



DAVEY

DAVEY

Aquashield® Centurion

Installation and Operating Instructions

Wall mounted models ASC50 & ASC70



DO NOT DISASSEMBLE ANY COMPONENTS UNTIL YOU HAVE FULLY READ THESE INSTRUCTIONS. Unit is supplied fully assembled.

Ultra violet radiation is harmful to skin and eyes.

DO NOT LOOK AT UV LAMP WHILE LAMP IS OPERATING.

Minimum operating pressure is 0kPa. Installation on a flooded suction is recommended. Installation under vacuum is not advised, any damage to persons or associated equipment will not be covered under this guarantee.

Maximum operating pressure for stainless steel UV chambers is 860kPa (125 psi). If this pressure can be exceeded or if operating close to this pressure fit a suitable pressure limiting valve in the supply to the UV chamber.

WARNING: The UV Chamber operates under pressure. Under no circumstances should the UV Chamber be disassembled unless the internal pressure of the unit has been relieved. Failure to observe this warning will expose persons to the possibility of personal injury and may result in damage to the UV system or other property.

This unit is designed to treat water at ambient temperatures (5°C to 45°C). Contact your dealer for details of UV systems suitable for hot water service.

The appliance is not intended for use by young children or infirm persons without supervision.

Young children should be supervised to ensure they do not play with the appliance.

We recommend wearing clean, lint-free gloves any time the internal quartz sleeve or lamp need to be handled.

If installing on Australian Municipal water sources, a dual check valve and back flow prevention device must be fitted prior to any filters or the UV chamber.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

If any electrical supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

Please pass these instructions on to the operator of this equipment.

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Introduction

Congratulations on your purchase of a high quality, Davey Aquashield Centurion Ultra Violet water treatment system. All components have been designed and manufactured to give trouble free, reliable operation.

Model Selection

Davey Aquashield Centurion units are selected according to the maximum water or peak flow requirement. As it is not possible to overdose on UV treatment, the unit can be oversized for the flow.

The system incorporates pre-filtration to ensure that particulate matter does not shield micro-organisms from the UV light. In this system water flows through a 20um filter, followed by a 1um filter for removal of sediments and cysts.

Aquashield Centurion 50W will effectively treat a water flowing at a maximum rate of 50 litres of water per minute.

Aquashield Centurion 70W will effectively treat a water flowing at a maximum rate of 70 litres of water per minute.

Your new Aquashield Centurion system incorporates a Steriflo, which includes a lamp failure system that enables you to be warned of a lamp failure by:-

1. A lamp failure LED.
2. An audible alarm.

In addition when the alarm “beeps” on and off, the lamp is due to be changed so that effective treatment is maintained.

Flashing of the red LED indicates that the lamp countdown timer is operating.

Recommendations for maintaining good health

UV sterilising systems are designed to deactivate bacteria by rearranging the bacterial DNA and removing the ability of the bacteria to reproduce.

UV treatment is most effective on clear, particle free water. Therefore we include 20um and 1um pre-filtration prior to the UV chamber. The filters should be checked, cleaned and replaced regularly.

As the bacteria in the chamber require sufficient exposure (contact time) with the lamp, water flow through the unit should not exceed the maximum flow specified. If this is a risk, a flow limiting valve could be added to the system. Please consult your plumber.

The UV system is only effective when the lamp has power. In the case of a power failure, water should not be used through the system.

Over time the UV lamp output will be reduced. We recommend replacing the UV lamp every 12 months so that your water is treated by high intensity UV.

The internal quartz sleeve needs to be cleaned regularly so that grime on the sleeve does not block the UV lamp. This should be done at least 4 times per year and more often if your water is prone to scaling.

Installation

Preparing your system

Before installing your new Aquashield Centurion, please read all instructions carefully as failures caused by incorrect installation or operation are not covered by the guarantee. Your Ultra Violet water treatment system is designed to handle clean water. The system should not be used for any other purpose without specific referral to Davey. The use of the system with flammable, corrosive and other materials of a hazardous nature is specifically excluded.

On removing your Aquashield Centurion system from its carton you should check all components to ensure all are present and have not been damaged in transportation.

