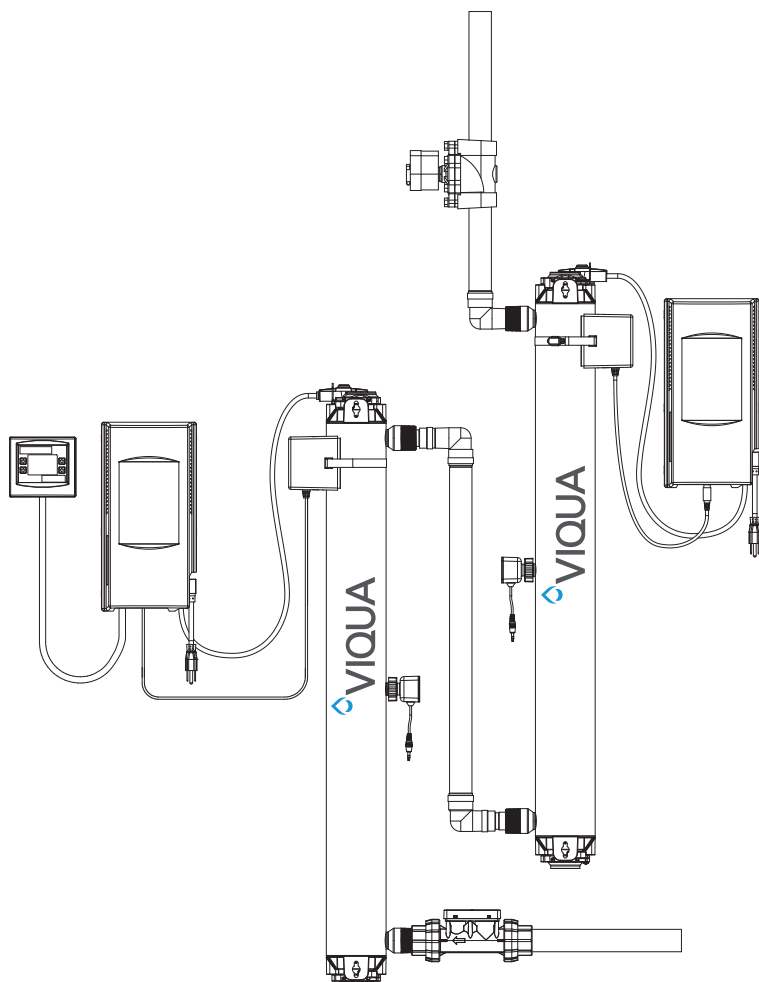


Owner's Manual



Models:
PRO24-100
PRO24-186

Powered by



Congratulations

on the purchase of your ultraviolet (UV) water system! This system uses the most advanced UV technology on the market and is designed to provide you with years of trouble free operation with minimal maintenance.

To ensure ongoing optimal operation, UV lamps need to be replaced annually with VIQUA factory-supplied replacements. VIQUA lamps are the result of extensive development resulting in a highly efficient platform with extremely stable UV output over the entire 9000 hour lifetime. Its success has led to a proliferation of non-genuine copies in the market.

The UV lamp is the heart of the UV system, and there should be no compromise when it's time for a replacement.

Why should you insist on genuine factory supplied VIQUA replacement lamps?

- Use of widely available, non-genuine, replacement lamps has been shown to damage the control module of VIQUA UV equipment.
- An increasing number of calls to VIQUA Technical Support are connected with non-genuine lamps being used (unknowingly) as replacements.
- Damage arising from the use of non-genuine lamps poses a safety risk and is not covered by equipment warranty.
- Unless the UV equipment is equipped with a UV sensor (monitor), it is not possible to verify the UV (invisible) output of replacement lamps.
- Similar appearance to the original lamp and the presence of (visible) blue light does not mean equivalent performance.
- VIQUA replacement lamps undergo rigorous performance testing and strict quality control processes to ensure that the safety and performance certifications of the original equipment are not compromised.

So, you can see that it's simply not worth the risk! Insist on genuine VIQUA replacement lamps.


















Section 1 Safety Information

These are the original instructions. Please read this entire manual before operating this equipment. Pay attention to all danger, warning, and caution statements in this manual. Failure to do so could result in serious personal injury or damage to the equipment.



Make sure that the protection provided by this equipment is not impaired. DO NOT use or install this equipment in any manner other than that specified in the installation manual.

1.1 Potential Hazards:

Read all labels and tags attached to the system. Personal injury or damage to the system could occur if not observed.

	Waste electrical and electronic equipment (WEEE). This symbol indicates that you should not discard wasted electrical or electronic equipment (WEEE) in the trash. For proper disposal, contact your local recycling/reuse or hazardous waste center.		This symbol indicates not to store any combustible or flammable material close to the system.
	This symbol indicates there is Mercury present.		This symbol indicates that the contents of the transport package are fragile and the package should be handled with care.
	This is the safety alert symbol. Obey all safety messages that follow this symbol to avoid potential injury. When on the equipment, refer to the Operational and Maintenance manual for additional safety.		This symbol indicates safety glasses with side protection is required for protection against UV exposure.
	This symbol indicates a risk of electrical shock and/or electrocution exists.		This symbol indicates gloves must be worn.
	This symbol indicates the marked equipment may contain a component that can eject forcibly. Obey all procedures to safely depressurize.		This symbol indicates safety boots must be worn.
	This symbol indicates the system is under pressure.		This symbol indicates the operator must read all available documentation to perform required procedures.
	This symbol indicates there is a potential UV hazard. Proper protection must be worn.		This symbol indicates the plumber must use copper piping.
	This symbol indicates the marked item could be hot and should not be touched without care.		This symbol indicates that the system should only be connected to a properly grounded, grounding-type controller receptacle that is protected by a Ground Fault Circuit Interrupter (GFCI).
	This symbol indicates there is a potential for VERY hot water when flow is started.		

1.2 Safety Precautions:

⚠ DANGER	
 	<p>Failure to follow these instructions will result in serious injury or death.</p> <ul style="list-style-type: none"> ELECTRIC SHOCK: To avoid possible electric shock, special care should be taken since water is present near the electrical equipment. Unless a situation is encountered that is explicitly addressed by the provided maintenance and troubleshooting sections, DO NOT attempt repairs yourself, refer to an authorized service facility. GROUNDING: This product must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electrical shock. This system is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances. Improper connection of the equipment-grounding conductor can result in a risk of electrocution. Check with a qualified electrician or service personnel if you are in doubt as to whether the outlet is properly grounded. DO NOT modify the plug provided with this system – if it does not fit in the outlet, have a proper outlet installed by a qualified electrician. DO NOT use any type of adapter with this system. GROUND FAULT CIRCUIT INTERRUPTER PROTECTION: To comply with the National Electrical Code (NFPA 70) and to provide additional protection from the risk of electric shock, this system should only be connected to a properly grounded, grounding-type controller receptacle that is protected by a Ground Fault Circuit Interrupter (GFCI) or to a residual current device (RCD) having a rated residual operating current not exceeding 30 mA. Inspect operation of GFCI as per manufacturer's suggested maintenance schedule. DO NOT operate the UV system if it has a damaged cord or plug, if it is malfunctioning or if it has been dropped or damaged in any manner. DO NOT use this UV system for other than intended use (potable water applications). The use of attachments not recommended or sold by the manufacturer / distributor may cause an unsafe condition. DO NOT install this UV system where it will be exposed to the weather or to temperatures below freezing. DO NOT store this UV system where it will be exposed to the weather. DO NOT store this UV system where it will be exposed to temperatures below freezing unless all water has been drained from it and the water supply has been disconnected.

Safety Information

⚠ WARNING



- During extended periods of no water flow, the water in your chamber can become very hot (Approx. 60 °C) and potentially lead to scalding. It is recommended to run your water until this hot water has been purged from your chamber. Do not allow water to contact your skin during this time. To eliminate this condition, a temperature management valve can be installed at the outlet of your UV system.
- Do not pass water through the UV system for a minimum of 5 minutes after applying power (including after power interruptions) to avoid passing under-treated water that may, in rare instances, pose health hazards.
- This system contains a UV Lamp. Do not operate the UV Lamp when it is removed from the chamber. Unintended use or damage of the system may result in the exposure of dangerous UV radiation. UV radiation may, even in little doses, cause harm to the eyes and skin.
- Changes or modifications made to this system without the consent of the manufacturer could render the system unsafe for operation and may void the manufacturer's warranty.



WARNING: This product can expose you to chemicals including phthalates, which is known to the state of California to cause cancer, and mercury, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

⚠ CAUTION



Failure to follow these instructions could result in minor or moderate injury.

- Double pole/Neutral fusing.
- Carefully examine the UV system after installation. It should not be plugged in if there is water on parts not intended to be wet such as, the controller or lamp connector.
- Due to thermal expansion concerns and potential material degradation due to UV exposure, it is recommended to use metal fittings and at least 10" of copper pipe on the outlet of your UV chamber.
- Hg EXPOSURE:** The UV lamp contains mercury. If the lamp breaks, then avoid inhalation or ingestion of the debris and avoid exposure to eyes and skin. Never use a vacuum cleaner to clean up a broken lamp as this may scatter the spilled mercury. Obey local regulations and guidelines for the removal and disposal of mercury waste.

NOTICE



- The UV systems are validated through microbial testing. Through this testing, performance data has been generated for UV dose delivery to inactivate Cryptosporidium, Giardia, and Adenovirus.
- The UV lamp inside the UV system is rated at an effective life of approximately 18000 hours. To ensure continuous protection, replace the UV lamp once in two years.
- The UV system is not to be used or played with by children. Persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, are also not to handle the UV system unless they have been given supervision or instruction.
- This system is intended to be permanently connected to the water lines.
- This system is not intended to be used in or above water or outdoors or used in swimming pools when persons are in the pool.
- EXTENSION CORDS:** If an extension cord is necessary, use only 3-wire extension cords that have 3-prong grounding-type plugs and 3-pole cord connectors that accept the plug from this system. Use only extension cords that are intended for outdoor use. Use only extension cords having an electrical rating not less than the rating of the system. A cord rated for less amperes or watts than this system rating may overheat. Exercise caution when arranging the cord so that it will not be tripped over or pulled. DO NOT use damaged extension cords. Examine extension cord before using and replace if damaged. DO NOT abuse extension cord. Keep extension cord away from heat and sharp edges. Always disconnect the extension cord from the receptacle before disconnecting this system from the extension cord. Never yank cord to pull plug from outlet. Always grasp the plug and pull to disconnect.
- If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer or its service agent.
- SYSTEM PROTECTION:** To protect your Controller, a UL1449 certified (or equivalent) transient voltage surge suppressor is strongly recommended.
- The UV lamp in this system conforms to the applicable provisions of the Code of Federal Regulations (CFR) requirements including, Title 21, Chapter 1, Subchapter J, Radiological Health.
- Read and understand the Owner's Manual before operating and performing any maintenance on this equipment.

1.3 Water Chemistry

Water quality is extremely important for the optimum performance of your UV system. The following levels are recommended for installation:

Water Quality and Minerals	Level
Iron	< 0.3 ppm (0.3 mg/L)
Hardness*	< 7 gpg (120 mg/L)
Turbidity	< 1 NTU
Manganese	< 0.05 ppm (0.05 mg/L)
Tannins	< 0.1 ppm (0.1 mg/L)
UV Transmittance	> 75% (call factory for recommendations on applications where UVT < 75%)

* Where total hardness is less than 7 gpg, the UV unit should operate efficiently provided the quartz sleeve is cleaned periodically. If total hardness exceeds 7 gpg, the water should be softened. If your water chemistry contains levels in excess of those mentioned above, proper pre-treatment is recommended to correct these water problems prior to the installation of your UV system. These water quality parameters can be tested by your local dealer, or by most private analytical laboratories. *Proper pre-treatment is essential for the UV system to operate as intended.*

