

INSTALLATION AND MAINTENANCE MANUAL FOR

ADVANCE UV SYSTEMS PTY LTD

ADV C SERIES WATER DISINFECTION UNITS

COVERING MODELS ADV C50 – ADV C3800



GENERAL SAFETY INSTRUCTIONS

- Use the UV system only for the intended purpose as described in this manual.
- Correctly install your ADVANCE C series UV disinfection system as per instructions in this manual.
- Do not use an ADVANCE UV disinfection system with damaged electrical cable/plug/switch.
- Make sure that the ADVANCE UV system is unplugged when it is not being used, before installation, or removing any parts, and before servicing the unit.
- Depressurize and drain the ADVANCE UV system before maintenance.
- Do not operate the UV lamp outside of the UV disinfection reactor as UV radiation can cause serious damage to eyes and skin.

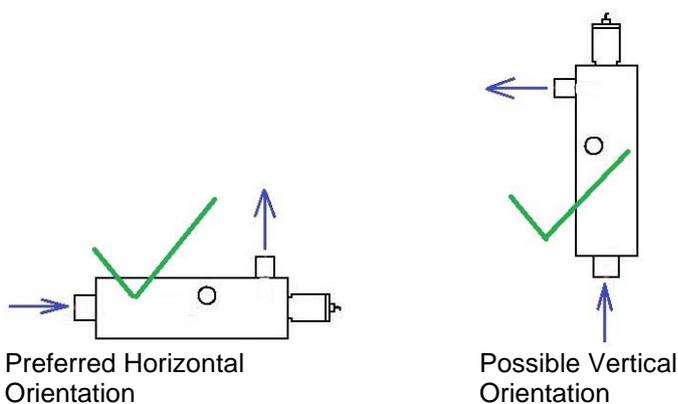
INSTALLATION AND PLANNING

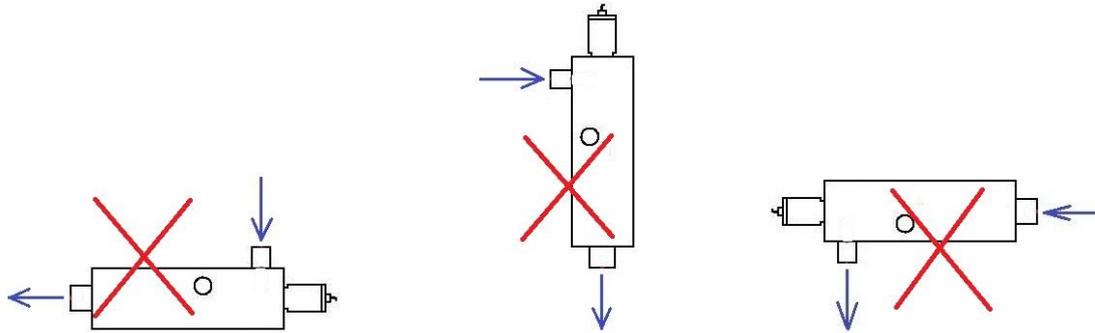
Please check the following conditions will be met before installation.

- Maximum operating pressure must not exceed 10 bar (1000 kPa).
- Maximum ambient temperature should not exceed 40°C.
- Maximum water temperature should not exceed 65°C for units with amalgam lamps (seek advice from your supplier).
- The UV reactor should be installed so that it remains full of water at all times while the UV lamp is operating.
- If there are going to be extended periods with no flow then, there should be over-temperature mitigation installed to prevent overheating (seek advice from your supplier).
- Ensure there is sufficient space available to remove the UV lamp and quartz thimble during servicing.
- If there is a risk of water hammer then precautions need to be taken to prevent water hammer from damaging the quartz thimble, such as installing a water hammer arrestor.

Installing the Stainless Steel Reactor:

- The reactor vessel or chamber, comes with brackets for mounting the unit on a wall or frame.
- The reactor should be installed horizontally with the outlet pointing up. This orientation will ensure there will be no entrapped air in the chamber while there is flow. Other orientations are possible but steps must be taken to ensure there is no entrapped air.
- If there is a risk of water hammer then precautions need to be taken to prevent water hammer from damaging the quartz thimble.
- The weight of the chamber when filled with water must be taken into consideration when mounting the unit.
- The stainless steel chamber and any metal pipe-work must be properly earthed to ensure safe operation and eliminate the risk of electrolysis and corrosion.