Choosing a Site

To protect your Davey Aquashield Centurion from the weather, make sure the site is water proof, frost free and has adequate ventilation. Choose a site with a structurally appropriate mounting position on the wall. Allow a **chamber length space above the unit** for removal of the lamp and sleeve from the Steriflo during servicing and **100mm below the cartridges** for maintenance.

The unit can be mounted with water flow from left to right, or right to left as the plumbing requires. The Steriflo control box may need to be moved. Allow for drainage, to avoid damage to flooring etc. that over time may occur during maintenance or from leaking pipe joints or seals.

Electrical Power Surge Protection

An electrical power surge or spike can travel on the supply lines and cause serious damage to your electrical equipment. The Steriflo control box has a fuse to protect the circuit. The fuse is not a lightning arrestor and may not protect the Steriflo if lightning or a very powerful surge hits the unit.

If the installation is subject to electrical power surges or lightning we strongly recommend the use of suitable additional surge protection devices on all electrical equipment. **We recommend the use of an RCD or earth leakage circuit breaker** on the power supply to your unit.

Power Connection

Connect lead to power supply designated on control box label. Do not use long extension leads as they may cause substantial voltage drop and/or poor lamp performance. The stainless steel chamber is connected to earth as supplied and this connection must always be used during operation.

The control box has a female power socket that can be used to power a pump. In the event of a lamp failure, power to the pump will be shut off to ensure untreated water is not delivered.



Ensure flow rate of the pump does not exceed rated flow of the UV system or maximum rated current draw of 5.7A.



CAUTION: The supply cord is necessary for lamp changing. The three pin supply plug must remain accessible after installation. If installed to fixed wiring without the plug a two pole switch must be fitted and its ON and OFF positions shall be marked.

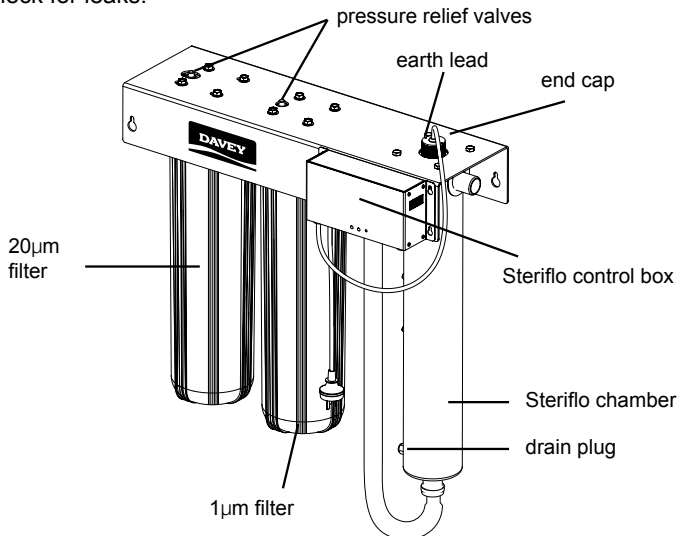
Mounting, Plumbing and Start-up

The unit has 25mm BSP plumbing connections.

The inward side has a 25mm female connector and requires male plumbing.

The outward side has a connector that requires either 25mm female plumbing OR 20mm male plumbing.

- Use the mounting template to mark the position of holes required for mounting. Fix screws to the wall that will allow the Aquashield Centurion to be mounted using the key-holes in the back of the unit. Ensure there is more than 100mm space below the filters and 700mm above the unit for maintenance. Water must flow through the filters before going through the Steriflo unit.
- Mount the Aquashield Centurion on the wall then tighten the screws to hold it firmly.
- Attach the yellow control box to the front of the unit in front of the Steriflo by hooking on to the 2 pre-mounted screws and then tighten them.
- Remove the 2 small screws in the top of the UV endcap.
- Install the Steriflo lamp. The lamp is shipped in a tube in the top of the box. Carefully unwrap the lamp and slide it into the pre-fitted quartz sleeve through the top of the endcap. Connect the lamp connection plugs and push them inside the tube above the lamp. Line up the top of the endcap and replace the 2 screws.
- Connect the yellow and green earth lead to one of the 4 chamber mounting screws. Remove the screw to hook it in place properly and re-fit the screw.
- Plumb the pipework into and out of the unit. Do not turn the water on yet.
- Turn on the power to the Steriflo and allow two minutes for the UV lamp to reach full intensity.
- Ensure the reset button is pressed and held for approx. 10 seconds. The unit should beep to indicate the lamp life timer has been reset. The timer will then count down for 12 months and beep alarm when the lamp needs to be replaced.
- After two minutes, allow water to flow through the unit filters and UV chamber by turning on a supply tap and a tap downstream.
- Check for leaks.