Section 2 General Information

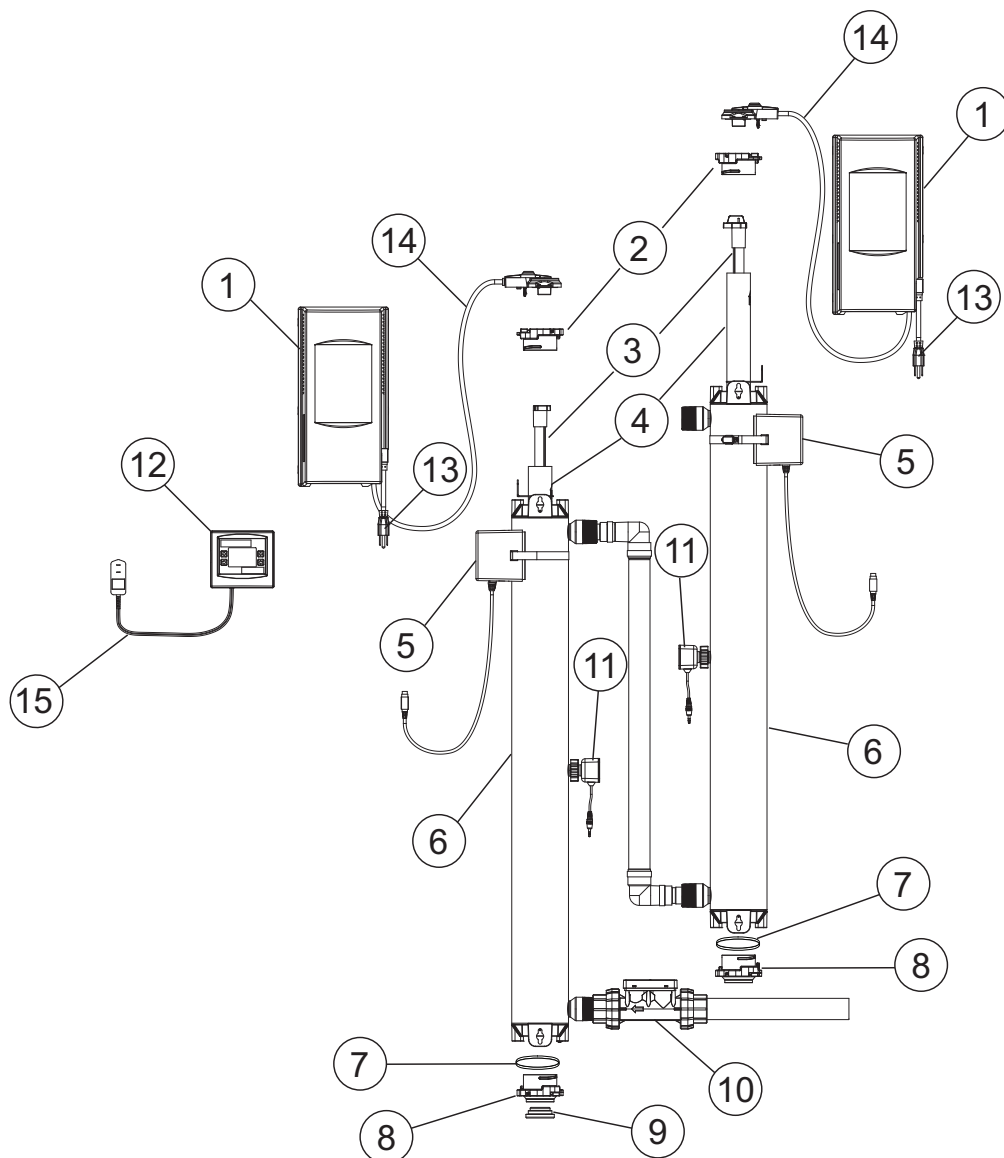


Figure 1 System Components

Note: PRO24-186 system shown. PRO24-100 systems only have one controller and one chamber.

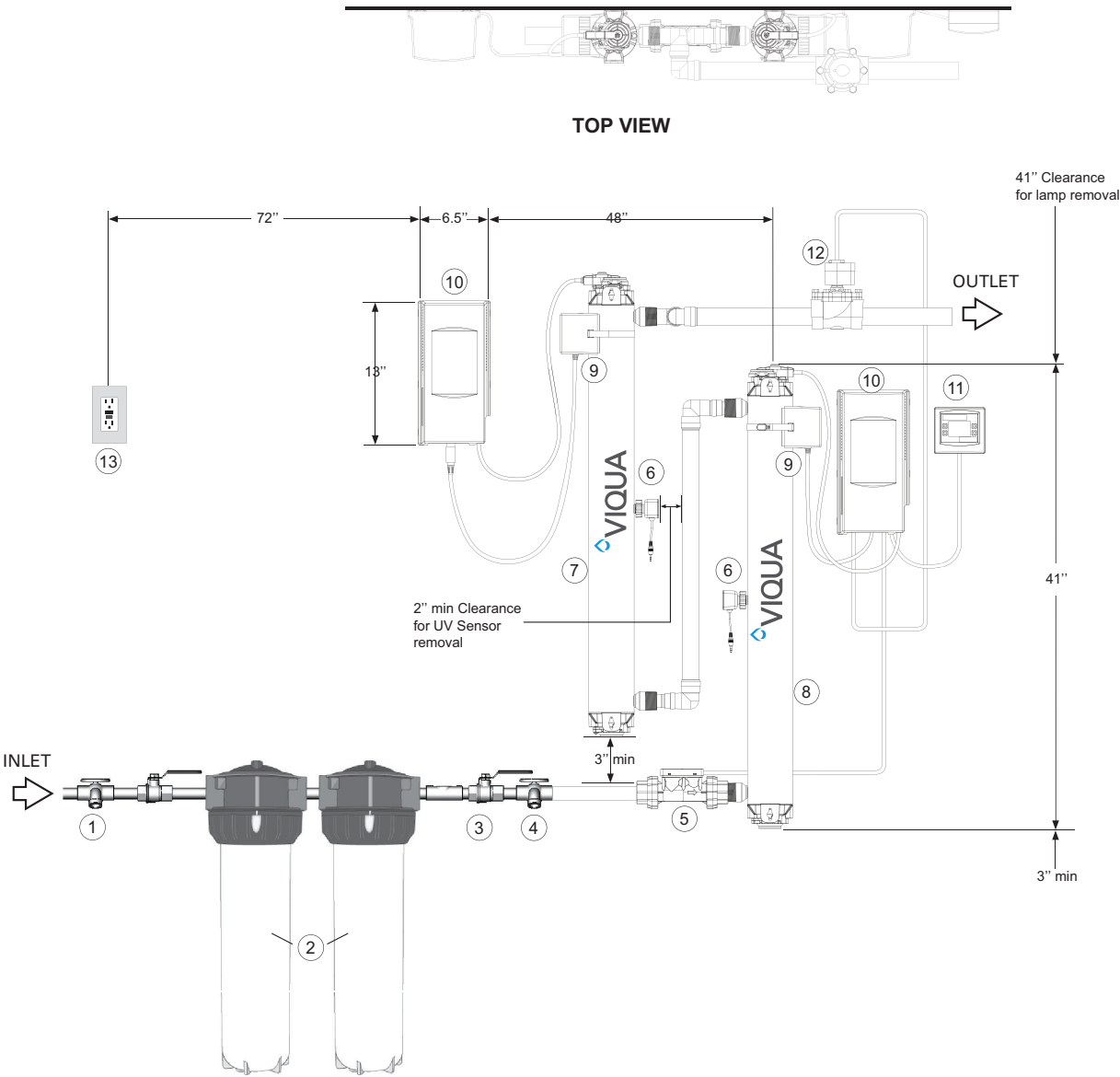
Item	Description	Part Number	UV Systems
1	Controller	650709-013	PRO24-186
		650709-014	PRO24-100
2	Top bolt and wireform	602916 and 602896	Used for all systems
3	Lamp	602856	Used for all systems
4	Sleeve	602976	Used for all systems
5	CoolTouch fan	650630	Used for all systems
6	Chamber	-	Used for all systems

General Information

7	O-ring	002233	Used for all systems
8	Bottom bolt (includes screw)	603053	Used for all systems
Item	Description	Part Number	UV Systems
9	Sleeve removal tool	602988	Used for all systems
10	Flow meter sensor	410982R-30	Used for all systems
11	Sensor	650580	Used for all systems
12	COMMcenter	270288-R	Used for all systems
13	Power cord	602636	NORTH AMERICAN (NEMA 5-15P), 3-PRONG GROUNDED
		602637	CONTINENTAL EUROPEAN (CEE 7/7) 2-PIN WITH GROUND, "SCHUKO"
14	Lamp cord	-	Used for all systems
15	RJ45 Ethernet Cable (x2)	602942	Used for all systems

2.1 Dimensions and Layout

Dimensions and Layout for PRO24-186



Dimensions and Layout for PRO24-100

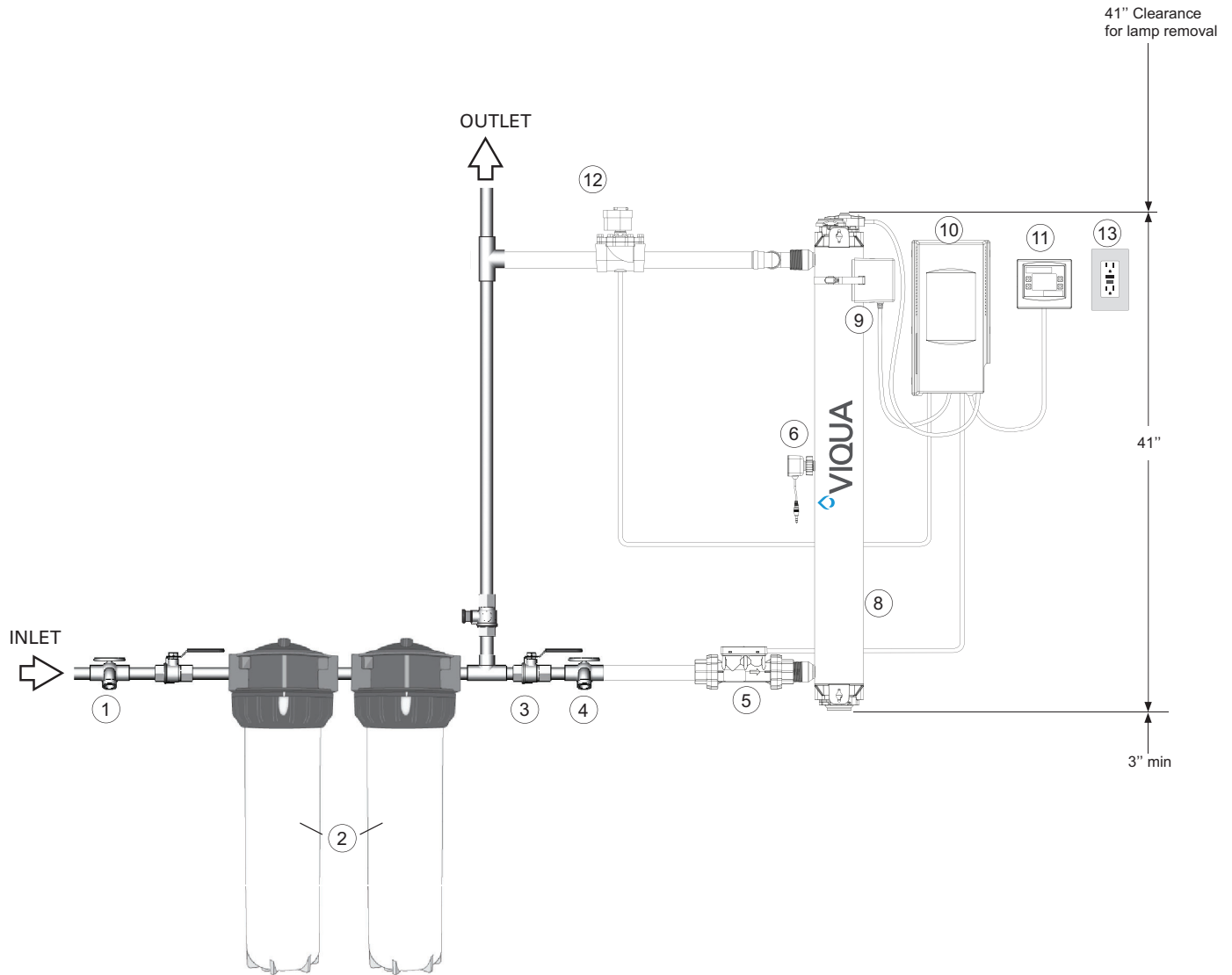


Figure 2 System - Dimension and Layout

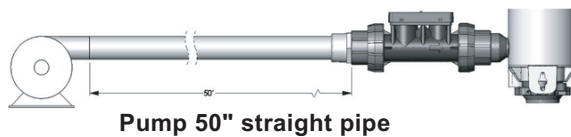
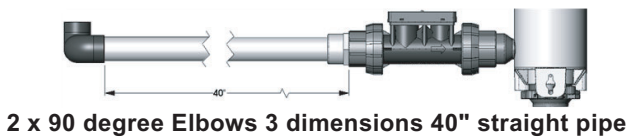
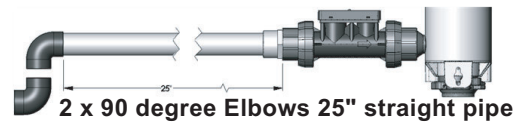
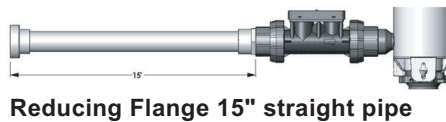
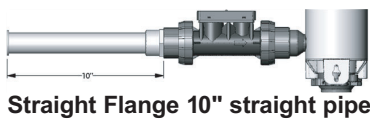
Item	Description	Function
1	Sample valve	Allows for sampling of raw water.
2	Pre-treatment	Pre-treatment allows the UV system to operate effectively. The water should meet certain water quality parameters before entering UV System.
3	Shut-off valve	Required to allow maintenance of UV system.
4	Sample valve	Allows for sampling of water entering UV chamber; necessary in order to confirm water being treated is of adequate quality.
5	Flow sensor	Monitors flow to provide real time dose (UV exposure) Flow Meter Sensor must be installed in this orientation with the LED facing up. (PRO10, PRO20, PRO30 only).
6	Sensor*	Monitors UV output to ensure proper dose (UV exposure) is being provided.
7	Primary UV chamber	MUST BE INSTALLED VERTICALLY.
8	Secondary UV chamber	MUST BE INSTALLED IN SERIES WITH PRIMARY UV CHAMBER. (PRO24-186 only)
9	CoolTouch™ fan	Removes excess heat from water in chamber during periods without water flow.
10	Controller*	Powers and controls the UV lamp and other devices. Provides human interface, displaying information and allowing control inputs (such as muting the audible alarm).
11	COMMcenter	Displays system performance. Combines the dose levels of both UV Chambers to ensure adequate performance (4-log virus) is maintained. (PRO24-186 only)

Installation

Item	Description	Function
12	Solenoid valve	Allows water supply to be shut-off when proper performance cannot be assured. Note: If the ground from your electrical panel is tied to your copper water lines, and you are using a Plastic Body solenoid valve, installation of an approved ground strap is required. This ground strap will maintain continuity between the lines that have been cut to install the solenoid. Check your local electrical code for the correct clamp and cable size.
13	Power source	Provides power to the controller. For safety reasons the outlet must be protected by a Ground Fault Circuit Interrupter (GFCI). Note: To protect the controller, a UL1449 certified (or equivalent) transient voltage surge suppressor is required.
* - Qty 2 for PRO24-186 models		

2.2 Pipe Lengths

The recommended minimum straight pipe lengths for the various piping configurations are:



Note: Flow Meter Sensor must be mounted in the following orientation with the LED facing up. Ensure all air is purged from the piping and Flow Meter Sensor. All straight length to the Flow Meter Sensor must be 1.00" in diameter.

