ULTRAVIYOLE

Disinfection Systems

Innovation has a name.

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Dear customer,
Thank you for purchasing a "A.O. Smith" branded Ultraviolet Disinfection System!

You are now the owner of water treatment equipment produced by the world's leading manufacturer of water treatment systems. This system disinfects your water without changing its chemical composition and physical structure by eliminating 99.99% of all bacteria and virus content with the use of ultraviolet light..

Please read this user manual carefully before you install and operate your "A.O. Smith" branded Ultraviolet Disinfection System. To achieve maximum efficiency this user manual provides detailed instructions regarding the installation as well as information related to the proper operation and maintenance of your Ultraviolet Disinfection System.
The installation should only be handled by professionals authorized by A.O. Smith Su Teknolojileri A.Ş.

Spare parts used for maintenance and replacement filter should be approved by A.O. Smith Su Teknolojileri A.Ş. before they are installed.

Any degradation of performance caused by the use of spare parts or component that have not been approved by A.O. Smith Su Teknolojileri A.Ş. will not be covered by our warranty.

If you experience any difficulties during installation or operation, please contact your local distributor to have them carry out repairs or maintenance on your equipment.

Safety Considerations

Make note of the following safety considerations in order to avoid property damage and harm to you and others.

Ignoring the following safety could result in risky situations for you, your equipment and your environment.

Follow all the instructions and remarks in this user manual!

General Considerations

- Do not make any operation on UV Disinfection System before reading all the instructions and warnings in this user manual. Unauthorized disassembly or modification of the system could lead to machine malfunctions or leakage accidents.

- Do not disassemble or modify this UV Disinfection System on your own! Unauthorized disassembly or modification of the machine could lead to machine malfunctions or leakage accidents.

- Use this system in compliance with the design purposes and technical specifications mentioned in this user manual. If this system is not used properly in accordance with design purposes and Technical specifications, the manufacturer will not be responsible from any damages or problems because of improper operations.

- Do not put heavy objects on the UV unit. Placing heavy objects on the unit may cause damage to the water purifier's external cover or internal components, which in turn could lead to leakage, equipment malfunctions or even serious property damage.

- For maintenance and repair, only authorized A.O.Smith After Sales Services should be contacted. Please check with the store where you purchased this product for product consultation in order to arrange for repairs.

- Children should be kept away from this unit.

Electrical Considerations

- Be sure that all necessary plumbing and electrical precautions were guaranteed!
  Realizing the installation without these pre-cautions, there is always a risk of damage to the unit, people and environment.

- Eletrical source of this unit should be grounded!
  Using ungrounded electrical source may result in risks of electrical schocks, short circuits and even fire.

- Grounding should be made by an authorized expert!
  In cases of damages and malfunctions resulted from using the unit with an ungrounded source, A.O.Smith cannot be help responsible.

- The equipment must be disconnected from the power supply during installation and repairs!
  Otherwise it may lead to electric shock.

- Do not use a power source exceeding the equipment's specified value. Use only 230V AC power!
  The electrical current supplied to your equipment by the outlet must not be greater than the specified value; otherwise it may lead to the overheating of your equipment or fire

- Inlet voltage of the system monitor should be regulated!
  Otherwise it may lead to overheating of your equipment or fire

- Do not touch the power plug with wet hands!
  It may lead to electric shock.

- After a power outage, always check the U.V. unit and its operation!
  U.V. rays do not have permanent effect. System will be open to microbiological contamination when there is power outage.

Installation and Plumbing Considerations

- During transportation or lifting, U.V. should be protected against impacts!
  Impacts may result in the damage of the UV lamps, quartz sleeves and also the whole unit.

- During installation and disassembly, do not use excessive force on the unit!
  Excessive force may harm the lamps, quartz sleeves and internal connections and fittings.

- Take into consideration the unit's plumbing necessaties!
  For installation, pipe diameters can vary for each mode. Connect A.O.Smith Dealers for your model's necessesities.

- As a caution to any operational and installation problems, it is recommended to have water drain or a reservoir where the unit is fixed!