See warnings overleaf.



Never use PVC pipe directly connected to unit. PVC pipe and fittings can be used after 90° metal elbows are connected to the inlet and outlet of the chamber eg. brass fittings. Larger diameter pipe may be used to minimise resistance to flow, but maximum flow rates should not be exceeded, as correct water treatment cannot be assured at higher flows. If flows may exceed the design maximum, install a flow restriction device.

At no stage should the UV system be operating without water present inside the chamber. Damage to the system could result.

If the system is bypassed, the unit should be switched off to avoid over heating and alarming.

LED Indicators

The Steriflo control box has a red LED alarm indicator light mounted on its front panel, adjacent to the amber “power on” LED. This light will be illuminated whenever the Steriflo control box senses no lamp current. There is also an audible alarm in the event of lamp failure. The LED and/or alarm will only work when unit is connected to the correct electrical supply.

Flashing of the red LED indicates normal operation and the lamp countdown timer is operating.



Should the unit alarm, power to the pump will be interrupted ensuring safe water is always supplied. Manual overriding of this feature is available by briefly pressing the reset button once for emergency water supply.



If pump outlet is not required retain plastic guard supplied on pump outlet.

Alarms

1. Intermittent beeping indicates that the lamp requires changing and can be silenced for 24 hours by pressing the reset button to allow for a new lamp to be obtained. It is good practice to have a spare lamp on hand to ensure a quick changeover.
2. In the event of a system failure or bad connection, the alarm will continuously sound and the red LED will light up. Power to the pump connection (if used) will be disabled to ensure only treated water is delivered. For emergency water supply, the reset button can be pressed, but note that the water may be unsafe.

The alarm function or lamp can be checked as follows:

1. Switch off mains power to the lamp power supply and remove plug from outlet.
2. Disconnect the lamp.
3. Allow one minute delay to reset the lamp ballast.
4. Reconnect the existing or replacement lamp.
5. Reconnect the power.

Maintenance

Cleaning the quartz sleeve – 3 monthly

(or more often if used with hard water).

If dirt is allowed to build up on the quartz sleeve it will impair the UV output. The quartz sleeve should be removed after one month and inspected for deposits.

- Turn off water supply to the inlet of the Aquashield Centurion system.
- Disconnect power by unplugging the cordset from the power outlet.
- Depressurise the system and drain the UV chamber by removing the drain plug. Remember to put the plug back on when the chamber is empty.
- Unscrew the earth connection.
- Unscrew the 2 small screws holding the endcap on.
- This will expose the wiring for the lamp. Disconnect the lamp and remove it straight up. Only handle the lamp by the ceramic-coated ends. Place it on a clean surface where it is safe.
- Unscrew the endcap and lift it slightly to reveal the quartz sleeve. The endcap may be held on to the sleeve by the o-ring. Gently remove the endcap from the sleeve.
- Lift the quartz sleeve out of the chamber by pulling it straight up. Try to handle the quartz sleeve by holding it by the top 2cm. Try not to handle the quartz sleeve as fingerprints can lead to dirt or grease shadows and a loss of efficiency.
- Use a soft cloth to wipe the quartz sleeve with a solution of CLR (Calcium Lime and Rust remover) clean.
- Wipe the quartz sleeve with a damp cloth to remove CLR residue.
- Reinsert the sleeve to the chamber and refit the o-ring to the top of it. Place the pressure ring inside the endcap and hold with your index finger through the central hole. Screw the endcap in to place so that it is finger tight. Do not overtighten as it can damage the quartz sleeve.
- Reinsert the lamp and reconnect the wiring. Push the cords into the top of the quartz sleeve so that the 2 small screws can be inserted.
- Connect the earth wire.
- Refit the drain plug.
- Plug in the power and turn on. Allow the lamp to run for 2 minutes, turn the water on.
- If alarm sounds when the power is switched on, turn power off for five minutes to allow for internal reset of the power supply.
- Check for leaks.

