Service and Installation Guide

ADVANT EDGE™
by AdEdge Technologies Inc.

DWS-2S-2710 Series
Arsenic Removal Systems

Models:

DWS-2S-2710-01

DWS-2S-2710-02

Arsenic Treatment Solutions
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The service and installation guide is designed to assist the professional water treatment provider and qualified staff. This document is not intended for the end user.

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Arsenic Treatment Facts

Arsenic (As) is a naturally occurring contaminant found in many ground waters. Generally occurring in two forms: pentavalent arsenic (also known as As(V), As(+5), and arsenate) and trivalent arsenic (also known as As(III), As(+3), and arsenite).

Arsenic does not generally impart color, taste, or smell to water; therefore, it can only be detected by an analytical test. Public water supplies are required to monitor delivered water for arsenic contaminates and the results are available to the public from the utility. Consumers using private water sources will need to make arrangements for regular testing. An arsenic test usually costs $15-30, a certified laboratory is recommended to conduct the test. Local health departments or environmental protection agencies can help provide consumers with a list of certified laboratories. Some laboratories may also be able to analyze the specific species present in the water sample if requested.

The DWS system is designed to reduce arsenic: both pentavalent and trivalent forms of arsenic to concentrations less than 10 µg/L, when applied within standard water quality parameters recommended by Adedge. Actual performance of the system may vary depending on specific water quality conditions at the consumer's installation. Following installation of this system, the consumer should have the treated water tested for arsenic to verify that arsenic reduction is being achieved and have routine service performed to ensure the system is functioning properly.

The arsenic removal component of this system must be replaced at the end of its useful life, please consult AdEdge for service life expectancy based on specific water quality parameters. The replacement component, the AdEdge AD-2710S cartridge, can be purchased from the original source of this system.

More information about arsenic and its toxicity can be found at the Agency for Toxic Substances and Disease Registry website at www.atsdr.cdc.gov/toxprofiles/phs2.html, the U.S. Geological Survey website at http://water.usgs.gov/nawqa/trace/arsenic/, the U. S. Environmental Protection Agency website at www.epa.gov/safewater/arsenic.html or your state department of environmental health.

Operating Guidelines

Operating Guidelines	
Typical Arsenic Treatment Goal	0.010 mg/L
Arsenic Reduction Capabilities	Arsenic V, Arsenic III
Reduction Efficiency	95-99%
AD-2710S Cartridge Replacement	1,000 gal, annually, or effluent > 0.010 mg/L
Flow Rate	0.5 gpm
Media Disposal	Meets (TCLP) and (WET)

Recommended Water Parameters	
pH	5.5 – 8.5
Total Arsenic	0.005 – 0.050 mg/L
Iron	< 0.5 mg/L
Manganese	< 0.05 mg/L
Sulfides	< 0.1 mg/L
Silica	< 30 mg/L
Phosphates	< 0.5 mg/L
Sulfate	< 100 mg/L
Fluoride	< 1.0 mg/L
Hardness	< 300 mg/L
Sediment	< 30 micron
Tannins	Non – Detectable
Turbidity	< 5 NTU
Temperature	40˚F – 100˚F / 4˚C – 37˚C
Operating Pressure	20 psi – 85 psi

Please consult AdEdge for installations with water characteristics outside of the recommended water parameters.