- Regularly check and maintan the U.V. unit's seals, caps and quartz sleeves as a precaution to any problems resulted from vibrations or deformations!
  Regular controls can prevent any possible leakages and malfunctions.

- Do not use corrosive chemicals on the connections of inlet and outlet piping of the unit! Using corrosive chemicals may risk your and others' health.

Operational Considerations

- Do not try to operate your unit above its capacity!
  Operating the unit above its capacity may result in serious damage to the unit and low efficiency.

- Install a pre-filtration unit before the U.V. system to reduce TDS (Total Dissolved Solids) to necessary value!
  Pre-filtration before the U.V. unit should not be larger than maximum 5 µm.

  Without pre-filtration, inler water will not be filtered from large particles resulting in breakage of U.V. lamps and quartz sleeves, which will not be covered by A.O.Smith warranty.

- Do not use this water purifier under high water pressure conditions!
  Operating under high pressure conditions may cause the units pipes to rupture, resulting in leakage, the unit working improperly, or even serious property damage. Recommended inlet pressure is 0.05 -0.8 MPa (0,5 Bars to 8 Bars).

- For maximum efficiency, water flow rate should be taken into consideration. While the water flow decreases, the efficiency of the unit will increase. Correct use of the unit will result in the elimination of microorganism in the water by 99,9%.

- Check the inlet water hardness and water consumption regularly. Water sources harder than 150 ppm should be softened before U.V. unit.

- Check the inlet water manganese and hidrogen sulfate ratios regularly. Concentration of manganese and hidrogen sulfate ions should not be greater than 0,05 ppm.

- Check the water from U.V unit periodically for bacterial values!
  It is recommended to check the bacterial values of the water coming from UV unit for safety of the system.

- Do not apply any kind of chemicals on the connection points of inlet-outlet pipes of the UV unit.
  Applying chemicals on any part of U.V. system can create a risk for you and your environment's health.

- Do not let the U.V system be in contact with corrosive materials!
  These materials could corrode the outer cover and adversely affect various parts of the equipment. Toxic and hazardous compounds could penetrate the pipes, causing contamination of the water or leakage, which in turn may cause personal damage or property damage.

- Do not use petroleum or hydrocarbon based oil and lubricants!
  These materals may pose a risk for human health. Always use 100% silicone based oil and lubricants.

- Isopropyl alcohol (pre alcohol) or HCl can be used to clean quatrz sleeves.

Considerations for U.V. Lamp

- Do not activate U.V. lamps outside the U.V. Reactor!

- Direct look into illuminated U.V. ray can harm naked eyes and skin. Always use gloves and googles while working with U.V. lamps!

- While changing the U.V. lamps and maintenance of the unit, always plug off and always wear googles and gloces. Do not look directly to the U.V. lamps!

- During the maintenance of the unit, unplug the lamps and unit.!

Product Description

A mimimum of 30,000 mwatt sec/cm² Ultraviolet Germicidal light is lethal to microorganism, bacteria, viruses present in water. Ultraviolet disinfection is a fast and efficient treatment to remove microorganisms in he water without using anu heat or chemicals. For U.Vç disinfection, U.V. lamp should be in contact with water for the needed duration in right conditions.

"A.O. Smith" Ultraviolet Water Treatment Systems are used in a wide array of different applications from low and high capacity potable water treatment, the treatment of residual water from industrial processes and also the treatment of waste water. The dissolved and/or suspended solids contained in water which is to be disinfected will effect UV disinfection and must be taken into consideration when installing a UV disinfection system. UV transmission is a measure of the transparency of water for UV radiation. Transmission is generally dependent on the amount of humic acid,dissolved solids, iron and manganese it contains.

An essential advantage of ultraviolet disinfection processes is that water remains chemically unaltered (i.e. conductivity, pH). Drinking water retains its pleasant taste and neutral odor. Ultraviolet applications reduce discharge of chemicals and by products used for disinfection of water.