Changing the Filter Cartridge

1. Turn off the water flow to the cartridges at the valve, tank or tap.
2. Release the pressure by opening a tap downstream, or use the pressure relief valve that is available in the lid of the filter housings.
3. Unscrew the bottom housing from the lid* and remove the used cartridge and discard or wash. The inside of the filter housing and the lid should be checked for cleanliness – they will usually need to be cleaned or sanitised – use hot water and dishwashing liquid, thoroughly scrub all surfaces and then rinse.
4. Check that the o-ring is in position in the top of the housing base, lubricate with a coating of suitable rubber lubricant, such as silicone. Place the o-ring into the groove and with two fingers wipe the o-ring down into the groove. Do not wipe the o-ring clean of lubricant after it has been properly seated in the groove because the lubricant prevents “crawling” of the o-ring during the tightening of the lid and thus prevents water leaks.
5. Screw the housing onto the lid and hand tighten. Open the tap downstream of the filter and then open the inlet valve.

*The cartridge spanner supplied with the unit may help if the housing is tight.



CAUTION: The housing must be protected against freezing. Failure to do so may result in cracking of the housing and water leakage.



WARNING: CAREFULLY AND GENTLY TIGHTEN WITH HOUSING SPANNER as the bowl should only be tightened enough to avoid water leaking during operation.



WARNING: If the water system is not going to be used for extended periods, the cartridge should be removed from the housing and replaced with a new or cleaned cartridge when the system is used again.



IMPORTANT: When opening the filter housing to install or change the cartridge (element) it is common for the o-ring seal to lift out of the groove and, at times, it may even stick to the cap.



CAUTION WHEN INSTALLING

1. This is a plastic product with a female thread. If you cross-thread a male fitting, and/or you over pack with sealing tape, you could do permanent damage.
2. If you use a tapered thread male fitting do not over tighten.
3. No warranty claims will be considered for damage due to incorrect installation.

Replacing the UV lamp – Yearly

Carefully unwrap the replacement lamp. The packaging can be reused to return your old lamp to your place of purchase for recycling. Do not break the old lamp and do not dispose of it in general waste.

- Disconnect power by unplugging the cord set.
- Depressurise the system and drain the UV chamber by removing the drain plug. Remember to put the plug back on when the chamber is empty.
- Turn off water supply to the inlet of the Steriflo.
- Unscrew the earth connection
- Unscrew the 2 small screws holding the endcap on.
- This will expose the wiring for the lamp. Disconnect the lamp and remove it straight up. Only handle the lamp by the ceramic-coated ends.
- Insert the new lamp and reconnect the wiring. Push the cords into the top of the quartz sleeve so that the 2 small screws can be inserted.
- Connect the earth wire.
- Plug in the power and turn on. Allow the lamp to run for 2 minutes, turn the water on.
- Ensure the reset button is pressed and held for approx. 10 seconds. The unit should beep to indicate the lamp life timer has been reset. The timer will then count down for 12 months and beep alarm when the lamp needs to be replaced.
- Securely wrap the used lamp in the packaging and return it to your place of purchase for return to Davey Water Products and recycling.
- If alarm sounds, turn power off for 5 minutes to allow internal reset of the power supply.

Sediment Cartridge Filter Life

Once the housing is properly installed, a reduction in flow/pressure (to such an extent as to cause inconvenience) will indicate when the cartridge is becoming clogged and needs replacing or cleaning. Sediment cartridges should be replaced or cleaned and sanitised when the water flow has been noticeably reduced or after 3-6 months – whichever comes first (this is for hygiene reasons).

NOTE: Actual filtration/purification life of cartridge can vary with the condition of incoming water.

NOTE: It is possible to wash the 20 micron pleated cartridge with mild detergent. Once damage is evident it should be replaced. The one micron polyspun cartridge is NOT WASHABLE and should be replaced for hygiene reasons every 6 - 12 months.