Installation Diagragm

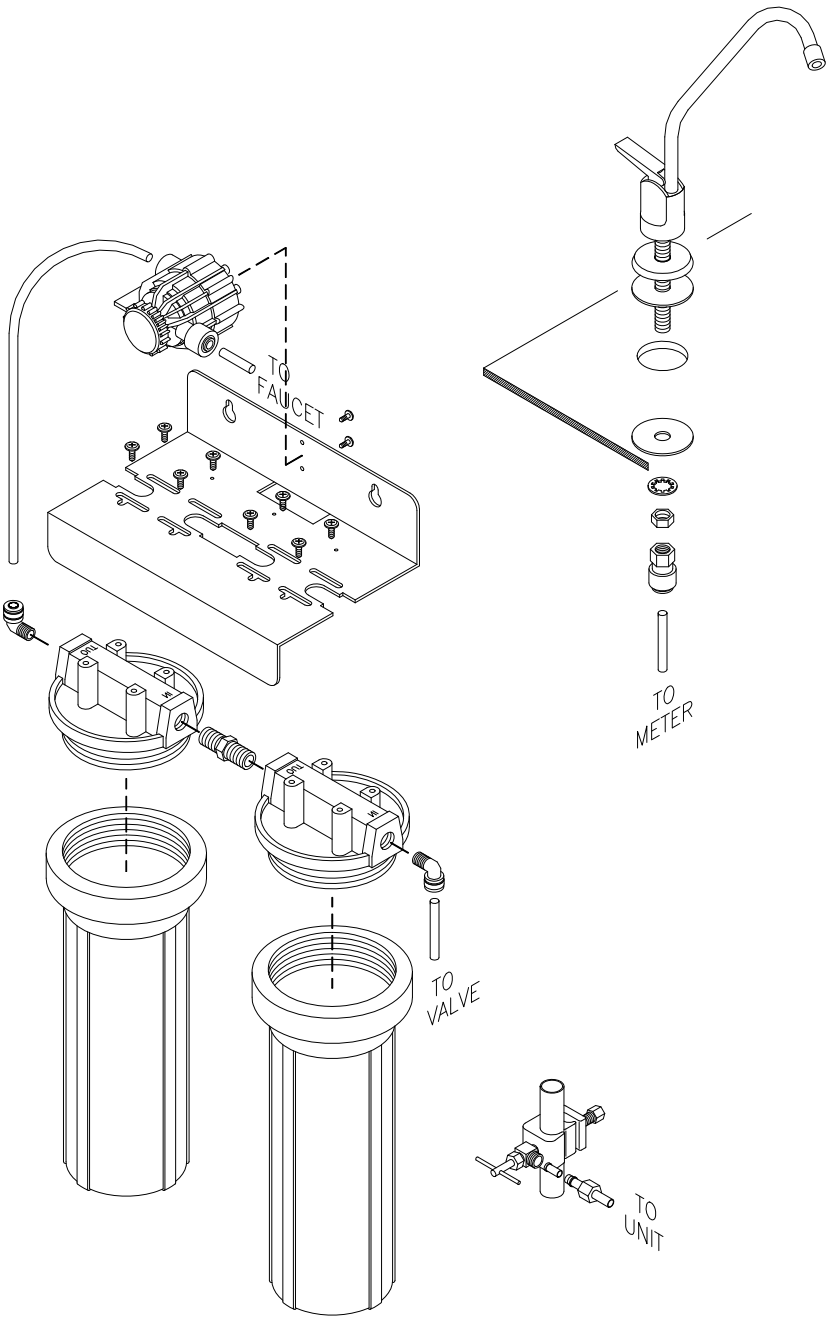


Illustration details omitted for clarity, not intended to represent suitability of site specific standards. Follow all applicable plumbing codes.

Pre-Installation

Open shipping carton, remove components and check that all parts are present.

Quantity	Description
1	Dual Stage DWS Unit – includes housings, bracket, mechanical meter
1	Stainless Steel Faucet Assembly
1	Parts Bag - includes ¼" tubing, tube fittings, plumbing connections

Model: DWS-2S-2710-01	
1	SE-001, 5 micron, 2.75" x 10"
1	AdEdge AD-2710S, Arsenic Reduction Cartidge, 2.75" x 10"

Model: DWS-2S-2710-02	
2	AdEdge AD-2710S, Arsenic Reduction Cartidge, 2.75" x 10"

Installation Tools & Materials

Plastic Tube Cutter or Utility Knife

Variable Speed Drill

1/8", 13/16" & 1/2" Drill Bits

1/2" Diamond Tip Drill Bit for Porcelain Sinks

1/2" Hole Punch for Stainless Steel Sinks

Philips Head & Flat Blade Screwdrivers

Crescent Wrench

Appropriate Mounting Screws

Masking Tape

Teflon Tape

Disinfection Product for Sanitation

Silicone Lubricant

Installation

Note: All plumbing must be completed in accordance with state and local plumbing codes. Some municipalities may require installation by a licensed plumber. Check local authority prior to installation.