Section 3 Installation

3.1 Installing UV System

⚠ CAUTION



Electronic controller must be connected to a Ground Fault Protected Circuit (GFCI) receptacle.
Adequate dose achieved only when systems are plumbed in series (PRO24-186 systems).

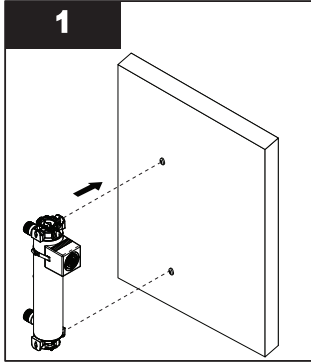
Prerequisites:

- Determine appropriate indoor location of the controller, COMMcenter and chamber, refer to [Section 2.1](#).
- Make sure that the controllers are installed higher than the chambers and away from all water sources.
- Ensure adequate clearance above chambers to allow for removal of the lamps and sleeves.
- Make sure to turn off the main water supply.
- Make all necessary plumbing connections, refer to [Section 2.1](#).

For maintenance purposes and where appropriate it is recommended that a by-pass is installed.

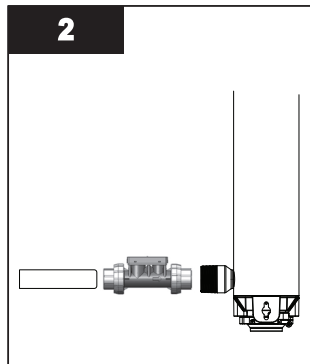
If the ground from your electrical panel is tied to your copper water lines installation of an approved ground strap is required. This ground strap will maintain continuity between the lines that have been cut. Check your local code for the correct clamp and cable size.

Procedure:



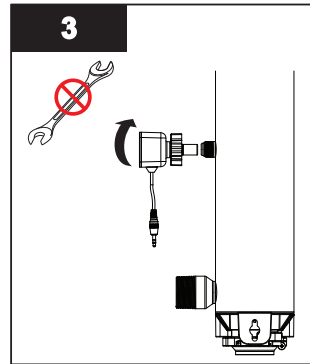
- Install the UV Chamber vertically with a 37.5" spacing on the wall using screws.

Note: Ensure chamber is installed with green arrows pointing upwards.

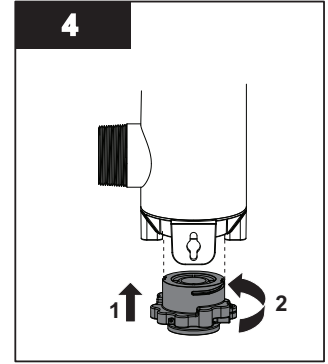


- Connect Flow Meter Sensor to the primary chamber using 1/4" unions supplied.

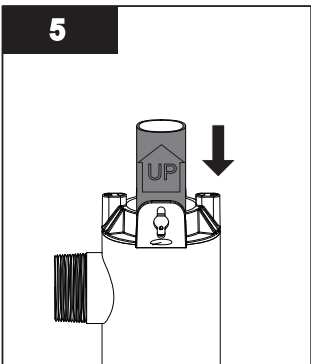
Note: LED must face up. Ensure proper length of straight pipe 1.0" Diameter at inlet side of Flow Meter Sensor and use a 1/4" to 1" Reducing Coupler (not supplied).



- Install the sensor to the UV system.
- Note:** DO NOT use wrench to tighten the sensor.
- Ensure adequate clearance for sensor removal.

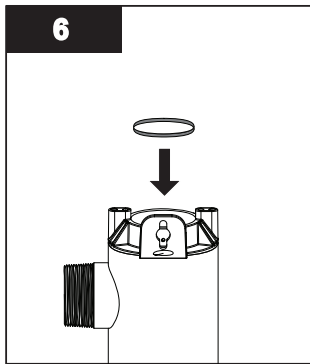


- Connect the sleeve bolt at the bottom of the sleeve assembly. Ensure sleeve bolt is rotated full 1/4 turn until positive stop.

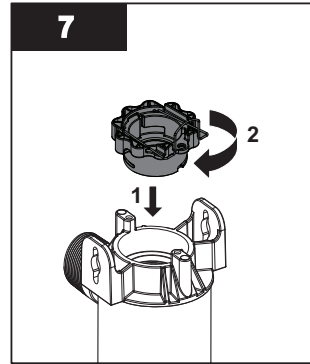


- Insert sleeve with arrow pointing up.

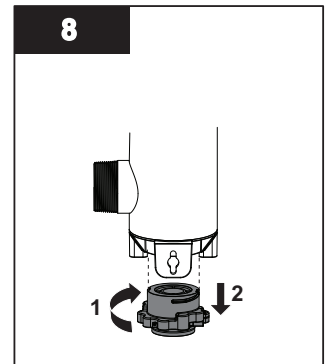
Note: DO NOT rotate sleeve and touch glass with bare hands.



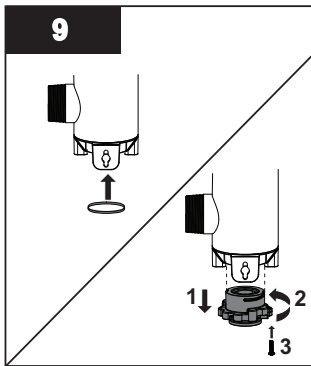
- Wet O-ring with water then place over top end of sleeve.



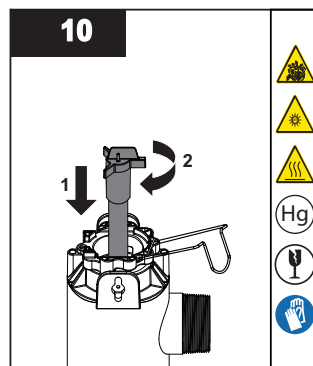
- Connect the sleeve bolt to the top of the sleeve assembly. Ensure sleeve bolt is rotated full 1/4 turn until positive stop.



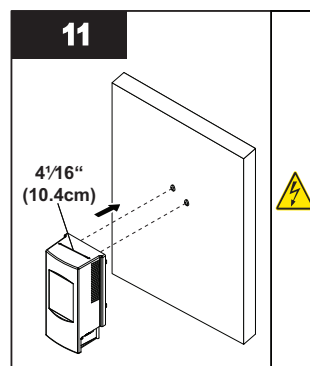
- Remove the sleeve bolt at the bottom of the sleeve assembly.



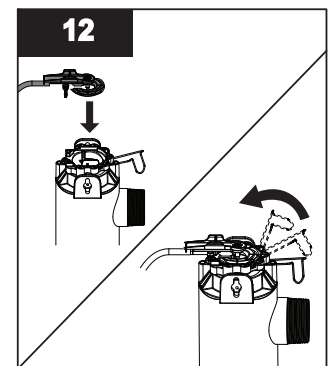
- Wet O-ring with water then place over bottom end of sleeve.
- Reconnect the sleeve bolt and install screw.



- Install and rotate the lamp into the sleeve assembly. Ensure to rotate the lamp completely.
- Note:** Do not touch glass with bare hands.



- Install the controller unit to the wall. Refer to [Section 2.1](#).



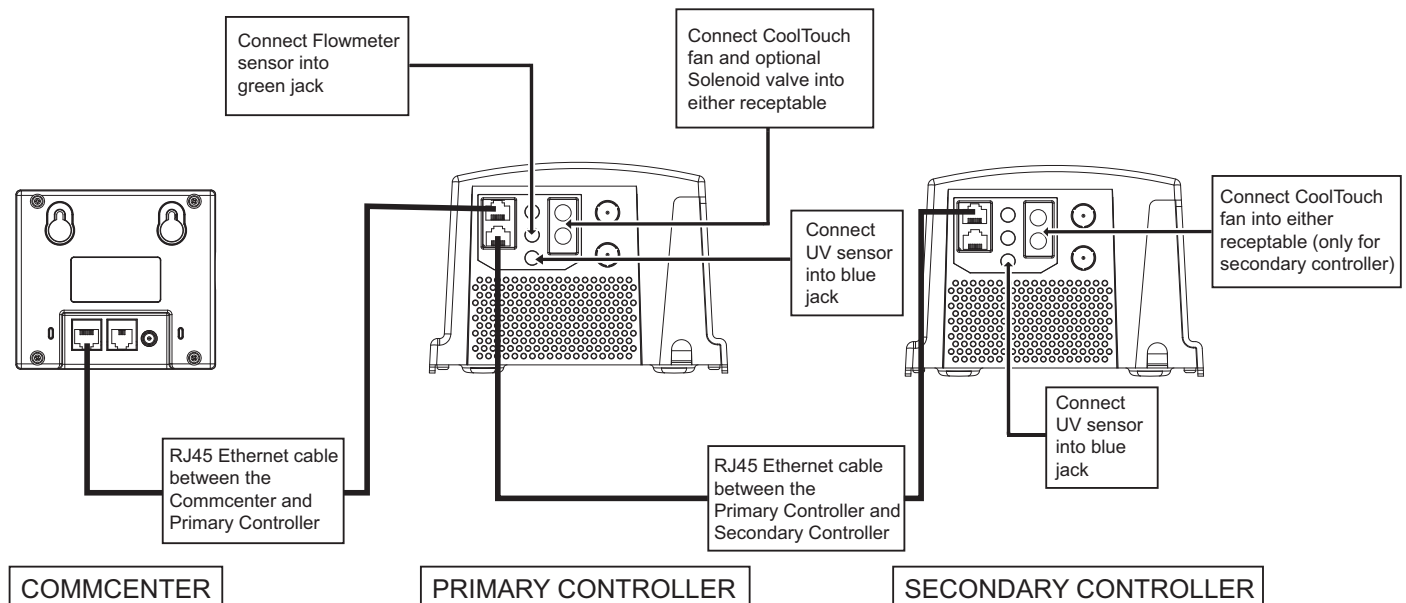
- Install lamp harness onto chamber.
- Notes:** 1) Ensure lamp harness ground is inserted into chamber ground terminal.
- 2) Ensure magnet on top of chamber aligns with proximity sensor on lamp harness.
- Lock wire form into position.

13. For PRO24-186 systems, repeat steps 1-12 for the Secondary reactor. Follow recommendations as shown in [Section 2.1](#).

Notes: 1) Flow meter and solenoid valve can only be connected to the primary controller.

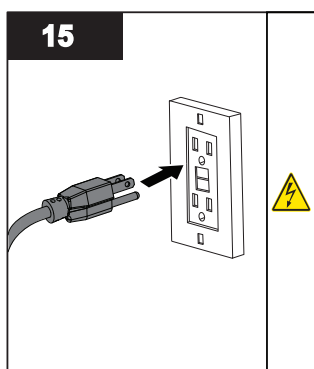
2) There is no flow meter for the secondary chamber.

14.



- Make connections for UV sensor, Commcenter, CoolTouch fan, Flow meter sensor and Solenoid valve (if applicable) following the diagram above.

Note: For PRO24-100 systems secondary controller is not used.



- Connect controllers to a power bar or outlet. For PRO24-186 systems, ensure power to each controller is applied within 20 seconds.

Note: Outlet must be protected by a Ground Fault Circuit Interrupter (GFCI).

- Lamp ignition may take up to 25 seconds. Wait until lamp is fully warmed-up. It may take up to 4 minutes.
- Allow water flow to one faucet or other water outlet, then close the outlet and inspect for leaks.

16. Set the time and date on the COMMcenter. Refer to [Section 5.2](#) on [page 22](#).

- The units are identified by an "address". Until they have been connected, all units are addressed as "0".
- The COMMcenter assigns each unit an address when first connected.
- Each unit then retains the address it is assigned, even when unplugged or connected to another COMMcenter.

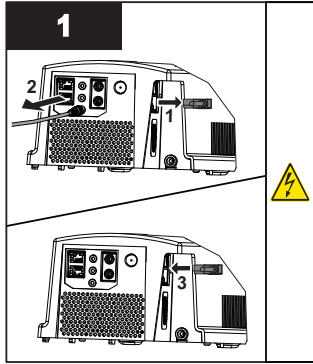
Note: After installing the UV lamp or sleeve perform the cleaning procedure, refer to [Section 3.2](#).

3.2 Cleaning Procedure

It is imperative that the entire distribution system located after the UV be chemically cleaned to ensure that the plumbing system is free from any contaminants. The cleaning process must be performed immediately after the UV unit is installed and repeated thereafter whenever the UV is shut down for service, without power, or inoperative for any reason. The procedure for cleaning the plumbing system is readily accomplished as follows:

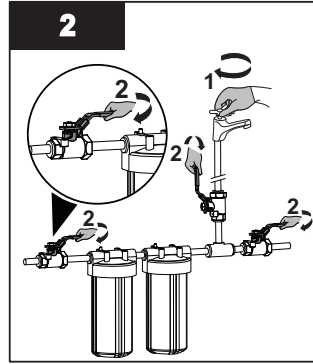
Installation

Procedure:

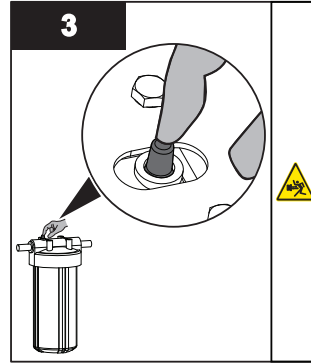


- Disconnect both controllers then disconnect the UV sensor from blue jack.
- Reconnect the controller with out UV sensor.

