem in the air valve and re-check. See complete directions on page 12.

# Checking Tank Air Pressure

At least once per year and whenever filters are changed, **check the air pressure** of the system's water storage tank.

Things you'll need:

- Digital tire air pressure gauge (available for less than \$10 at most auto supply retailers)
- 1 Turn off the main water supply to the system.
  - 2 Lock the chrome bottle faucet open to drain the tank completely.
  - 3 When the water stops flowing, locate the small cap on the air valve. Turn it counterclockwise to remove the cap.
  - 4 Use the digital tire gauge to check the air pressure pre-charge. The air pressure should be a minimum of 6.0 psi (41 kPa) and a maximum of 7.5 psi (52 kPa).
  - 5 To add air to the tank, use a compressor or bicycle tire pump. To remove air, press in gently on the valve needle. Use the air gauge to check for desired pressure.
  - 6 When finished checking air pressure, thread the cap back onto the air valve, close the faucet and sanitize the tank and faucet line. See instructions on page 13.

**Note:** If air ever comes out of the tank valve or water comes out of the air valve, the diaphragm in the tank is damaged and the tank needs to be replaced. See the support section available online at <http://vrg.support>.

# Sanitizing the Tank and Faucet

At least once per year and whenever filters are changed, **sanitize the VistaPure system.**

Things you'll need:

- One ounce (30 mL) of non-scented chlorine bleach
- 35 cc (mL) syringe (included with each VistaPure system)

- 1 Turn off the main water supply to the system.
- 2 Lock the chrome bottle faucet open to drain the tank completely, then close the faucet.
- 3 Place one ounce (30 mL/cc) of 8.25% unscented chlorine bleach into a small cup.
- 4 Dip one end of a clean cotton swab into the bleach, then carefully wipe the tip and inside edge of the faucet opening.
- 5 Remove the cap from the tube on the injection port of the system manifold.
- 6 Draw the chlorine bleach into the 35 cc syringe provided with the system and inject the bleach into the injection port tube.
- 7 Draw a full syringe of plain water, then inject the water into the injection port tube and replace the cap.
- 8 Turn on the water supply to the system and allow it to make water for 10 minutes.
- 9 Open the chrome faucet until water emerges for a few seconds and bleach can be detected, then turn off the faucet.
- 10 Let the system sit idle for another 20 minutes.
- 11 Open the chrome bottle faucet and allow the water to run until all water has been drained from the tank.
- 12 To rinse the tank, waterlines and faucet, close the faucet and allow the system to make water for at least 10 minutes.
- 13 Open the chrome bottle faucet and allow the water to run until all water has been drained from the tank.
- 14 Close the faucet and allow the system to make water and refill the tank completely.

The system is now ready for use.

# Filter Performance Record

Date	"A" City Water to System (Use Handheld TDS Meter)	"B" After Hyperfiltration (Use Mounted Meter "IN")	"C" % TDS Remaining (Divide Column B by Column A)	"D" TDS after D/I (Use Mounted Meter "OUT")	"E" Water from Wand (Use Handheld TDS Meter)	"F" Water from Faucet (Use Handheld TDS Meter)

# VistaPure Limited Warranty

During the time period and subject to the conditions hereinafter set forth, Vista Research Group, LLC (VRG) will repair or replace to the original user any portion of a VistaPure which proves defective due to defective materials or workmanship of VRG. Contact your nearest authorized VRG distributor/ dealer for warranty service. At all times VRG shall have and possess the sole right and option to determine whether to repair or replace defective equipment, parts, or components. Damage due to conditions beyond the control of VRG is **NOT COVERED BY THIS WARRANTY**. (Contact parcel or freight company for claims on freight damaged in transit)

**WARRANTY PERIOD:** VRG shall warrant its VistaPure systems for a period of one (1) year from the date of installation, or eighteen (18) months from the date of manufacture, whichever comes first.

