OM MANUAL

DEFENDER™

OPERATION AND MAINTENANCE MANUAL

S6 SERIES

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AS/NZS 4801 SAFETY

ISO 14001 ENVIRONMENT

AS/NZS 4801 SAFETY

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section one:

Datasheet

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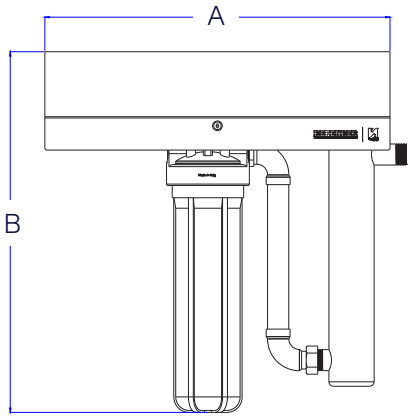
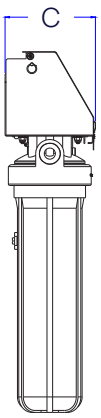
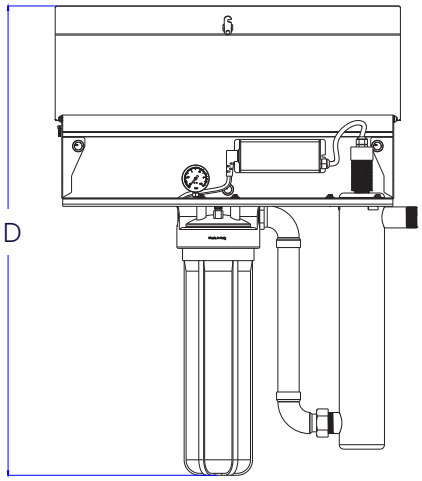
S6 Series

PLANS/DRAWINGS







SPECIFICATIONS

PRODUCT CODE	
D00600503	
FLOW RATES	
Max flow rate	180L/m (10.8m³/h)
OPERATING PRESSURES	
Max pressure	830 kPa
CONNECTIONS	
Inlet/Outlet	1½"BSP (40mm)
POWER	
Power supply	1 x 10 Amp GPO
TEMPERATURE	
Max temperature	45°C

INSTALLED DIMENSIONS (MM)			
Width (A)	Height (B)	Depth (C)	Lid open (D)
780	815	205	1060

REPLACEMENT ELEMENTS	
Sediment Cartridge	S15201002
UV Sleeve O-Ring	0R28-SK
UV Lamp	LL085-S4
UV Thimble	QD060028

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section two:

SKAN UV Manual

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Maintenance Manual for SKAN UV Systems

Defender Filter/UV Series Water Disinfection Units
Covering Models D0600 & D0750

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Level 1, 100 Sunderland Street, Derwent Park, 7009.
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General Safety Instructions

- Use the UV system only for the intended purpose as described in this guide.
- Correctly install your SKAN SV series UV disinfection system as per instructions in this guide. Do not use a SKAN UV disinfection system with damaged electrical cable/plug/switch.
- Make sure that the SKAN UV system is unplugged when it is not being used, before installation, or removing any parts, and before cleaning the unit.
- Depressurize and drain the SKAN 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

The UV system used in the Defender Filter/UV systems comes pre-fitted to the covered wall mount bracket.

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 is 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. There is provision for this device on the UV chamber. (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.

Stainless Steel Reactor:

- The reactor vessel or chamber comes pre-mounted to the covered wall bracket. The reactor has been installed vertically with the outlet at the top. This orientation will ensure there will be no entrapped air in the chamber while there is flow.
- 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 pipework must be properly earthed to ensure safe operation and eliminate the risk of electrolysis and corrosion. There is an

earth stud with locking nut provided on the stainless steel chamber to attach the earth wire from the ballast cable to.

Power Supply Box:

- The power supply box is pre-mounted inside the wall bracket and under the cover, so it is protected from the weather and direct sunlight.
- The standard lamp lead length is 2m.
- 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.

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 it when the sealing nut starts to compress the O ring seal. Approximately ½ 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 chamber should now be pressure tested under operating pressure to ensure there are no leaks.
- 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 fingermarks, 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. You may plug the unit into a power point and switch it on.

Power Supply Box Operating Instructions

General Safety Instructions

ELECTRIC SHOCK!

Attention: Dangerous electric voltage is present inside the power supply box and chamber. The ballast is not user serviceable and should be returned to supplier for any repairs. These instructions must be followed closely to prevent serious personal injuries.