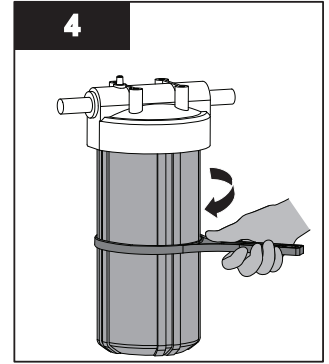
Note: PRO24-100 systems only have one controller.



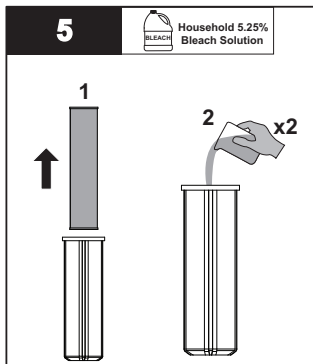
- Shut off the water supply.
- Open an upstream faucet to release line pressure



- Press the pressure button to release the pressure from the cartridges.

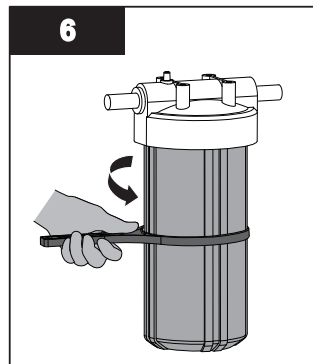


- Remove filter housing(s) using sump wrench.

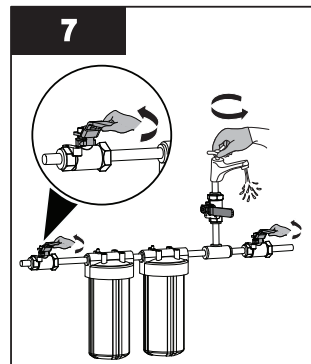


- Remove cartridge(s) and pour 2 cups of household bleach solution into the filter housing(s).

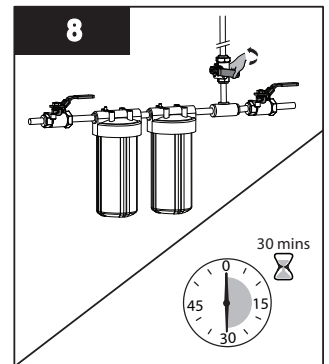
Note: DO NOT use Hydrogen Peroxide.



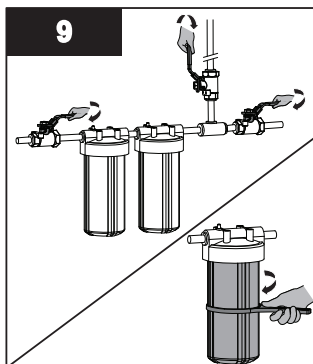
- Connect only the filter housing(s) to the unit.



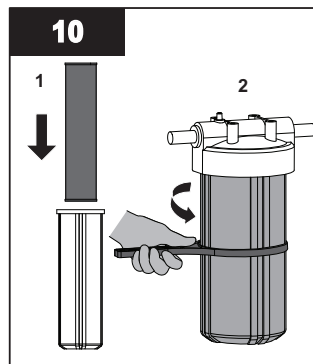
- Open each faucets and turn on water supply.
- Allow water to fill the chamber.



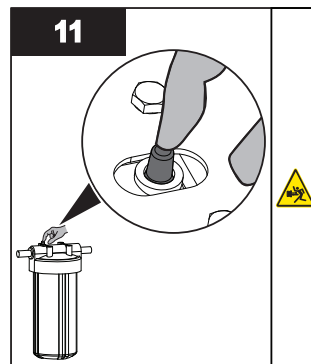
- Turn on the cold water supply followed by hot water (if available) until you smell the bleach.
- Close all faucets and allow bleach to settle in the water lines for 30 minutes.



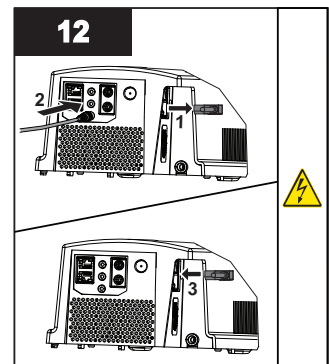
- With all faucets closed, remove filter housing(s) using sump wrench.
- Press pressure release button to release pressure (Refer to step 3).



- Reinstall the cartridge(s) into filter housing(s) and connect to the unit.
- Flush all water outlets until bleach can no longer be smelled (at least 5 minutes).



- Press the pressure button to purge air and to complete the cleaning procedure.



- Disconnect both controllers then connect the UV sensor from blue jack.
- Reconnect the controller.

Note: PRO24-100 systems only have one controller.

Section 4 Maintenance

⚠ WARNING



- Always disconnect power before performing any work on the UV system.
- Always shut-off water flow and release water pressure before servicing.
- Regularly inspect your disinfection system to ensure that the power indicators are on and no alarms are present.
- Replace the UV lamp every two years to ensure maximum performance.
- Always drain the chamber when closing a seasonal home or leaving the unit in an area subject to freezing temperatures.

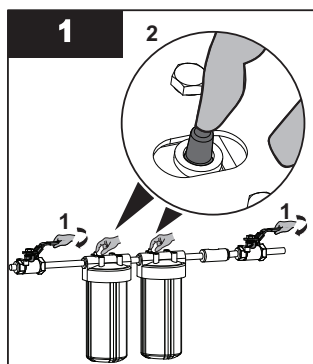
4.1 Replacing UV Lamp

NOTICE

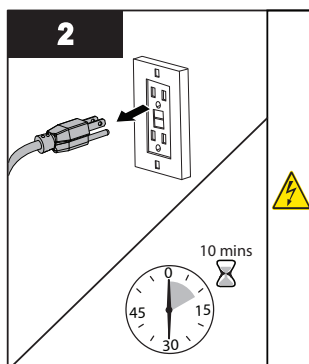
Do not use water during replacement of UV lamp.

UV lamp replacement is a quick and simple procedure requiring no special tools. The UV lamp must be replaced after 18000 hours of continuous operation (approximately two years) in order to ensure adequate performance.

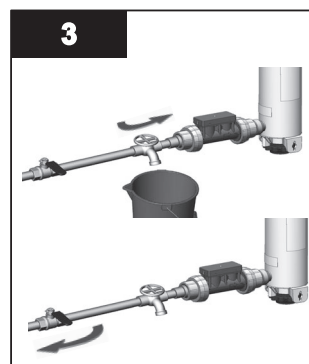
Procedure:



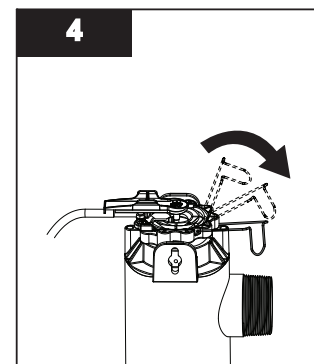
- Close all faucets and water supply.
- Press the pressure button to release the pressure from the cartridges.



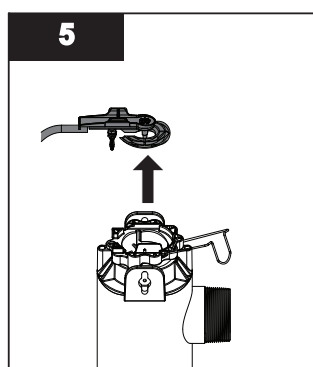
- Disconnect main power source and allow the unit to power down for 10 minutes.



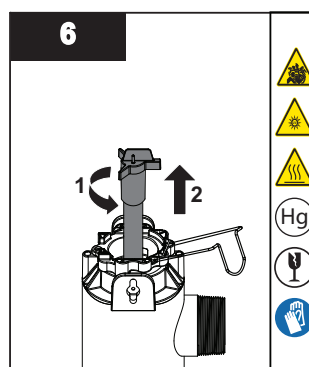
- Drain the water from the UV system.
- Close the water inlet after the water is drained.



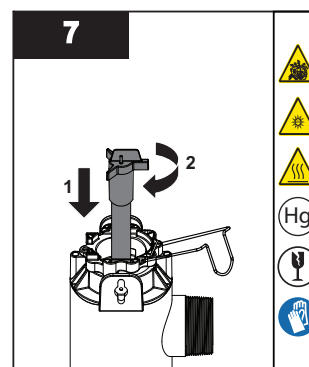
- Pinch wire form to release the lamp connector.



- Remove the lamp connector.

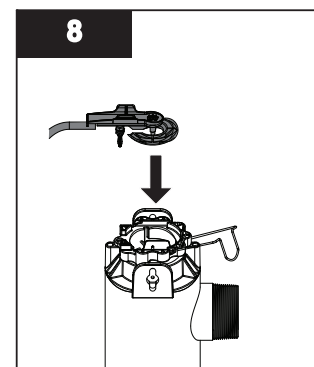


- Rotate and remove the UV lamp from the sleeve.

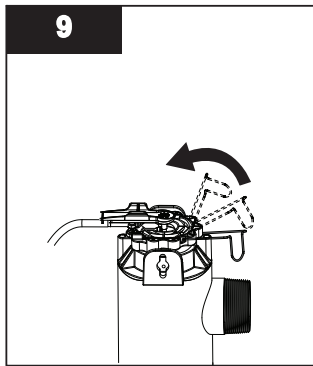


- Install and rotate the lamp into the sleeve assembly. Ensure to rotate the lamp completely.

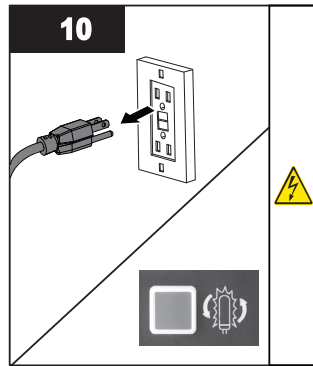
Note: Do not touch glass with bare hands.



- Reinstall the lamp connector.

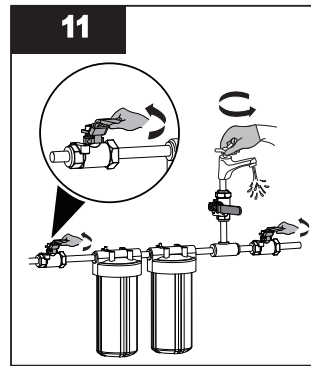


- Lock the wire form into position.



- Restore Power.
- Press and hold the "New Lamp" button for 5 seconds till you hear a beep or reset using CommCenter. Refer to [How can I reset the lamp run hours after installing a new lamp?](#)

Note: Lamp ignition may take up to 25 seconds.



- Turn on the water supply.

Notes: 1) After replacing the UV lamp perform the cleaning procedure, refer to [Section 3.2](#).

2) Repeat steps 3 to 11 for the secondary chamber.

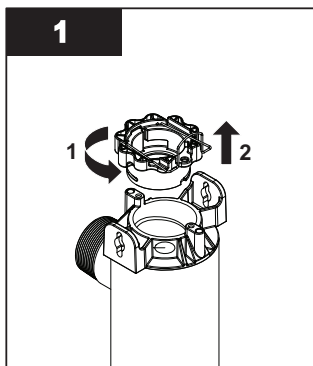
4.2 Cleaning and Replacing Sleeve

Note: Minerals in the water slowly form a coating on the lamp sleeve. This coating must be removed because it reduces the amount of UV light reaching the water, thereby reducing performance. If the sleeve can not be cleaned, it must be replaced.

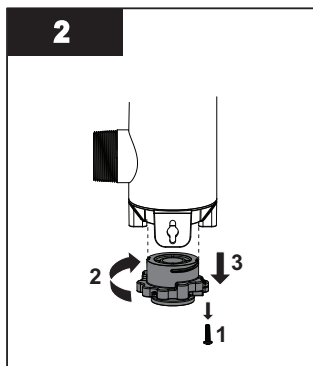
Prerequisites:

- Shut off water supply and drain all lines.
- Remove the UV lamp. Refer to [Section 4.1](#).

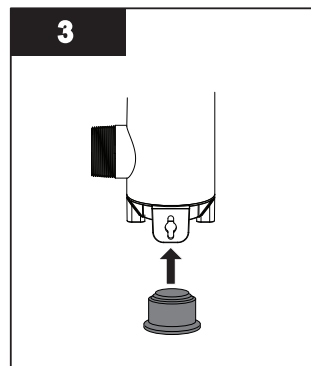
Procedure:



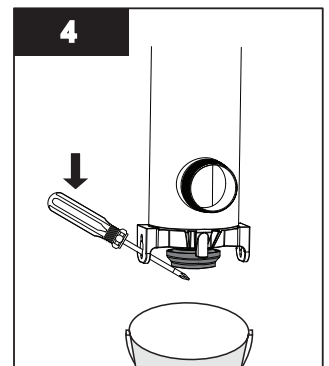
- Remove the sleeve bolt from top of the sleeve assembly.



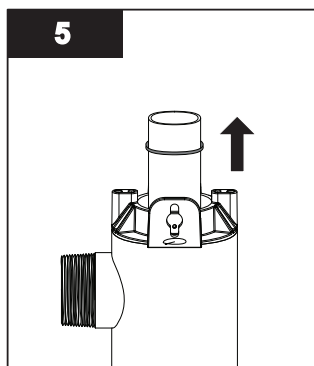
- Remove screw from the sleeve bolt.
- Remove the sleeve bolt at the bottom of the sleeve assembly.