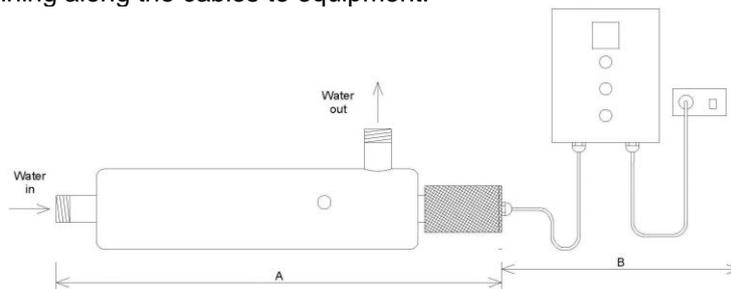




Incorrect Flow Direction.

Installing the Power Supply Box:

- The power supply box should be mounted above the reactor where it is protected from the weather and direct sunlight. Some of the power boxes are not suitable for outside installation.
- The standard lamp lead length is 2m. Please contact your supplier if you need longer lamp lead.
- The weight of the chamber when filled with water must be taken into consideration when mounting the unit.
- The stainless steel chamber and any metal pipe-work must be properly earthed to ensure safe operation and eliminate the risk of electrolysis and corrosion.
- The power cable and lamp cable should be installed so they have 'drip loops' to minimize risk of water running along the cables to equipment.



REACTOR ASSEMBLY

Quartz Thimble Installation:

Care should be taken when handling the quartz thimble. It breaks in the same way glass does and will have dangerous sharp edges if broken. It must be cleaned with methylated spirits to remove any finger marks or grease before installation.

- Unscrew the sealing nut from the end of the chamber and remove the O ring as well.



- Lubricate and place the O ring in the O ring seat inside the sealing nut.



- Insert the open end of the quartz thimble into the sealing nut, sliding the quartz past the O ring so the quartz rests against its stop inside the sealing nut.



- With the quartz still inserted into the sealing nut, take the quartz thimble and insert the domed end into the chamber through the sealing nipple.



- Push the quartz all the way into the chamber with the sealing nut and the quartz will centre itself in the spring at the end of the chamber.
- Push the quartz into the chamber until the thread of the sealing nut engages with the nipple on the chamber and then screw the sealing nut in place. You will feel when the sealing nut starts to compress the O ring seal. Approximately $\frac{1}{2}$ a turn after the sealing nut starts to compress the O ring seal should be sufficient. Firm hand tightness is all that is required.



- The UV lamp can now be installed in the reactor.

UV Lamp Installation:

Care should be taken when handling the UV lamp. It breaks in the same way glass does and will have dangerous sharp edges if broken. The UV lamp also contains mercury which will need to be collected and disposed of in accordance with regulatory requirements.

- Remove the UV lamp from its protective wrapping and wipe it down with methylated spirits to remove any grease or fingerprints, and dry with a clean cloth or tissue.
- Only handle the clean lamp with clean cloth gloves or tissues to prevent any markings on the lamp.
- Insert the UV lamp into the quartz thimble in the reactor through the sealing nut, with the lamp pins exposed at the open end of the chamber.



- Keeping a firm hold of the lamp, push the connector onto the lamp so there is no gap between the connector and the lamp.



- Push the lamp all the way into the chamber as far as it will go, and then secure the end cap in place with the three screws provided.

The UV unit is now ready for operation. Slowly open the inlet valve to the UV unit, to allow water into the chamber. Be careful to open the valve slowly to prevent any hammering due to air in the line. You may then plug the unit into a power point and switch it on and allow the UV lamp to warm up for 3 minutes. Then carefully and slowly open the outlet valve to allow flow through the UV unit. The valves need to be opened slowly to prevent hammering due to any entrapped air.

SERVICING

Servicing should be carried out by a qualified and competent service technician.

The UV unit must be switched off electrically isolated as well as being hydraulically isolated and depressurized before servicing.