Advantages of Ultraviolet Disinfection Systems:

- Efficient and instant treatment
- No chemical usage and no residua effect
- 99.99 % destruction of bacteria and viruses at rated flow
- No dependency to inlet water temperature and pH value for disinfection

Advantages of A.O. Smith Ultraviolet Disinfection Systems:

- Easy to install
- High efficiency ultraviolet lamps
- Easy lamp replacement without deinstallation by special lamp socket design
- Easy to maintain simple design
- Plasma arc-fusion method welding and electro-polished and passivated reaction chamber
- Long term use with high efficiency
- No need for large storage tanks as a result of 5-10 sec. disinfection process

Technical Specifications

Main Components of Ultraviolet Disinfection System

Quartz Cap: To prevent any water passing into Quartz Sleeve , on both sides end caps are placed. O-rings are placed inside the caps for sealing

Quartz Sleeve: It is a sleeve to house U.V. lamps inside the U.V. Reactor.

U.V. Lamp(s): The most important component that eliminates the bacteria and virus in the water. Ultraviolet rays are lethal to microorganisms, bacteria and viruses in the water.

U.V. Reactor: Stainless steel chamber contains the quartz sleeves, U.V. lamps and other necessary part. Each lamp is placed inside a quartz sleeve to prevent any direct contact with water. Water flowing through the Reactor is disinfected with ultraviolet rays.

Electric/Control Board: Control Board contains the ballast that is the power source that activate U.V. lamp and other electronical equipment to control the functions. Main power input is through this board and the power of U.V. lamps and sensors are transferred to the U.V. Reactor via cables.

Sight Port Plug: Transparent acrylic sight port plug is locatedon the U.V. Reactor. U.V. rays can be observed through this port.

Optional Components of Ultraviolet Disinfection System

Wiper Mechanism (Cleaning Station): It enables to wipe out the dirt around the quartz sleeve periodically without stopping the system through a PLC inside the Control Board.

It is recommended to use "Automatic Wiper Mechanism" on the systems where the inlet water quality is low. In Automatic Systems, wiping periods and frequency can be arranged in accordance with the inlet water quality.

U.V. Sensor: It measures the U.V. intensity. The value can be observed on the board display.

U.V Monitor: It enables to give the wiping signal to the wiper mechanism when the U.V. intensity is not within programmed limits.

U.V. Hourmeter (Standard for Exxel ve Puritron models): It shows the remaining life of U.V. Lamps..

U.V. Temperature Sensor: This sensor measures the water temperature inside the U.V. Reactor. If the water temperature is above the programmed value, it will cut off the system's power.

A.O. Smith Ultraviolet Disinfection Unit Models

Purfect Models Technical Specifications

Standard Features:

- SS 304 Stainless Steel U.V. Reactor
- Electric Control Board
- Sight Port (Purfect 12, 20, 24 models)
- U.V. Signal Lamp
- Silicone O-rings

MODEL	FLOW RATE (m^3/h)	I/O	TOTAL POWER	MAX. OPERATING PRESSURE	OPERATION TEMPERATURE	DIMENSIONS (mm)		
						LENGTH	WIDTH	HEIGHT
Purfect 1	0.23	¼" QC	10 W	10 bars	2-40 °C	275	51	71
Purfect 3	0.68	3/8" QC	11 W	10 bars	2-40 °C	325	51	75
Purfect 6	1.4	¾" - 1"	21 W	10 bars	2-40 °C	505	125	180
Purfect 12	2.7	1"	57 W	10 bars	2-40 °C	930	125	195
Purfect 20	4.8	1"	62 W	10 bars	2-40 °C	930	125	195
Purfect 24	5.4	1½"	114 W	10 bars	2-40 °C	930	135	225

Purfect Description of Components

The following drawing belongs to Purfect 12 model and it is a reference to other models in this series. Please refer to the table below the drawing for component information of all models.

NOTE: Purfect 1 and Purfect 3 are exceptional models as these have two pieces of elbow with hose outlet.