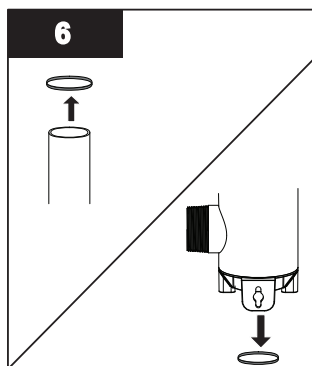
- Insert the sleeve removal tool into the bottom of the sleeve.



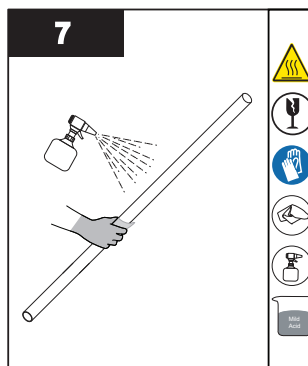
- Pry sleeve upward until it come loose.
- Place bucket under UV chamber, water will escape.



- Remove the sleeve.

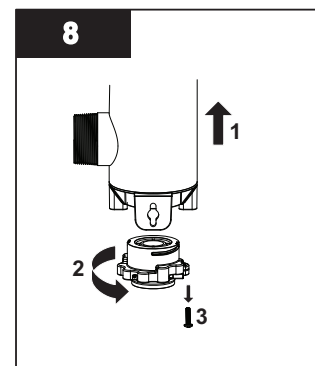


- Remove O-ring from top of the sleeve.
- Remove O-ring from bottom of the chamber (it may fall during sleeve removal process).

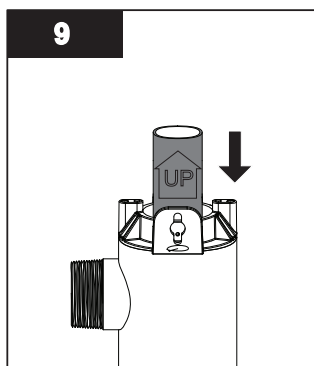


- Clean the sleeve with a cloth soaked in CLR, vinegar or some other mild acid and then rinse with water.

Note: If sleeve cannot be cleaned completely or it is scratched or cracked, then replace the sleeve.

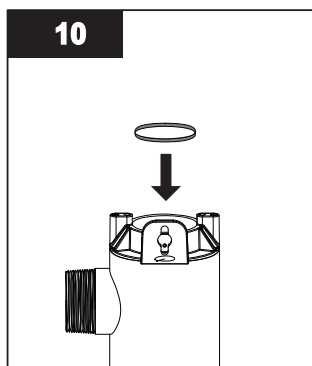


- Connect the sleeve bolt at the bottom of the sleeve assembly.

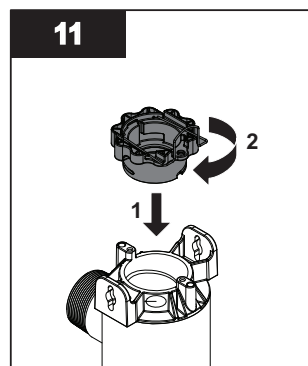


- Reinstall the sleeve with arrow pointing up.

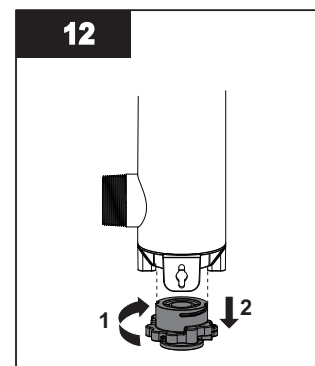
Note: DO NOT rotate sleeve and touch glass with bare hands.



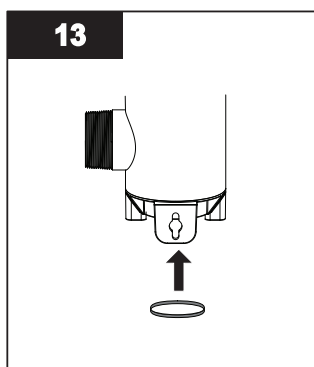
- Reinstall the new lubricated O-rings over the top end of the sleeve.



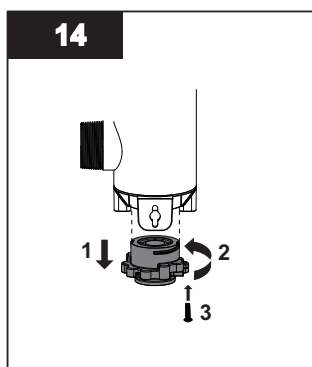
- Connect the sleeve bolt to the top of the sleeve assembly.



- Remove the sleeve bolt at the bottom of the sleeve assembly.



- Reinstall the O-ring at the bottom of the sleeve.

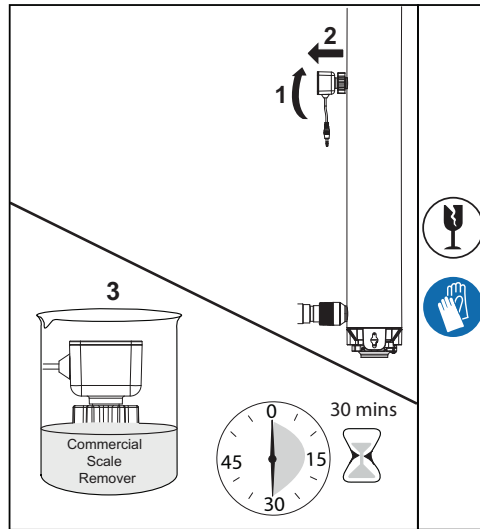


- Connect the sleeve bolt at the bottom.
- When service is complete, assemble the prerequisites in the reverse order of disassembly.

Notes: 1) Repeat steps 1 to 14 for the secondary chamber.

2) After replacing the UV lamp or sleeve perform the cleaning procedure, refer to [Section 3.2](#).

4.3 Sensor Cleaning



Remove the UV sensor from the unit. Submerge the end of sensor for 30 minutes in Commercial Scale Remover and wipe with clean cotton swab. Once UV sensor is clean reassemble back into chamber.

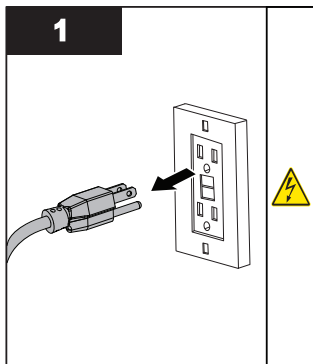
4.4 Flow Meter Maintenance

Inspect Flow Meter periodically to ensure that there is no fouling and the paddle wheel spins freely with no resistance. If paddle wheel does not spin freely or is loose the sensor should be returned for service and calibration. It is recommended that the Flow Meter be returned for calibration every two years to ensure accurate system operation.

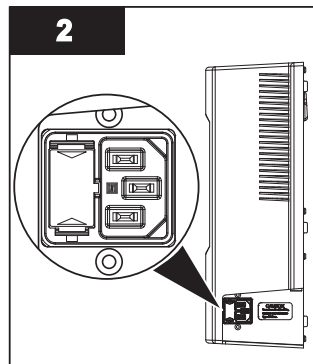
4.5 Fuse Replacement

Each controller comes equipped with two functioning 250V 3A fuses. To access the fuses, first unplug system and disconnect the power cord from the controller. Remove the fuse door by pushing in the tab on one side using a knife or other tool and gently prying outwards. Repeat on the other side.

Procedure:



- Disconnect the controller to the system.



- Replace the fuse.

Caution: Double pole/Neutral

Section 5 Operation

5.1 Control Panel

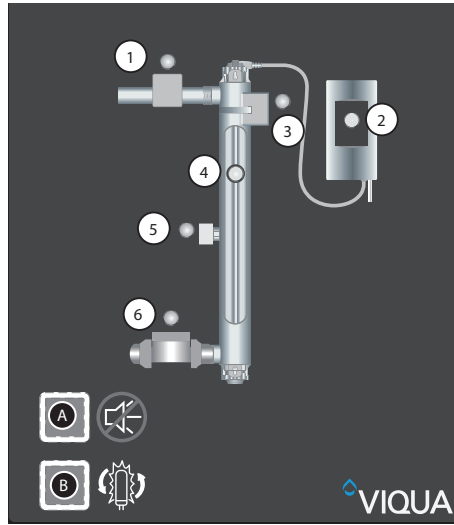


Figure 3 Control Panel

Buttons and Display				
Feature	Description	Function		
A	Audible alarm mute	Press to silence audible alarm. When the alarm is due to the lamp's age, the mute button will silence the audible alarm for 7 days; this may be repeated up to a maximum of 4 times. After that, the button will silence for only 24 hours. When the alarm is due to any other issue, the mute button will silence the audible alarm for 24 hours.		
B	Replacement lamp counter reset	After installing a new lamp, press and hold for five seconds to reset Lamp timer to 365.		
Indicator Lights				
LED	Green	Yellow	Flashing red	Solid red
1	Solenoid valve open (If equipped with solenoid)	Not applicable	Solenoid valve disconnected; reconnect. Solenoid coil damaged; replace coil (not entire solenoid).	Solenoid valve inactive (closed) due to failure of another component, in order to ensure safety of the water supply.
2	Operating normally Note: Indicator will be flashing when system is in power savings mode	Not applicable	Lamp connector not installed properly. Ensure lamp harness ground is inserted into chamber ground terminal. Controller failure, replace controller.	Controller inactive due to lamp failure.
3	Operating normally	Not applicable	Fan disconnected, reconnect. Fan turning slower than required; unplug system, clean blades using a Q-tip. Fan damaged, replace fan.	Not applicable.
4	Operating normally Note: During the lamp warm up, the indicator will flash	Warning: Lamp will require replacement shortly	Lamp disconnected; remove power, reconnect lamp and connect the controller. Lamp failure, replace lamp.	Lamp inactive due to controller failure.
5	UV dose is adequate and sensor is operating normally	UV dose is near the minimum required	Sensor disconnected; unplug system, reconnect sensor and plug-in system again. Sensor failure. UV dose is below minimum required, see Low UV Alarm section.	Sensor inactive due to lamp or controller failure.
6	Flow Meter operating normally	Not applicable	Flow meter sensor failure; service or replace sensor.	Low UV Alarm flow meter dose calculation not active.

5.2 COMMcenter

Navigation

There are four buttons on the COMMcenter. Their function corresponds to what is displayed on the screen next to each button, as illustrated below.



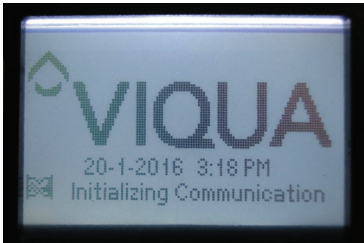
Figure 4 COMMcenter

1	Use this button to select "Settings".	3	Use this button to move up through options.
2	This button does not have an assigned function on this screen.	4	Use this button to move down through options.

Welcome Page and Home Page

The Welcome page appears during start-up. Left unattended, the COMMcenter will alternate between the Welcome page and the Home page. The latter displays the most critical information about the performance of the unit(s). To view the menu options from the Welcome page or the Home page, press any button.

Welcome page

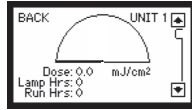


Home page overview
(2 units)



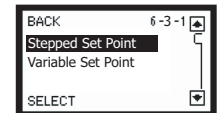
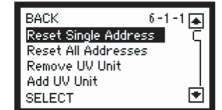
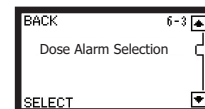
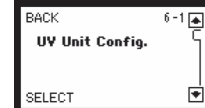
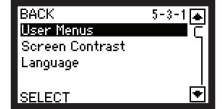
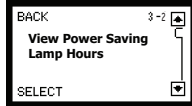
Figure 5 COMMcenter

Screens with a double outline are only visible when in Advanced Menus mode.

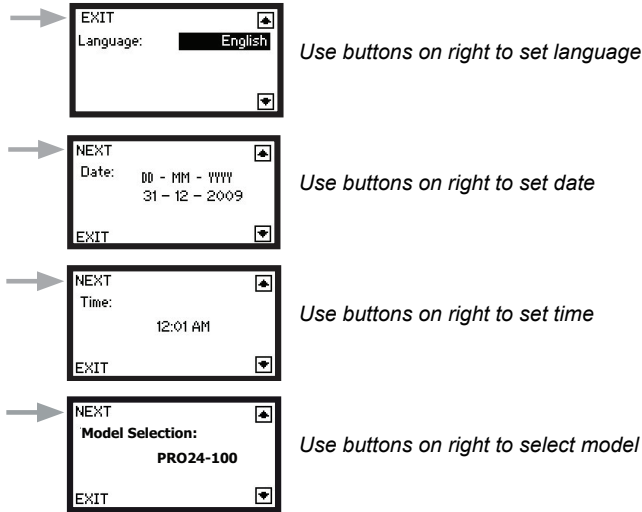


Tip:
Most screens are numbered.

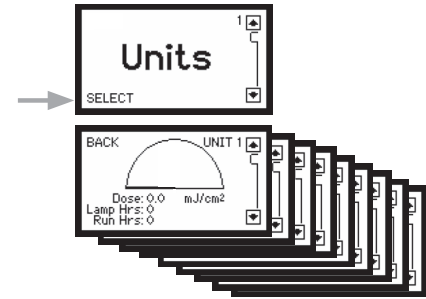
Tip:
Use the buttons on the right to navigate up and down the selections.