Servicing the UV Lamp:

- Ensure the unit has been switched off and isolated.
- The UV lamp may be very hot so allow 10 minutes for the lamp to cool down.
- Remove the three screws holding the end cap in place.
- Carefully remove the end cap by pulling on the lamp lead. The lamp will be attached to the lamp lead. Pull it out until the lamp end piece and the lamp connector are exposed.
- Disconnect the connector from the lamp. You may need a small screw driver to help lever them apart
- Completely remove the UV lamp from the reactor.
- Install new UV lamp as described in the 'REACTOR ASSEMBLY' section.

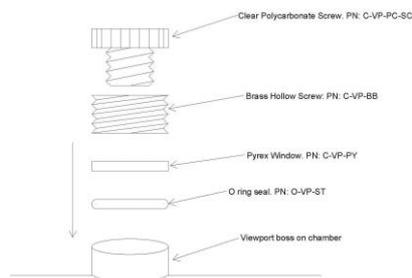
Servicing the Quartz Thimble:

- Remove the UV lamp as described in the section above- 'Servicing the UV Lamp'.
- Ensure the reactor is hydraulically isolated and depressurized. (Use the view port if necessary to depressurize the chamber)
- Unscrew the sealing nut from the chamber, taking care when reaching the end of the thread as the quartz will spring out when the threads become disengaged.
- Once the sealing nut is free from the chamber remove the quartz completely from the chamber and carefully remove the sealing nut from the end of the quartz thimble.
- Wipe down the quartz thimble to remove any deposits. You may use detergents and scouring pad if necessary.
- Reinstall the quartz thimble, with a new O ring, as described in the 'REACTOR ASSEMBLY' section.

Servicing the View Port:

From time to time the O ring seal for the view port may need to be changed.

- Ensure the UV unit is switched off and electrically isolated as well as being hydraulically isolated and depressurized.
- Unscrew the clear polycarbonate screw from the hollow brass bush.
- Unscrew the hollow brass bush from the chamber.
- Carefully remove the Pyrex window.
- Remove and replace the O ring seal.
- Reassemble view port.



SPARE PARTS

Model	UV lamp	Quartz Thimble	O ring
ADV C50	LL010A-S4	QD025025	O25-ST
ADV C100	LL020-S4	QD025025	O25-ST
ADV C200	LL030-S4	QD051525	O25-ST
ADV C250	LL046A-S4	QD051525	O25-S
ADV C300	LL040-S4	QD090025	O25-ST
ADV C400	LL040-S4	QD090025	O25-ST
ADV C400-C	LL040-S4	QD090028	O28-ST
ADV C500	LL079-S4	QD090025	O25-ST
ADV C600	LL040-S4	QD090028	O28-ST
ADV C700	LL080-S4	QD090028	O28-ST
ADV C800	LL080-S4	QD090028	O28-ST
ADV C900	LL105-S4	QD090025	O25-ST
ADV C1100	LL127-S4	QD090028	O28-ST
ADV C1200	LL127-S4	QD090028	O28-ST
ADV C1300	LL080-S4	QD090028	O28-ST
ADV C1500	LL170-S4	QD090028	O28-ST
ADV C1600	LL170-S4	QD090028	O28-ST
ADV C1700	LL180-S4	QD121028	O28-ST
ADV C1800	LL180-S4	QD121028	O28-ST
ADV C1900	LL235-S4	QD121028	O28-ST
ADV C2000	LL235-S4	QD121028	O28-ST
ADV C2100	LL127-S4	QD090028	O28-ST
ADV C2900	LL170-S4	QD090028	O28-ST
ADV C3500	LL180-S4	QD121028	O28-ST
ADV C3800	LL235-S4	QD121028	O28-ST

GUARANTEE

Reactor

The stainless steel reactor is guaranteed for two years for faults with material and workmanship, provided it is installed and maintained in accordance with these instructions. This warranty does not cover installations where salt water passes through the reactor.

Power Supply Box

The power supply box is guaranteed for one year for faults with material and workmanship, provided it is installed and maintained in accordance with these instructions.

UV Lamp

The UV lamp is guaranteed for one year, pro-rata, for faults with material and workmanship, provided it is installed and maintained in accordance with these instructions. Lamp warranty will be void if the unit is switched on and off more than four times in a 24 hour period.