		Quantity					
Picture No.	Description	Purfect 1	Purfect 3	Purfect 6	Purfect 12	Purfect 20	Purfect 24
1	U.V. SS Reactor	1	1	1	1	1	1
2	U.V. Quartz Sleeve	1	1	1	1	1	2
3	U.V. Quartz O-Ring	1	1	2	2	2	4
4	U.V. Quartz Cap – Open End	1	1	1	1	1	2
5	U.V. Quartz Cap - Closed End	-	-	1	1	1	2
6	U.V. Lamp	1	1	1	1	1	2
7	Sight Port Plug	-	-	-	1	1	1

Ecoline Models Technical Specifications

Standard Features:

- SS 304 Stainless Steel U.V. Reactor
- Electric Control Board
- Sight Port Plug (For Eco 50 and higher models)
- U.V. Signal Lamp
- Silicone O-rings

Optional Features:

- Hourmeter
- Flanged connections
- Digital U.V. Monitor (ECO 100 and higher models)
- Wiper Mechanism (ECO 100 and higher models)
- SS 316 Stainless Steel Reactor
- 16 bars Operating Pressure

MODEL	FLOW RATE (m^3/h)	I/O	TOTAL POWER	MAX. OPERATING PRESSURE	OPERATING TEMPERATURE	DIMENSIONS (mm)		
						LENGTH	WIDTH	HEIGHT
ECO 10	1	¾"	12 W	10 bars	2-40 °C	445	55	85
ECO 15	1.5	1"	21 W	10 bars	2-40 °C	505	125	180
ECO 30	3	1"	57 W	10 bars	2-40 °C	930	125	180
ECO 50	5	1½"	62 W	10 bars	2-40 °C	1235	125	195
ECO 100	10	2"	124 W	10 bars	2-40 °C	1235	135	235
ECO 150	15	2"	186 W	10 bars	2-40 °C	1235	135	235
ECO 200	20	2½"	248 W	10 bars	2-40 °C	1235	200	305
ECO 300	30	3"	372 W	10 bars	2-40 °C	1235	225	370
ECO 400	40	3"	496 W	10 bars	2-40 °C	1235	225	370
ECO 500	50	3"	620 W	10 bars	2-40 °C	1235	225	370

Ecoline Description of Components

The following drawing belongs to Ecoline 100 model and it is a reference to other models in this series. Please refer to the table below the drawing for component information of all models

Picture No.	Description	Quantity									
		ECO 10	ECO 15	ECO 30	ECO 50	ECO 100	ECO 150	ECO 200	ECO 300	ECO 400	ECO 500
1	U.V. SS Reactor	1	1	1	1	1	1	1	1	1	1
2	U.V. Quartz Sleeve	1	1	1	1	2	3	4	6	8	10
3	U.V. Quartz O-Ring	1	2	2	2	4	6	8	12	16	20
4	U.V. Quartz Cap - Open End	1	1	1	1	2	3	4	6	8	10
5	U.V. Quartz Cap - Closed End	-	1	1	1	2	3	4	6	8	10
6	U.V. Lamp	1	1	1	1	2	3	4	6	8	10
7	Sight Port Plug	-	-	-	1	1	1	1	1	1	1

Exxel Models Technical Specifications

Standard Features:

- SS 304 Stainless Steel U.V. Reactor with flanged connections
- Electric Control Board
- Sight Port Plug
- U.V. Signal Lamp
- U.V. Hourmeter
- Silicone O-rings
- Control Board Time Delay Relay

Optional Features:

- PLC Control
- Automatic Wiper Mechanism
- Digital U.V.C Monitor
- Temperature Sensor
- SS 316 Stainless Steel Reactor
- 16 bars Operating Pressure

MODEL	FLOW RATE (m^3/h)	I/O	TOTAL POWER	MAX. OPERATING PRESSURE	OPERATING TEMPERATURE	DIMENSIONS (mm)		
						LENGTH	WIDTH	HEIGHT
Exxel 40	10	2"	228 W	10 bar	2-40 °C	940	200	300
Exxel 65	15	2"	342 W	10 bar	2-40 °C	940	225	370
Exxel 100	22	2½"	456 W	10 bar	2-40 °C	940	300	420

Exxel Description of Components

The following drawing belongs to Exxel 40 model and it is a reference to other models in this series. Please refer to the table below the drawing for component information of all models.