Initial Setup - First-time On Sequence



What dose is being delivered? How long has my lamp been running? How long has my system been running?



One screen for each unit. Navigate between units using buttons on the right.

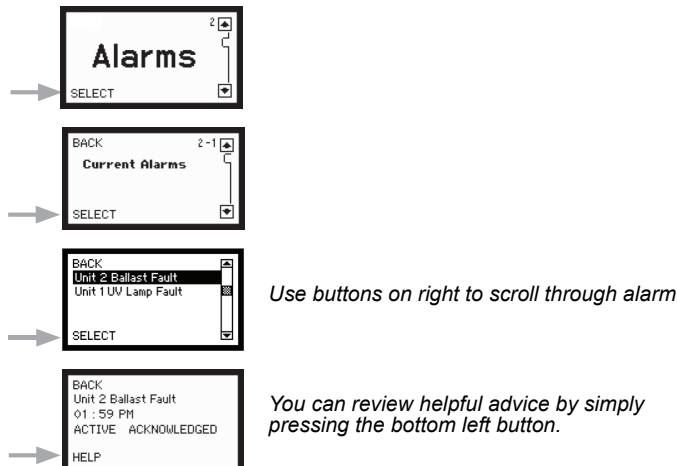
Note: The Home page for multiple systems is also useful as it displays the dose being delivered by each unit. It may be viewed by selecting the following:



What alarms are currently present?

Alarms must first be acknowledged by pressing any button on the COMMcenter or by pressing the Mute button on the power supply. This does not remove the alarm condition.

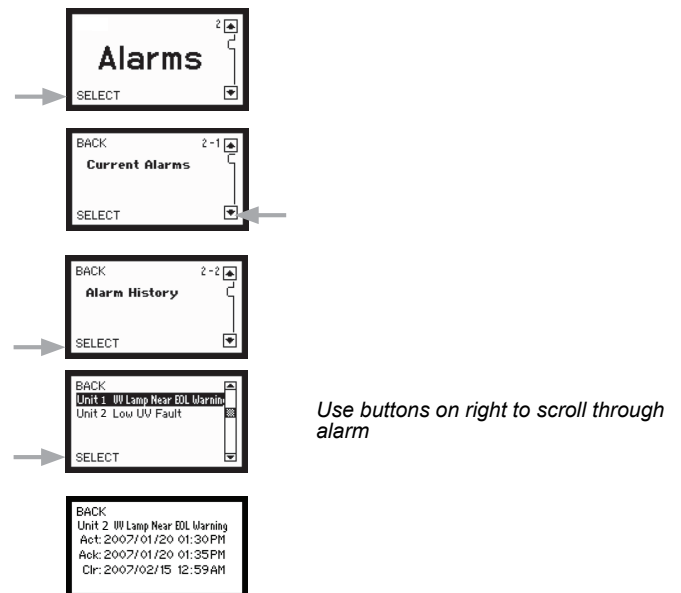
Note: The “Alarms” screens may only be viewed when in Advanced Menus mode.



What alarms have occurred?

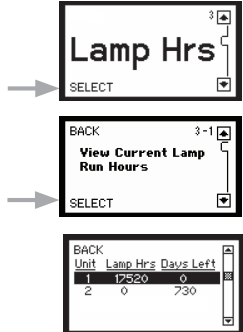
The COMMcenter stores the last 40 alarms that have occurred in memory. For greater data-logging capability, including the ability to data-log dose, insert a Micro-SD card.

Note: The “Alarms” screens may only be viewed when in Advanced Menus mode.

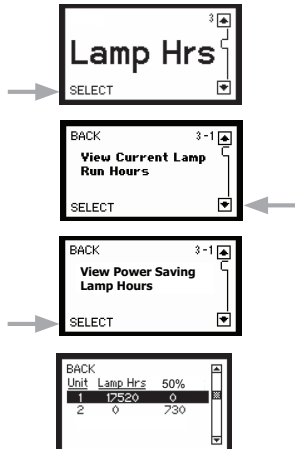


How many more days should my lamp last?

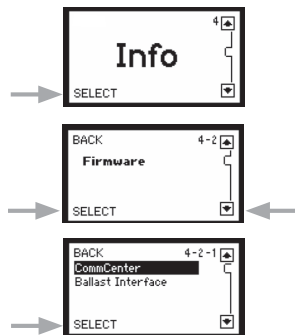
Note: The "Lamp Hours" screens may only be viewed when in Advanced Menus mode.



How do I check my power savings hours?



What firmware revision do I have?

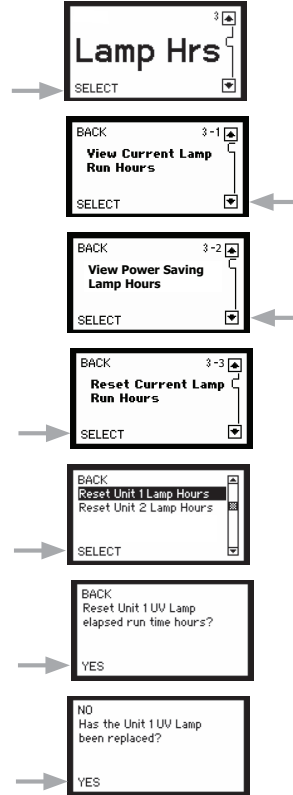


Use buttons on right to choose COMMcenter or ballast interface (controller).

How can I reset the lamp run hours after installing a new lamp?

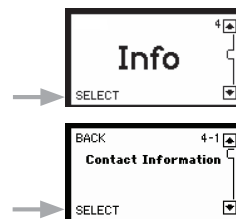
The lamp run hours can also be reset at the power supply. Refer to system Owner's Manual for details.

Note: the "Lamp Hours" screens may only be viewed when in Advanced Menus mode.



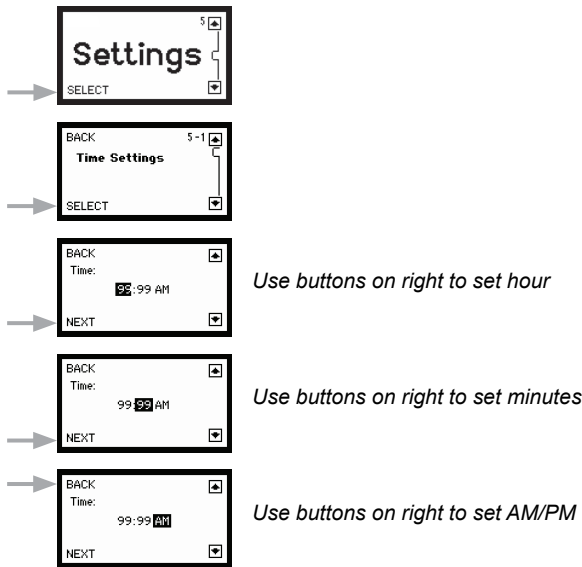
Use buttons on right to scroll through the unit.

Who do I contact for help?



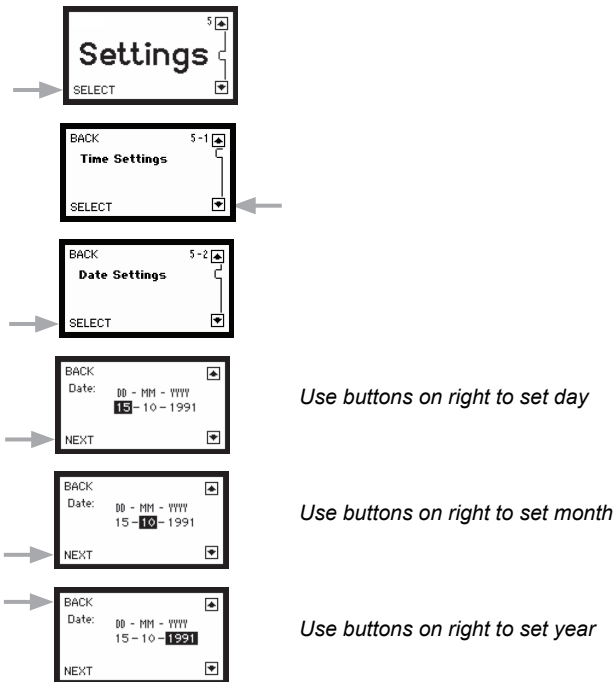
How do I set the time?

The COMMcenter is equipped with a battery that will allow it to track the time for the life of the product.

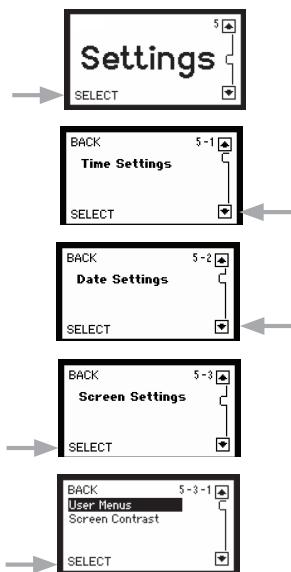


How do I set the date?

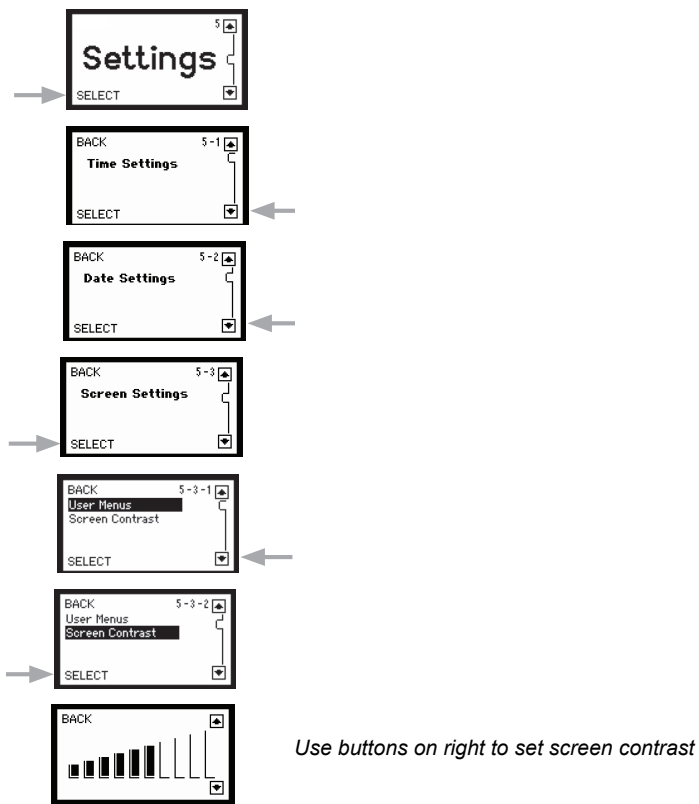
The COMMcenter is equipped with a battery that will allow it to track the date for the life of the product.



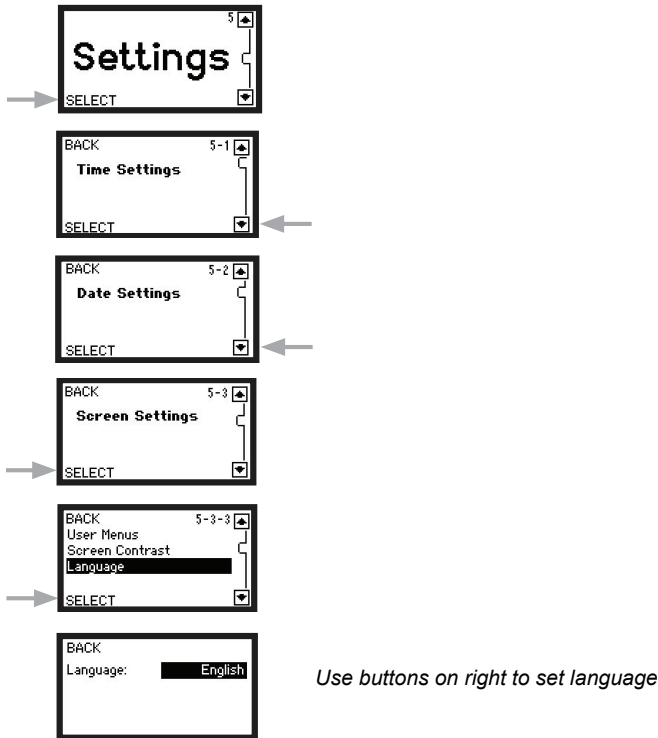
How do I change the menu mode?



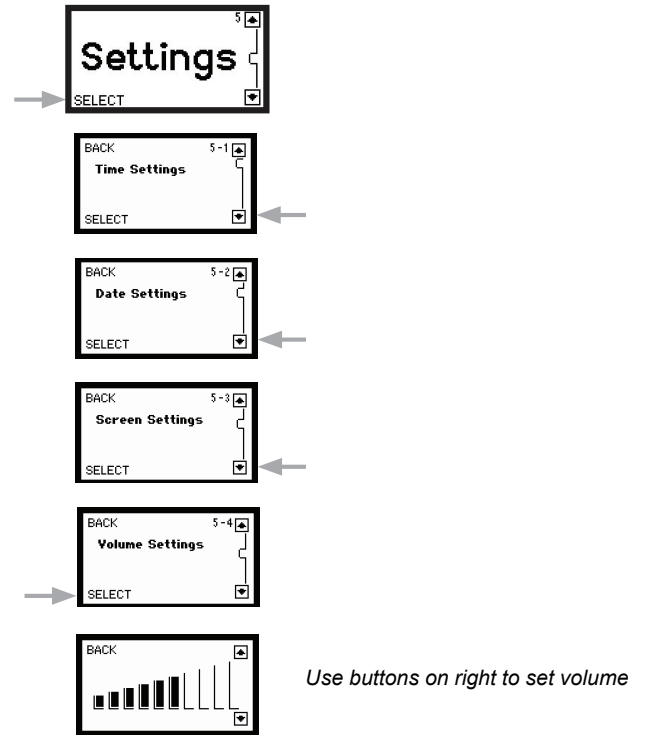
How do I adjust the screen contrast?