Replacement Part Numbers

	50Lpm	70Lpm
Lamp	GPH550N2/W	GPH550N2/W
Quartz Sleeve	TT600	TT600
Pressure ring (between endcap and sleeve)	S113	S113
O-Ring	S24X3N70	S24X3N70
20um filter cartridge	20PP10J	20PP20J
1um filter cartridge	1PS10J	1PS20J
Cartridge housing	W10J25MM	W20J25MM



WARNING

Ultra Violet radiation is harmful to skin and eyes.

EYES: Switch off UV system before removing covers. If working within line of sight of UV light, ensure that a suitable full face plastic facemask is worn.

SKIN: It is recommended that exposed skin is covered to prevent sunburn, possibly severe, if working within line of sight of operating UV system.

Note: exposure to UV light results in symptoms that develop slowly, the exposure cannot be felt at the time.

SYMPTOMS

EYES: Mild exposure - irritation developing several hours later. Severe exposure - sore, red eyes, sensitive to light, painful to keep eyes open.

SKIN: Mild exposure - slight reddening, tenderness, mild sunburn symptoms. Severe exposure - skin sloughing (peeling), weeping area, severe sunburn symptoms.

FIRST AID

EYES: In mild cases, if in doubt seek medical attention. Severe cases cover eyes with gauze or clean cloth, seek medical attention.

SKIN: In mild cases removal from exposure may be sufficient. If in doubt seek medical attention. In severe cases, cover affected area loosely with a clean bandage or cloth. Seek medical attention. Do not apply fat, butter or oil to skin.

The above notes are intended to highlight the dangers of exposure to UV radiation. With sensible precautions any hazard can be eliminated.

Germicidal UV cannot pass through clothing or other opaque materials or clear materials such as plastics or even window glass.



WARNING - Do not use hydrocarbon based or hydrocarbon propelled sprays around the electrical components of this unit.



During service DO NOT use lubricants or sealants of any type on the Steriflo o-ring. Keep the inside of the quartz sleeve dry and clean.

After Sales Service

For professional after sales service or repair, contact your Davey Dealer.

Davey Repair or Replacement Guarantee

In the unlikely event in Australia or New Zealand that this Davey product develops any malfunction within warranty periods beginning from the date of original purchase due to faulty materials or manufacture, Davey will at our option repair or replace it for you free of charge, subject to the conditions below.

Davey Guarantee Period

Steriflo Lamp - Six months Steriflo Controller & Chamber - One Year

Should you experience any difficulties with your Davey product, we suggest in the first instance that you contact the Davey Dealer from which you purchased the Davey product. Alternatively you can phone our Customer Service line on 1300 367 866 in Australia, or 0800 654 333 in New Zealand, or send a written letter to Davey at the address listed below. On receipt of your claim, Davey will seek to resolve your difficulties or, if the product is faulty or defective, advise you on how to have your Davey product repaired, obtain a replacement or a refund.

Your Davey Guarantee naturally does not cover normal wear or tear, replacement of product consumables (i.e. mechanical seals, bearings or capacitors), loss or damage resulting from misuse or negligent handling, improper use for which the product was not designed or advertised, failure to properly follow the provided installation and operating instructions, failure to carry out maintenance, corrosive or abrasive water or other liquid, lightning or high voltage spikes, or unauthorised persons attempting repairs. Where applicable, your Davey product must only be connected to the voltage shown on the nameplate.

Your Davey Guarantee does not cover freight or any other costs incurred in making a claim. Please retain your receipt as proof of purchase; you **MUST** provide evidence of the date of original purchase when claiming under the Davey Guarantee.

Davey shall not be liable for any loss of profits or any consequential, indirect or special loss, damage or injury of any kind whatsoever arising directly or indirectly from Davey products. This limitation does not apply to any liability of Davey for failure to comply with a consumer guarantee applicable to your Davey product under the Australian or New Zealand legislation and does not affect any rights or remedies that may be available to you under the Australian or New Zealand Consumer Legislation.

In Australia, you are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Should your Davey product require repair or service after the guarantee period; contact your nearest Davey Dealer or phone the Davey Support Centre on the number listed below.

For a complete list of Davey Dealers visit our website (davey.com.au) or call:



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* **Installation and operating instructions are included with the product when purchased new. They may also be found on our website.**