		Quantity		
Picture No.	Description	Exxel 40	Exxel 65	Exxel 100
1	U.V. SS Reactor	1	1	1
2	U.V. Quartz Sleeve	4	6	8
3	U.V. Quartz O-Ring	8	12	16
4	U.V. Quartz Cap - Open End	4	6	8
5	U.V. Quartz Cap - Closed End	4	6	8
6	U.V. Lamp	4	6	8
7	Sight Port Plug	1	1	1

Puritron Models Technical Specifications

Standard Features:

- SS 304 Stainless Steel U.V. Reactor with flanged connections
- Electric Control Board
- Sight Port Plug
- U.V. Signal Lamp
- U.V. Hourmeter
- Temperature Sensor
- Silicone O-rings
- Control Board Time Delay Relay
- Flanged I/O Connection
- Failure Alarm and Dry Contact Outlet

Optional Features:

- PLC Control
- Automatic Wiper Mechanism
- Digital U.V.C Monitor
- 4-20 mA Dry Contact Outlet
- SS 316 Stainless Steel Reactor
- 16 bars Operating Pressure

MODEL	FLOW RATE (m^3/h)	I/O	TOTAL POWER	MAX. OPERATING PRESSURE	OPERATING TEMPERATURE	DIMENSIONS (mm)		
						LENGTH	WIDTH	HEIGHT
PUR 130	35	3"	325 W	10 bars	2-40 °C	1570	220	380
PUR 230	65	3"	650 W	10 bars	2-40 °C	1570	200	350
PUR 330	100	4" FLG	975 W	10 bars	2-40 °C	1570	225	411
PUR 430	150	4" FLG	1300 W	10 bars	2-40 °C	1750	230	350
PUR 630	220	5" FLG	2275 W	10 bars	2-40 °C	1750	450	600
PUR 730	280	6" FLG	2925 W	10 bars	2-40 °C	1950	450	650

Puritron Description of Components

The following drawing belongs to Puritron 430 model and it is a reference to other models in this series. Please refer to the table below the drawing for component information of all models.

		Quantity					
Picture No.	Description	PUR 130	PUR 230	PUR 330	PUR 430	PUR 630	PUR 730
1	U.V. SS Reactor	1	1	1	1	1	1
2	U.V. Quartz Sleeve	1	2	3	4	7	9
3	U.V. Kuartz O-Ring	2	4	6	8	14	18
4	U.V. Quartz Cap - Open End	1	2	3	4	7	9
5	U.V. Quartz Cap - Closed End	1	2	3	4	7	9
6	U.V. Lamp	1	2	3	4	7	9
7	U.V. Quartz Cap Plug - Open End	1	2	3	4	7	9
8	Sight Port Plug	1	1	1	1	1	1
9	Temperature Probe	1	1	1	1	1	1

Installation Methods

Our company recommends that your system is installed by trained professionals as the installation process is somewhat complex and requires the use of various tools. However, if you decide to install the purifier yourself, please refer to the following steps and diagrams.

Pre-Installation Preparations

1. Make sure to take all necessary plumbing and electrical precautions and you follow all local building, plumbing and electrical codes.
2. Choose the location where the unit will be installed.
3. Leave enough space on the side of the unit with open end of the quatz sleeve fort he changing process of U.V. lamps.
4. Confirm the availability of the various tools required for installation.
5. Confirm that you have all necessary connectors required for installation.
6. Make sure to turn off the water supply and electricity before commencing installation.

To start installation make sure the following entities are available:

- Inlet water line
- Outlet water line
- Power Source Güç kaynağı
- Drain line or forebay
- Shock absorber

Instructions for Proper Installation

1. U.V. unit should be installed on a solid ground using the brackets provided on the unit.
2. Considering the required space for quartz sleeve and lamp changes, maintenance and repairs, enough space should be left on either side of the U.V. unit.
   We recommend to leave a margin at least the same size with the unit.
3. U.V unit's brackets should be mounted on a Wall with threaded inserts.
4. Inlet and outlet water connections should be made on U.V. Reactor.
5. U.V. lamp should be inserted inside quartz sleeve, quartz sleeve should be located inside the U.V reactor and 4 pin socked should be connected to the lamp.
6. When the unit is connected to the power, the unit will be operational.