How do I change the language?



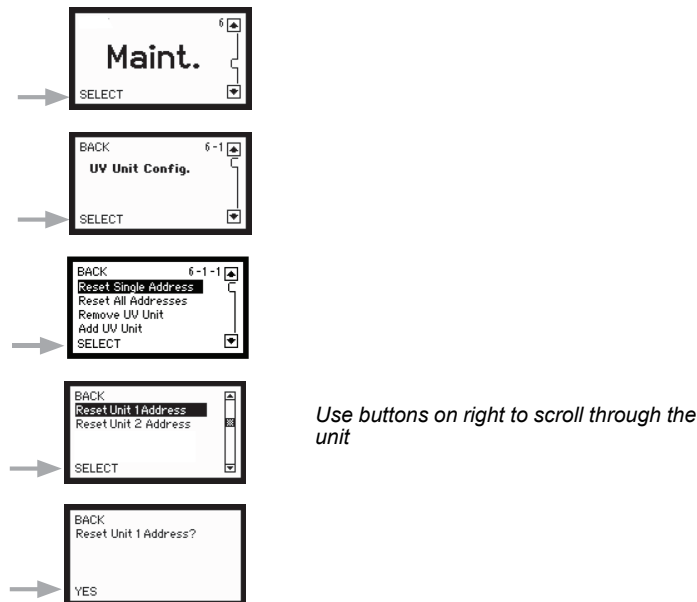
How do I adjust the volume of the audible alarm?



How do I reset the address for one unit?

This procedure resets the address for one unit to "zero", and the COMMcenter will no longer track this unit. Use this when permanently removing a unit. This way, if it is used again in another location, it will not have an assigned address. A second unit will need to be added again for the Adenovirus (PRO24-186) software to work correctly.

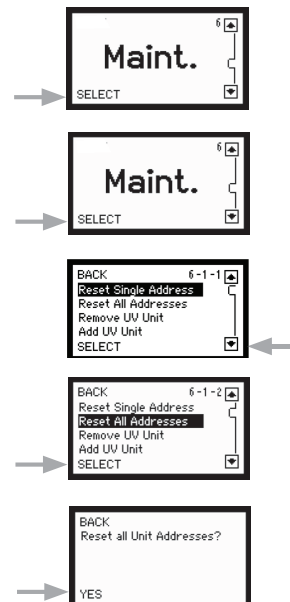
Note: The "Maintenance" screens may only be viewed when in Advanced Menus mode.



How do I reset all addresses?

This procedure resets the addresses of all units to "zero". Use this only after consulting with VIQUA Technical Services at 1-800-265-7246.

Note: The "Maintenance" screens may only be viewed when in Advanced Menus mode.

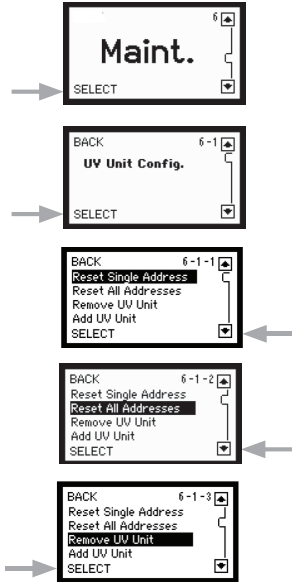


Operation

How do I remove a unit?

When this procedure is followed, the unit that is removed is no longer tracked by the COMMcenter. Use this procedure when removing a unit from service. This avoids lost-communications alarms. A second unit will need to be added for the Adenovirus software to work correctly.

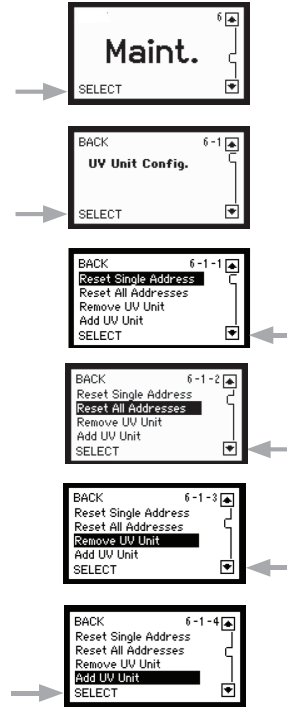
Note: The “Maintenance” screens may only be viewed when in Advanced Menus mode.



How do I re-install a unit?

Use this procedure when a unit that was previously removed from service (ex: back-up system) needs to be returned to service. You must know the address of the system being returned to service.

Note: The “Maintenance” screens may only be viewed when in Advanced Menus mode.



What if I am replacing the COMMcenter?

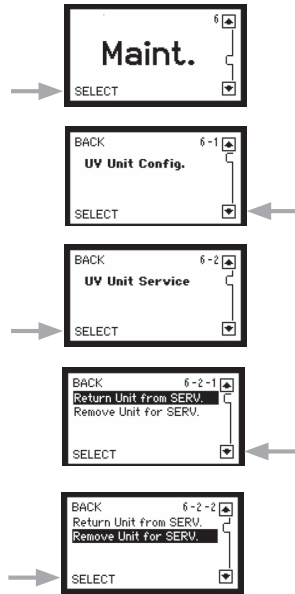
First, it is important to reset the address on the primary unit using the original COMMcenter. This can be done by following the procedure to permanently remove a unit ([page 23](#)). The new COMMcenter should then automatically detect the primary unit. If additional units were connected to the original COMMcenter, they can be added using the procedure for connecting multiple units. In this case however, choose “No” when asked if units are being added to increase the number of additional units, and select “Yes” when asked if units have already been assigned a designated address. If the unit was not removed from service properly, it may be necessary to reset the unit before it can connect to the new COMMcenter (Refer to [How do I reset the ballast unit?](#)).

How do I reset the COMMcenter?

To reset a COMMcenter, hold down any two buttons diagonally opposite each other while connecting it to a unit. This will return the COMMcenter to its factory default settings.

How do I turn off a unit for servicing?

This procedure provides a two hour window during which the COMMcenter no longer tracks the specified unit. Use this procedure when a unit must undergo service so as to avoid alarms.



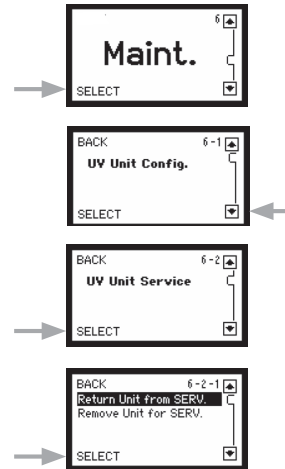
How do I reset the ballast unit?

To reset the ballast unit, hold down both buttons on the front of the unit while connecting the power cord. This will reset the address and lamp life counter within the unit.

WARNING: Resetting the ballast unit will erase all information regarding lamp life and reset the lamp life counter. If you wish to reset the lamp hours, do so through the COMMcenter.

How do I turn a unit on after servicing?

This procedure triggers the COMMcenter to resume tracking the unit specified. Note that if this procedure is not followed the COMMcenter will try to resume tracking of the given unit automatically, two hours after it was first turned off for servicing.



Section 6 Alarms and Troubleshooting

6.1 Troubleshooting

Symptom	Possible Cause	Possible Solution
No power	GFCI and/or breaker tripped	Reset GFCI and/or breaker
	Controller fuse has blown	Replace controller fuse - see Fuse Replacement section (Refer Section 4.5).
	Transient voltage surge suppressor (TVSS) damaged	Replace TVSS
	Controller damaged	Replace controller and use a TVSS
GFCI or breaker repeatedly trips	Connection between lamp and lamp plug is wet	Clean and dry lamp pins and lamp plug, check unit for leaks or condensation
	Short-circuit in the electrical assembly	Replace controller
Leak at inlet or outlet	Threaded pipe fittings are leaking	Clean threads, reseal with Teflon tape and retighten
Leak detected from area of UV chamber	Condensation of moist air on cold chamber (slow accumulation)	Control humidity or relocate unit
	O-ring damaged, deteriorated or incorrectly installed	Inspect and replace if deteriorated
	Lamp/sleeve assembly not properly installed (too tight or not tight enough)	Ensure nut is turned completely
System is operating but water tests reveal bacterial contamination	Equipment downstream of UV system is acting as a breeding ground for pathogens	Ensure UV is the last piece of treatment equipment
	Pathogens are residing in the distribution lines post-UV	Ensure all distribution lines have been cleaned with chlorine. Refer to Section 3.2 .
	Recontamination from pipe dead-ends	Remove any pipe dead-ends and flush with chlorine. Refer to Section 3.2 .

6.2 Alarms

Alarm condition (on either one or both units)	Unit 1	Unit 2 (Only for PRO24-186 systems)	COMMcenter	Solenoid Valve	Comments
UV Lamp Ballast (Controller) Fault	<ul style="list-style-type: none"> UV lamp ballast (controller) LED flashing red (only Unit in alarm) UV lamp LED solid red (only Unit in alarm) UV sensor LED solid red (only Unit in alarm) Audible beeping alarm 		<ul style="list-style-type: none"> Flashes warning to indicate which component and unit in alarm If alarm acknowledged by user, alarm condition stored in the Alarms menu Audible beeping alarm 	CLOSED	UV lamp connector may not be installed properly. Ensure lamp harness ground is inserted into chamber ground terminal.
UV Lamp Ignition or Run Fault	<ul style="list-style-type: none"> UV lamp ballast (controller) LED solid red (only Unit in alarm) UV lamp LED flashing red (only Unit in alarm) UV sensor LED solid red (only Unit in alarm) Audible beeping alarm 		<ul style="list-style-type: none"> Flashes warning to indicate which component and unit in alarm If alarm acknowledged by user, alarm condition stored in the Alarms menu Audible beeping alarm 	CLOSED	<ul style="list-style-type: none"> UV lamp disconnected; remove power, reconnect lamp and connect the controller. Lamp failure, replace lamp.
UV Lamp near EOL	<ul style="list-style-type: none"> UV lamp LED yellow (only Unit in alarm) Audible beeping alarm 		<ul style="list-style-type: none"> Flashes warning to indicate which component and unit in alarm If alarm acknowledged by user, alarm condition stored in the Alarms menu Audible beeping alarm 	OPEN	UV lamp will require replacement shortly.
UV Lamp at or exceeded EOL	<ul style="list-style-type: none"> UV lamp LED flashing red (only Unit in alarm) Audible beeping alarm 		<ul style="list-style-type: none"> Flashes warning to indicate which component and unit in alarm If alarm acknowledged by user, alarm condition stored in the Alarms menu Audible beeping alarm 	CLOSED	UV lamp requires replacement.
Low UV Intensity Warning	<ul style="list-style-type: none"> UV sensor LED yellow (only Unit in warning) 		<ul style="list-style-type: none"> Normal operation 	OPEN	UV dose near the minimum required.
Low UV Intensity Fault Service Required	<ul style="list-style-type: none"> UV sensor LED flashing red and Flow Meter LED solid red. Audible beeping alarm 	<ul style="list-style-type: none"> UV sensor LED flashing red and Flow Meter LED solid red. Audible beeping alarm 	<ul style="list-style-type: none"> Flashes warning to indicate which component and unit in alarm If alarm acknowledged by user, alarm condition stored in the Alarms menu Audible beeping alarm 	CLOSED	Refer to [Low UV alarm] section. Note: If the sensor is unplugged, the system must be restarted.
Component (solenoid, CoolTouch fan, UV sensor, flow meter) Fault	<ul style="list-style-type: none"> Corresponding component LED flashing red Audible beeping alarm 	<ul style="list-style-type: none"> Corresponding component LED flashing red Audible beeping alarm 	<ul style="list-style-type: none"> Flashes warning to indicate which component and unit in alarm If alarm acknowledged by user, alarm condition stored in the Alarms menu Audible beeping alarm 	CLOSED for solenoid or UV sensor fault, otherwise OPEN	<p>Ensure component is properly connected. If fault remains, the component is damaged and requires replacement.</p> <p>Notes: 1) If solenoid LED is flashing the solenoid coil is damaged; replace coil (not entire solenoid). 2) If fan LED is flashing, the fan may be turning slower than required; unplug system, clean blades using a Q-tip. 3) If the sensor is unplugged, the system must be restarted.</p>
Flow meter Fault (conflicting paddle wheel and detect arm reading)	<ul style="list-style-type: none"> Flow meter LED flashing red 	<ul style="list-style-type: none"> Normal operation 	<ul style="list-style-type: none"> Indicates flow meter alarm Audible beeping alarm 	OPEN	Paddle wheel and/or detect arm may be clogged.

6.3 LOW UV ALARMS

Use the following flow chart to troubleshoot a low dose alarm for the primary, secondary or both units.