Site Preparation

Installing water treatment professionals may want to speak with customers in advance and ask them to clean under the sink to save time. If a basement installation is advisable, check area to determine if extra fittings or hosing are required. Upon arrival, it is a good idea to check the condition of all plumbing for potential leaks and advise customer to eliminate misunderstandings in the event of leaks.

System location

The DWS system may be installed under a sink, in a basement or other location, depending on available space. Do not install unit where temperatures fall below freezing; damage will result. Connection to an icemaker should also be considered for optimum performance. See icemaker hookup instructions, pg 9 (fittings and tubing not provided for icemaker installation)

Allow approximately 2" clearance between the bottom of the filter housing and the floor of the sink. Use the mounting holes on the bracket mark the location on the wall or cabinet. At the marked locations insert 2 screws and hang the unit on the wall.

Faucet installation

If the sink has a sprayer it may be disconnected for faucet installation if advised by customer. A pipe cap or plug will be necessary to seal the sprayer connection. Proceed with mounting the faucet

To make the faucet mounting hole, check below to make sure the drill does not interfere with anything below.

The faucet should be positioned so it empties into the sink and the spout swivels freely for convenience. If sink has a hole that can accommodate the faucet, no drilling is required. Proceed with mounting the faucet.

Note: Porcelain, Enamel, Ceramic, and Cast Iron sinks are extremely brittle and cracking commonly occurs for untrained professionals. AdEdge accepts no responsibility for damage, instructions must be deemed appropriate by the trained installer.

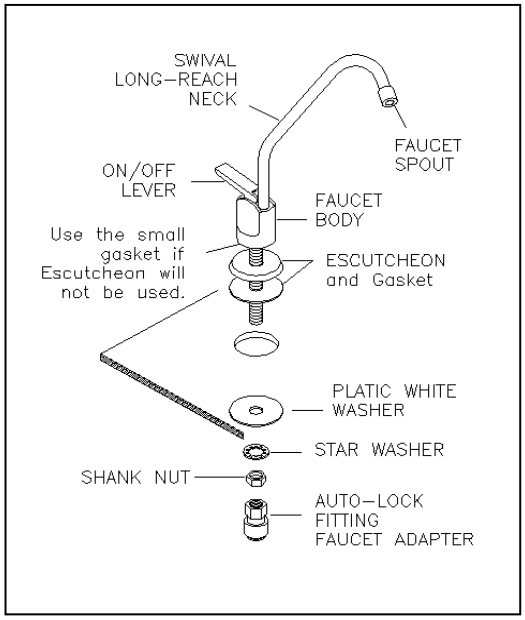
Procedures:

1. Place masking tape over the desired location. Mark the center of the hole.
2. Slowly drill a 1/8" pilot hole at the desired location. Apply lubricating oil or liquid soap to keep the drill bit cool. (Before drilling steel sink center punch an indent at the desired location)
3. Proceed to drill a 1/2" hole using the 1/8" pilot hole. Apply lubricating oil or liquid soap to keep the drill bit cool.

Installation Cont'd

Mounting the Faucet

1. Disassemble hardware from the threaded nipple, except for chrome base plates and rubber washers. (Rubber washers may be replaced with bead of plumber's putty)
2. Feed the threaded nipple through sink and orient the faucet. From below sink or counter, assemble the white spacer flat washer, star washer and hex nut on threaded nipple and tighten by hand.
3. After checking faucet orientation, tighten with a wrench until secure.