**LABOR, ETC., COSTS:** VRG shall *IN NO EVENT* be responsible or liable for the cost of field labor or other charges incurred by any customer in removing and/ or re-affixing any VRG product, part or component thereof.

**THIS WARRANTY WILL NOT APPLY:** (a) To defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with printed instructions provided; (b) to failures resulting from abuse, accident or negligence; (c) to normal maintenance services and the parts used in connection with such service; (d) to units which are not installed in accordance with applicable local codes, ordinances and good trade practices; (e) if the unit is moved from its original installation location, or; (f) if the unit is used for purposes other than for what it was designed and manufactured.

**RETURN OF REPLACED COMPONENTS:** Any item to be replaced under this Warranty must be returned to Vista Research Group, LLC (VRG) in Ashland, Ohio, or such other place as VRG may designate, freight prepaid. Write to the address listed below for a return authorization and the physical address to which items should be returned for warranty attention.

**PRODUCT IMPROVEMENTS:** VRG reserves the right to change or improve its products or any portions thereof without being obliged to provide such change or improvement of units sold and/or shipped prior to such change or improvement.

**WARRANTY EXCLUSIONS:** As to any specific VRG product, after the expiration of the time period of the warranty applicable thereto as set forth under the heading "Warranty Period" above, *THERE WILL BE NO WARRANTIES, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.*

Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. No warranties or representations at any time made by any representative of VRG shall vary or expand the provisions hereof.

**LIABILITY LIMITATION:** *IN NO EVENT SHALL VRG BE LIABLE OR RESPONSIBLE FOR CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES RESULTING FROM OR RELATED IN ANY MANNER TO ANY VRG PRODUCT OR PARTS THEREOF.*

Some states do not allow the exclusion of limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

For your warranty protection (Magnason-Moss Warranty Act), the warranty card, if provided, should be completed and returned to VRG within ten (10) days of installation. Alternatively, register your product online within ten (10) days of installation at **vrg.support/register**. In the absence or other suitable proof of installation date, the effective date of this warranty will be based upon the date of manufacture plus one hundred eighty (180) days.

# VistaPure System Information

Thank you for purchasing the VistaPure system for your practice! The following chart is for necessary information for future reference. Please fill this out completely and keep this manual in a convenient place for ready access and reference.

Be sure to use our convenient online warranty registration form at [vrg.support/register](http://vrg.support/register). If you'd prefer, you may complete and return the included Warranty Registration sheet. Make a copy of the form for your records, then mail the original to us.

VistaPure Specialized water filtration for autoclaves, dental bottles, ultrasonic cleaners & instrument washers	
System Model #	V3000
System Serial #	
Installer Name	
Installer Phone	
Install Date	
Dealer	
Dealer Phone	
Dealer Address	
Notes	

Operating Temperature Range	45° - 100° F
Operating Pressure Range	40 - 100 psi
Optimal pH Range	6.5 - 8.5
Max Total Dissolved Solids (TDS)	500
Max pH Range	5.5 - 9.5
Max Influent Hardness	10 gr / 171 ppm
Max Influent Manganese	0.05 ppm
Max Influent Iron	0.1 ppm
Max Influent Hydrogen Sulfide	None
Max Influent Chlorine / Chloramine	2 ppm
Max Daily Output (24 hours)	100 Gal (378 L)
Prefilter Element Service Life	1 Year Max
Prefilter Replacement Order #	R3251
Deionization Filter Elements Service Lives	4-18 Months
Deionization Filter Replacement Order #s	R3252 & R3253
Hyperfiltration Filter Element Service Life	3-5 Years
Hyperfiltration Replacement Order #	R3254
Polishing Filter Element Service Life	1 Year Max
Polishing Filter Replacement Order #	R3255
System Dimensions (W x H x D)	22" x 16" x 5"
Tank Dimensions (Dia x H)	12" x 18.25"
Approximate Ship Weight (Dry 2 Cartons)	36 lbs

*Vista Research Group*

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United States of America

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**FAX** (419) 281-7380