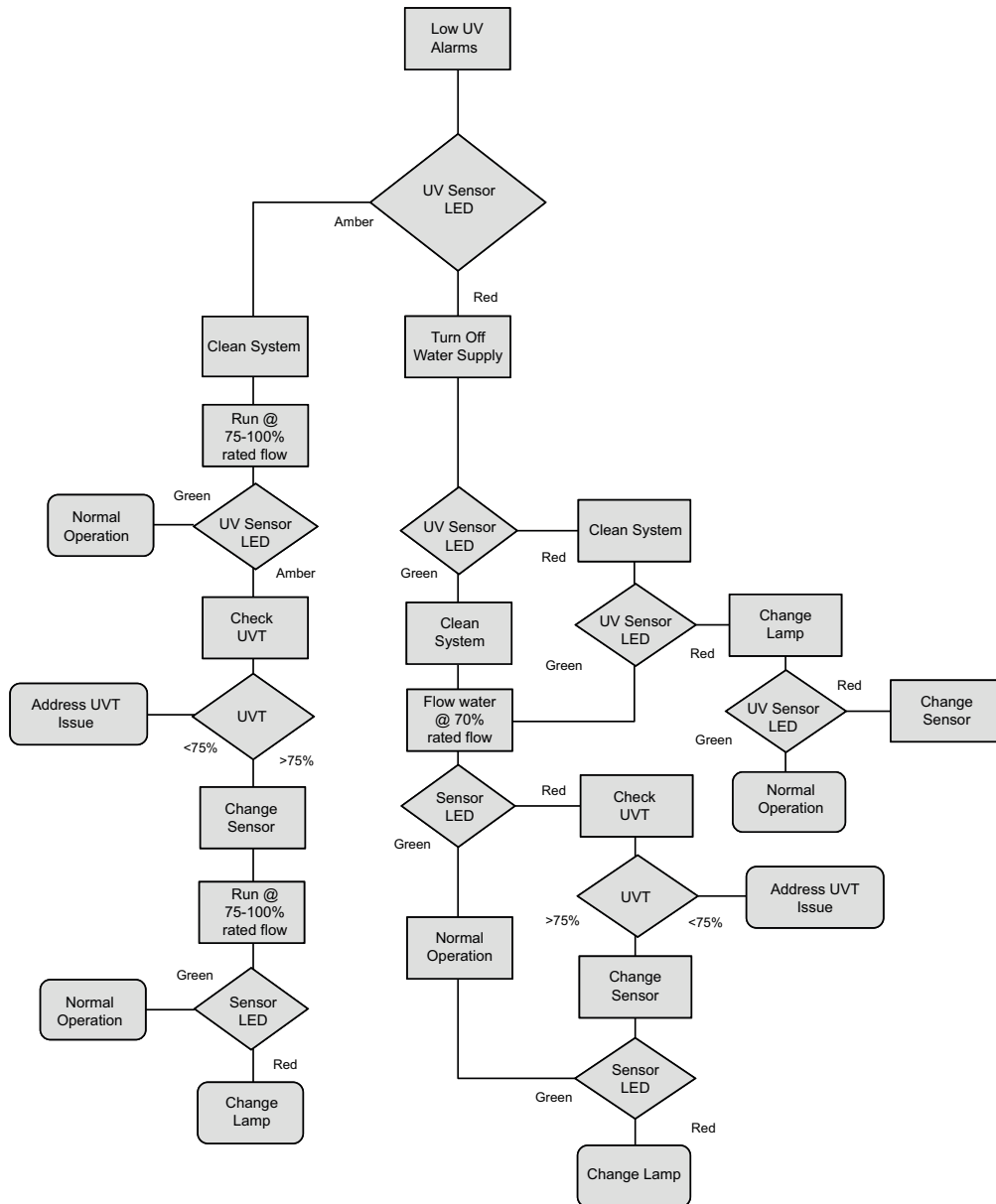


Figure 6 Low UV Alarms

1. In some cases, short-term flows of low ultraviolet transmittance (UVT) water can be created following and during the regeneration cycle of a water softener, resulting in a sensor alarm. Flushing the UV system alleviates this condition until the softener goes through another regeneration cycle. In the longer term, the softener's settings must be modified. To flush the UV system, turn UV system off, unplug the UV sensor (on the primary unit only for PRO24-186) then reapply power to the system. Wait approximately 5 minutes for the system to warm up. After the 5 min warm up period, the solenoid should turn on allowing water to flow. Open a tap downstream and let water run for two (2) minutes. Clean the water lines following the procedures outlined under "Cleaning The Water Lines" in the Installation section.

Note: If units go into alarm, silence them by pressing the Mute button.

2. Refer to [Section 4.2](#) for cleaning instructions.
3. Contact your water treatment dealer to inquire about testing the UVT of your water.

Section 7 Additional COMMcenter Operations

7.1 Data Logging

7.1.1 Using a Micro-SD Card

The COMMcenter has the ability to store data on the performance of your system(s) to a Micro-SD card, refer to [Figure 7](#). Micro-SD cards are available at Viqua or various Viqua Dealers.

Information is recorded every minute and a 512MB card should store 18 years worth of information.

To use this data-logging feature, simply insert a Micro-SD card into the slot on the left side of the COMMcenter.



Figure 7 Micro-SD card

7.1.1.1 Extract Micro-SD Card

Procedure:

1. Push the card into the COMMcenter.
2. This will cause the card to spring out slightly for removal.



Figure 8 Extracting Micro-SD card

7.1.1.2 Download Information Stored on Micro-SD Card

Procedure:

1. Insert the card into a card reader that is attached to a computer.
Note: Card readers are available from various retailers.
2. Use the computer's file management application to view the contents of the card.
3. A folder with name "dd_mm_yy" format contains the data-log files, with CSV extension.
4. These files may be opened in Microsoft Excel for easy viewing of the data.
5. You may wish to save the file to the computer's hard drive.
6. To re-use the Micro-SD Card, re-insert the card into the COMMcenter.

7.1.1.3 When Data-logging from Multiple Units

When using a standard Ethernet (RJ45) cable to connect the COMMcenter to the first controller, it is important to note that power is provided to the COMMcenter through this cable. Therefore, if power to this unit is interrupted the COMMcenter loses power and data-logging is temporarily stopped. This may not be desirable in situations where multiple units are installed. To avoid this situation, it is recommended that you reconnect and reconfigure the COMMcenter using another unit.

7.2 COMMcenter programming

7.2.1 SD Card Firmware Updating

COMMcenter firmware updates can be easily done via the SD Card. Power off the COMMcenter and remove SD card. Load the new firmware version onto the SD card via a computer device. Reinsert the SD card back into the COMMcenter. While holding down the top right button power up the COMMcenter until the screen displays Updating Firmware. Release the button and wait until the COMMcenter reboots.

7.3 Dry contact

7.3.1 Description

The COMMcenter has a Dry Contact output connector that can be used to signal a remote device such as a remote alarm of auto dialer when a major alarm occurs with the UV system.

7.3.2 Alarm Descriptions

The Dry Contact output will inform you of the following major Alarms

- Lamp Fault
- Ballast Fault
- UV Sensor Fault
- Low UV Fault

7.3.3 Connections

Connection to the Dry Contact output connector is done via the supplied Dry Contact Cable assembly PN 260201-R. Wiring connections are as follows:

- Normally Open (N.O.) - RED Wire
- Normally Closed (N.C.) - GREEN Wire
- Common (COM) - BLACK Wire


7.3.4 Connection Logic Chart

The following is the logic chart for the Dry Contact relay.

Wire	Output Terminal	UV System Running Normally (No Major Alarms)	UV System is in one of the Major Alarms or there is no power to the UV system
RED	N.O. (Normally Open Contact)	The Electrical path between these contacts are closed	The Electrical path between these contacts are open
BLACK	COM. (Common)		
	COM. (Common)	The Electrical path between these contacts are open	The Electrical path between these contacts are closed
GREEN	N.C. (Normally Closed Contact)		

Specifications

Section 8 Specifications

Operating Parameters		PRO24-186/PRO24-100
Maximum operating pressure		125 PSI (861 kPa)
Minimum operating pressure		15 PSI (103 kPa)
Maximum ambient air temperature		104 °F (40 °C)
Minimum ambient air temperature		32 °F (0 °C)
Maximum humidity		100%
Maximum hardness		120 ppm (7 grains per gallon)
Maximum iron		0.3 ppm
Minimum UVT		75%
Installation		Vertical ONLY
Chamber material		316L SST
Rated service life of lamp		up to 2 years
Rated flow for USEPA UVDGM 2006 protocol¹		
PRO24-186	PRO24-100	
Rated flow dose of 186 mJ/cm ² @ 95% UVT	Rated flow dose of 100 mJ/cm ² @ 95% UVT	24 GPM (91lpm) (5.5m ³ /hr)
Rated flow dose of 186 mJ/cm ² @ 90% UVT	Rated flow dose of 100 mJ/cm ² @ 90% UVT	21 GPM (79.5lpm) (4.8m ³ /hr)
Rated flow dose of 186 mJ/cm ² @ 82% UVT	Rated flow dose of 100 mJ/cm ² @ 82% UVT	15 GPM (56.8lpm) (3.4m ³ /hr)
Rated flow dose of 186 mJ/cm ² @ 75% UVT	Rated flow dose of 100 mJ/cm ² @ 75% UVT	9.8 GPM (37lpm) (2.2m ³ /hr)
Electrical		
Voltage		100V-240 V / 50Hz/60Hz
Max. current		2.5 A per unit
Max. power consumption		460 Watts (PRO24-186) 230 Watts (PRO24-100)
Lamp power consumption		400 Watts (PRO24-186) 200 Watts (PRO24-100)
Port Size		
Inlet and outlet		Combo 1¼" NPT, 1" FNPT
Features		
UV Sensor		Yes
CoolTouch fan		Yes
Dynamic flow restrictor		No
Communications ports (two, RJ45)		Yes
COMMcenter control package		Yes
Solenoid valve		Optional
Flow Meter Sensor		Yes
Controls		
Audible alarm mute button		Yes
New lamp button		Yes
Lamp age indicator		Yes
Lamp operation indicator		Yes
Controller operation indicator		Yes
Solenoid operation indicator		Yes
Fan operation indicator		Yes
Sensor reading indicator		Yes
Regulatory Certifications		
USEPA UVDGM 2006		Yes
Other Certifications		 

¹Flow rates based on End of Lamp Life; 20°C

²Units ending in */NOM are Certified to the Mexican NOM standard

Section 9 Manufacturer's Warranty

Our Commitment

VIQUA is committed to ensuring your experience with our products and organization exceeds your expectations. We have manufactured your UV system to the highest quality standards and value you as our customer. Should you need any support, or have questions about your system, please contact our Technical Support team at 1.800.265.7246 or technicalsupport@viqua.com and we will be happy to assist you. We sincerely hope you enjoy the benefits of clean, safe drinking water after the installation of your VIQUA system.

How to Make a Warranty Claim

Note: *To maximise the performance and reliability of your VIQUA product, the system must be properly sized, installed and maintained. Guidance on the necessary water quality parameters and maintenance requirements can be found in your Owner's Manual.*

In the event that repair or replacement of parts covered by this warranty are required, the process will be handled by your dealer. If you are unsure whether an equipment problem or failure is covered by warranty, contact our Technical Support team at 1.800.265.7246 or e-mail technicalsupport@viqua.com. Our fully trained technicians will help you troubleshoot the problem and identify a solution. Please have available the model number (system type), the date of purchase, the name of the dealer from whom you purchased your VIQUA product ("the source dealer"), as well as a description of the problem you are experiencing. To establish proof of purchase when making a warranty claim, you will either need your original invoice, or have previously completed and returned your product registration card via mail or online.

Specific Warranty Coverage

Warranty coverage is specific to the VIQUA range of products. Warranty coverage is subject to the conditions and limitations outlined under "[General Conditions and Limitations](#)".

Ten-Year Limited Warranty for VIQUA UV Chamber

VIQUA warrants the UV chamber on the VIQUA product to be free from defects in material and workmanship for a period of ten (10) years from the date of purchase. During this time, VIQUA will repair or replace, at its option, any defective VIQUA UV chamber. Please return the defective part to your dealer who will process your claim.

Five-Year Limited Warranty for Electrical and Hardware Components

VIQUA warrants the electrical (controller) and hardware components to be free from defects in material and workmanship for a period of five (5) years from the date of purchase. During this time, VIQUA will repair or replace, at its option, any defective parts covered by the warranty. Please return the defective part to your dealer who will process your claim.

One-Year Limited Warranty for UV lamps, Sleeves, UV Sensors and COMMcenter

VIQUA warrants UV lamps, sleeves, and UV Sensors to be free from defects in material and workmanship for a period of one (1) year from the date of purchase. During this time, VIQUA will repair or replace, at its option, any defective parts covered by the warranty. Your dealer will process your claim and advise whether the defective item needs to be returned for failure analysis.

Note: *Use only genuine VIQUA replacement lamps and sleeves in your system. Failure to do so may seriously compromise performance and affect warranty coverage.*

General Conditions and Limitations

None of the above warranties cover damage caused by improper use or maintenance, accidents, acts of God or minor scratches or imperfections that do not materially impair the operation of the product. The warranties also do not cover products that are not installed as outlined in the applicable Owner's Manual.

Parts repaired or replaced under these warranties will be covered under warranty up to the end of the warranty period applicable to the original part.

The above warranties do not include the cost of shipping and handling of returned items. The limited warranties described above are the only warranties applicable to the VIQUA range of products. These limited warranties outline the exclusive remedy for all claims based on a failure of or defect in any of these products, whether the claim is based on contract, tort (including negligence), strict liability or otherwise. These warranties are in lieu of all other warranties whether written, oral, implied or statutory. Without limitation, no warranty of merchantability or of fitness for a particular purpose shall apply to any of these products.

VIQUA does not assume any liability for personal injury or property damage caused by the use or misuse of any of the above products. VIQUA shall not in any event be liable for special, incidental, indirect or consequential damages. VIQUA's liability shall, in all instances, be limited to repair or replacement of the defective product or part and this liability will terminate upon expiration of the applicable warranty period.



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