NOTE: Puritron models do not include power plug: these models have direct cable connection. Eletrical cables should directly be connected to the electric wiring.

Quartz and U.V. lamps should not be subject to vibration. We recommend to use the vibration absorber materials on your installment area!

U.V.Unit Adjustment Methods and Control Board Operation

1. Place the Control Board on a solid ground.
2. Connect the Control Board's supply plug to a grounded base.
3. Make U.V. lamps' socket connection.
4. Make sure that lamp sockets' are strictly connected to the lamps.
5. Locate U.V. lamps to fit completely inside the unit. U.V lamps should not be seen from outside when the unit is operating.
   Do not touch U.V. lamps with bare hands. If you do clean the lamps before installation using alcohol and a soft cloth. If you do not clean the lamp before installation, the fingerprints on the lamps will affect the quality of UV water output negatively and may cause early lamp failure.
6. If the unit has Automatic Wiper Mechanism, connect U.V. Sensors and Motor Socket.
7. If the unit has Temperature Sensor, connect the sensor.
8. First be sure that all electric connectins are done properly, sockets and lamps are located correctly. Afterwards, connect electricy to the Control Board by moving ON/OFF Pacco Switch, which is located on the right side, to position "1".
9. Time Delay Relay is available on the Control Board as a precaution to power cut-off.
   After 15 seconds of moving the Pacco Switch to position "1", the Control Board will be operational.
10. After the Control Board is operational check the Green Led is on, which indicates there is power and Red Ledis on, which indicates lamps are working. If Green and Red Led Signals are on, this means the unit is working correctly.

NOTE: Some Control Boards may not have Green Led indicator.

11. If the unit has U.V. Monitor or Temperature Sensor, after the Control Board is connected to power, these parts should be calibrated.

WARNING: It is recommended to install shock absorber on the base of the unit.

U.V. light may be harmful to skin and eyes. Do not look into directly U.V. light and always use googles and gloves during installation and maintenance!

Maintenance & Repair

U.V. units are simple systems to use and they do not require much maintenance. However, U.V. Lamps have a certain lifetime and should be renewed when its lifetime is over. Otherwise, the unit cannot generate enough U.V. ray and it cannot perform the disinfection process

Before maintenance always turn off the water supply and disconnect electricity from the unit!

Replacement of U.V. Lamps

After 9000 hours of the initial start-up of the unit, U.V. lamps should be replaced.

Follow the below stepts to replace the U.V. lamps of the unit:

1. Turn off the water supply and electricity of the unit.
2. If there is any plastic plugs on either side of the unit, remove these plastic plugs .
3. Take out the cables by removing the U.V. lamp and connection sockets from the unit.
4. Change the U.V. lamp and re-install the new lamp inside the unit.

WARNING: While U.V. lamps are taken out of the unit, they should not bee overforced and the lamps should be carefully removed without tilting. Otherwise, quartz sleeves may be cracked or break.

Direct look into illuminated U.V. ray can harm naked eyes and skin. Always use gloves and googles while working with U.V. lamps!

Replacement and Maintenance of Quartz Sleeve

1. Turn off the water supply and electricity of the unit.
2. Extract the water inside the U.V. Reactor by removing relief plug.
3. While taking out the quartz sleeve, first remove the U.V lamp inside the quarts sleeve (See Replacement of U.V. Lamps).
4. Loosen the plastic plug on either side of the reactor then slowly disassemble the plugs.
5. Take out the sealing gaskets.
6. Remove the quatz sleeve without using extra force.
7. Take the necessary precautions to prevent the new quartz sleeve to fall down while placing it inside the U.V. Reactor.
8. Tighten the quartz sleeve until your are sure that it will not fall down because of its weight.
9. Squeeze the caps tightly to prevent leaks.
10. Place the U.V. lamp inside and insert the U.V lamp sockets.