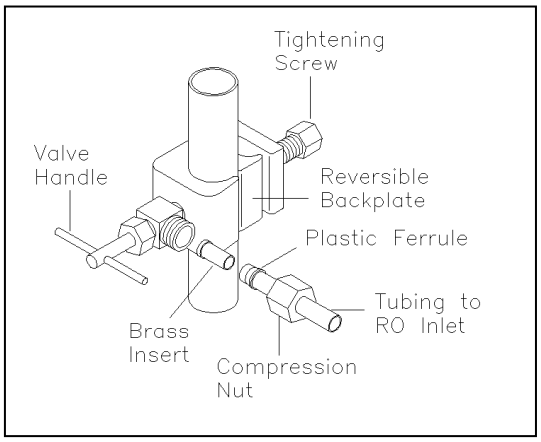


Self-Tapping Saddle Valve

Note: The saddle valve supplied is designed for use with 3/8" to 1/2" OD soft copper supply tubing (plain or chromed) and rigid metal pipe. Do not use with flexible ribbed supply tubing, which is too thin and requires special hardware.

Installation Procedures:

1. Turn off cold water supply from under sink or main water line valve for whole house.
2. If installing in rigid metal plumbing drill 3/16" hole at desired location.
3. Before installing saddle tapping valve, make sure piercing lance does not protrude beyond rubber gasket.
4. Assemble saddle valve on copper tubing.
5. Turn handle clockwise to pierce soft copper tube until valve is firmly seated. (Valve is closed in this position.)
6. Tighten nut/seal around valve stem with wrench.
7. Connect tubing to feed water valve using brass compression nut, insert and plastic sleeve**.**



8. Turn on cold water supply with the saddle valve in the closed position.
9. Visually check for leaks.
10. Proceed to tube fittings and start-up before opening saddle valve.

Installation Cont'd

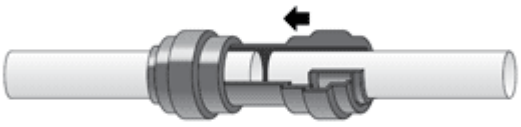
Tubing Connections

With all components in place, complete final tubing connections using these guidelines:

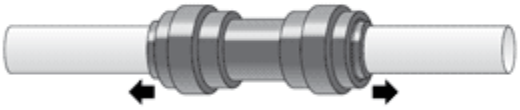
- Tubing should follow contour of the cabinets.
- Cut tubing to desired length using square cuts and proper cutting devise.
- Make no sharp bends.
- Keep tubing from the unit to the faucet as short as practical for good flow.

John Guest® Brand Fittings

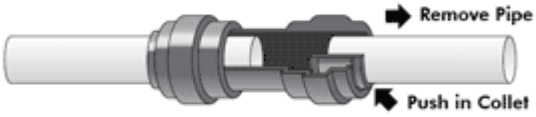
These user-friendly fittings provide superior performance and virtually eliminate the potential for leaks. Proper use of these quick connect fittings is shown. Along with these fittings, all tubing selected must be of high quality and must be cut with a plastic tube cutter or sharp razor with a clean, square cut.



Push tube into the fitting, to the pipe stop



Pull the tube to check it is secure



Depressurize system before removing fittings. Push in the collet against the face of the fitting. With the collet held in this position the tube can be removed.

Should a leak occur at a fitting, the cause is generally defective tubing. To fix a leak, relieve pressure, release tubing, cut off at least 1/4" from the end (square cut), reattach the tubing and confirm the connection is leak free. Each time a new connection is made, it is advisable to cut off 1/4" from the end of the tubing using these fittings.