WARNING: Quartza sleeves are very fragile, extra cere should be given during the replacement process.

Cleaning of U.V. System

The most important issue during the clening of U.V. unit is the cleaning of quartz sleeve.

Dissolved solids (i.e. limescale, iron-mangenese, organic compounds) within the water will hold on to the quartz sleeve forming a layer of dirt. If this layer of dirt will not be cleaned, U.V rays cannot effectively disinfect the water and the unit will have poor performance.

U.V. Sensor will detect the intensity of the rays are lowered because of the layer of dirt on the quartz sleeve and it will give alarm.

The most effective way to clean the quartz sleeve is "chemical cleaning". It is possible to clean both the U.V. reactor and the quartz sleeve by circulating diluted acid inside the U.V. rector. It is recommended to perform chemical cleaning once a year to all U.V. units icluding the units with the wiper mechanism.

Isopropyl alcohol (pure alcohol) can be used to wipe the quartz sleves that have been removed from the system.

WARNING: Do not use petroleum or hydrocarbon based oil and lubricants as these materals may pose a risk for human health. Always use 100% silicone based oil and lubricants.

Troubleshooting Guide

The information contained in the Troubleshooting Guide can be used as a reference for various problems that may arise on the unit. However, if you are not familiar with the technical issues mentioned, please contact your local vendor and receive support from our Authorized Service teams.

Problem	Possible Cause	Solution
U.V. lamp cannot be activated.	No electrical connection to the unit.	Check if the plug is connected to the electricity. Re-start the unit. If the unit is not still working, turn off the system and call the Authorized After Sales agent.
	U.V.socket cable is not connected.	Be sure that U.V. lamp socket is connected to the U.V. lamp. If the socket is unplugged, re-connect. If the unit is not still working, turn off the system and call the Authorized After Sales agent.
	U.V. lamp failure	Replace the U.V. lamp. If the unit cannot be activated after the lamp change, turn off the system and call the Authorized After Sales agent.
	U.V. ballast failure	Turn off the system and call the Authorized After Sales agent.
High bacteria count in the water.	Quartz sleeve is dirty or stained	Clean the quartz sleeve by chemical cleaning or the apropriate cleaner.
	Feed water quality has changed.	Have the feed water tested to ensure that water quality is still within the allowable limits for the system.
	Contamination in water lines after the U.V. system	It is imperative that effluent water stream be shocked with chlorine (bleach) before water leaves UV system - disinfection system must have a bacterial free distribution system to work effectively .

Problem	Possible Cause	Solution
System shutting down intermittently	Interrupted power supply	Ensure system has been installed on its own circuit, as other equipment may be drawing power away from UV (ie. pump or fridge). UV system should not be installed on a circuit which is incorporated into a light switch.
Unit leaking water	Problem with O-Ring seal	Ensure o-ring is in place, check for cuts or abrasions, clean o-ring, moisten with water/ lubricant and re-install, replace if necessary.
	Condensation on reactor chamber caused by excessive humidity and cold water	Check location of disinfection system and control humidity.
	Inadequate inlet/outlet port connections	Check thread connections.
Pressure drop in the system	Sediment pre-filter clogged (if available)	Check filter cartridge, replace if necessary.
	Flow regulator	Flow regulator will result in pressure drop when approaching full flow.
Water appears milky	Air in water lines	Run water until air is purged
Water is too hot after the U.V. system	Infrequent use of water	Run water until it returns to ambient temperature

Notes

- Our company reserves the right to change product design, configuration, and specifications without prior notice.
- Our company assumes no liability for problems that may occur as a result of technical or editorial errors, omissions or printing problems contained herein.
- Within the scope of the Intellectual and Artistic Works Law, all information, visuals and drawings of the products ontained in these manual are the property of A.O.Smith Su Teknolojileri A.Ş. It is forbidden to use all these information without permission and in case of unauthorized use, It is subject to legal process by A.O.Smith Su Teknolojileri A.Ş.

Your Installer

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