Procedures:

1. Connect tubing from faucet to meter.
2. Connect tubing from supply valve to unit.

Icemaker Hookup (optional)

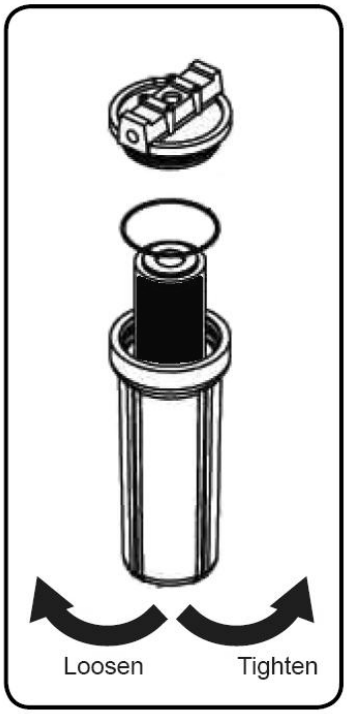
The DWS system device can be connected to any standard refrigerator icemaker or icemaker / water dispenser. (Do not connect to a commercial icemaker)

To complete this operation, connect a tee with shut-off valve into the faucet tubing and route tubing to the refrigerator. (Connecting to an existing copper line is not recommended) Shut off icemaker by lifting lever prior to turning off the existing tap water supply line to the refrigerator.

System Start-Up

Prior to Start-Up

1. Loosen filter canister and remove filter cartridges.



2. Remove cellophane protective wrap from the cartridge.
3. With the cartridge removed from the filter canisters add a drop of 5.25% or 6.0% household bleach or alternative disinfection product for sanitation to each canister.
4. Return the unwrapped filter to the canister, ensure o-ring is still in place and tighten canister to manifold.
5. Check all connections, be sure they are secure.

Start-Up

1. Turn on feed water valve and check for leaks. (Turn off and correct leaks if leaks occur)
2. Close faucet and wait five minutes to see if leaks result.
3. If no leaks are present, turn metering valve clockwise and set to 1,000 gallons or a recommended gallon setting for cartridge service life specific to the site conditions.
4. Before drawing a test sample, open faucet and run water for approximately ten minutes to condition filter cartridges. Initial water may be slightly discolored or contain a few small particles of filter media. These particles are harmless and non-toxic. This is normal during filter conditioning, and will subside prior to the end of the 10 minute period.

Maintenance

The DWS system contains cartridges which must be replaced periodically for proper operation. The AdEdge Model # AD-2710S requires replacement annually, every 1,000 gallons or when effluent arsenic exceeds the treatment goal, whichever occurs first.

Note: Change-out procedures may be amended, depending on source water conditions.

Procedures:

1. Close feed water valve by turning it clockwise.
2. Open faucet to release pressure.
3. Loosen and remove filter housings using wrench provided and discard cartridges.
4. With the cartridge removed from the filter canisters add a drop of 5.25% or 6.0% household bleach or alternative disinfection product for sanitation to each canister.
5. Lubricate o-rings will silicone.
6. Insert new filter cartridges. Ensure o-ring is in place and tighten canister to manifold.
7. Check all connections, be sure they are secure.
8. Follow Start-up Procedures.
9. Record date, gallons treated and water quality conditions.

Trouble Shooting

Note: Turn off water supply before servicing

Problem	Possible Cause	Solution
1. Milky Water	a. Air	a. Air is common in the system on start-up following a new filter installation. Flush the line for 10 minutes to dispel captured air
		b. Air is present in your water as a result of the well
2. Red Water	a. Particle Fines	a. Particle fines are common in the system on start-up following a new filter installation. Flush the line for 10 minutes to dispel fines
	b. Water Chemistry	b. See operating guidelines pg 4 for pre-treatment requirements
3. Low Water Flow	a. Water Chemistry	a. See operating guidelines pg 4 for pre-treatment requirements
	b. Crimp in Tubing	b. Verify tubing is straight
	c. Low Water Pressure	c. Add a booster pump
4. Leaks	a. Fittings Not Tight	a. Tighten fittings
	b. Tubing Damaged	b. Remove tubing from fitting and follow instructions for tube cut and insertions on pg 9
	c. Fittings Damages	c. Replace fitting
	d. Excessive Pressure	d. Install pressure reducer
5. Arsenic not reduced with system	a. Cartridge is Exhausted	a. Replace cartridge
	b. Water Chemistry	b. See operating guidelines pg 4 for pre-treatment requirements