- Do not use a unit with a damaged electrical lead or plug, a unit with any faulty functions, or a unit which has been dropped or has been damaged in some way.
- Do not operate the UV lamp outside of the UV disinfection reactor.
- The power supply box is not designed for remote mounting.
- The PSL1B-080-DDCV and PSL1B-180-DDCV power supply boxes should be mounted indoors so they are not exposed to rain or sunlight.

SKAN UV Systems UV lamps are designed for permanent operation for optimal performance and longevity. Frequent switching on and off reduces the life of the UV lamp.

Ballast Controller Operation

1. NORMAL OPERATION: -

When the PSL1B-080-DDCV and PSL1B-180-DDCV power supplies are properly installed, connected to a UV lamp, switched on and operating normally, the red digital screen will initially display ‘365’ indicating 365 days of rated lamp life remaining. The green LED will also

be illuminated indicating the UV lamp is operating. The red digital display will decrease each day until the screen reaches ‘0’ and the end of lamp life alarm is activated.

2. DISPLAY OPTIONS: -

There is single button operation for viewing options and re-setting the unit. Under normal operating conditions the screen can display lamp life left in days (365 → 0 days) or ballast operating time in days (0 → 9999 days). The default display is the remaining lamp life in days (365 → 0 days). To view ballast operating time, press the button for less than 2 seconds. The LED display will show ballast operating time (0 → 9999 days) for 10 seconds then return to displaying the remaining lamp life (365 → 0 days). Pressing the button while the ballast operating time is displayed will return the display immediately to the remaining lamp life before reaching the end of 10 seconds.

3. LAMP FAILURE: -

If the UV lamp fails the buzzer will sound on and off at 1 second intervals, the red LED will be illuminated, and the remaining lamp life will stop counting down these features will remain until the lamp is replaced and the ballast re-set. The ballast operating days will continue to count up while there is power to the ballast.

4. END OF LAMP LIFE ALARM: -

When lamp life reaches 0 the display will show “A3”, the red LED will flash, and the buzzer will sound on for 1 second and off for 5 seconds.

5. DEFERRING END OF LAMP LIFE ALARM: -

The end of lamp life alarm can be deferred four times for a period of 7 days, to allow time to replace the old lamp with a new lamp. To defer the alarm, press the and hold the button for 5 seconds until the screen displays “dELy” then release the button and the lamp life will be re-set to 7 days and there will be no audible alarm, but the Red Light will be flashing and the “A3” will be displayed. The ballast will count down from 7 to 0 days and the alarm buzzer will start again. This deferring of the end of lamp life alarm can be done 4 times. After the fourth time the buzzer cannot be stopped until the lamp is replaced and the lamp life re-set.

6. LAMP LIFE RE-SETTING: -

When a new lamp is installed in the UV unit the ballast should be re-set to indicate 365 days lamp life remaining. To do this the button should be pressed and held for 10 seconds, when the display will show “rSEt”. Keep pressing for 2 seconds after the LED digits go to 365 and the buzzer sounds once, then release the “S” button and the ballast will be re-set and operating normally.

7. BALLAST FAILURE: -

If there is power to the ballast but there is no digital display and neither of the LEDs are illuminated, then the ballast has failed and needs to be replaced.

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 screwdriver 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.
- 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.

Spare Parts

Defender Model	UV Model	UV lamp	Quartz Thimble	O ring
D4, D5, D7, D8A, S4, S5	D0600	LL053A-S4	QD52025	O25-SK
D6, D9, S6	D0750	LL085-S4	QD60028	O28-SK

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 saltwater 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.

section three:

SKAN Cartridge Manual

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SKAN BAG & CARTRIDGE FILTERS | southland

WATER FILTER
INSTALLATION AND MAINTENANCE MANUAL

General direction for use

- Use only for filtration of water with pH from 6.5 to 8.5. In case of water with pH below or above the limits use only housings marked as Pure Polypropylene (PP).
- In case of filtration of drinking water, do not use with unsafe water or with water of unknown quality without adequate disinfection before or after the filter.
- For anti-scale treatment of drinking water with polyphosphate dosing systems, use only PROPORTIONAL dosing systems. Please note: polyphosphate is not designed to soften water, but to condition it, for example to prevent limescale formation in the boiler and to protect against corrosion.
- Keep protected from light, install under direct light only models with opaque bowl.
- Keep protected from back-flows with a non-return valve.
- Keep protected from water hammer with an anti-water hammer device.
- Do not install near to electric appliances.

WARNING: respect the working conditions, as shown in the sticker affixed to the product.
If the sticker is tampered, damaged, not legible or missing, applicable working conditions are: maximum operating pressure 8 bar (10 bar for filters with metal/brass head), maximum operating temperature 45°C (80° for filters marked HOT / 35°C for dosing systems), maximum water hardness 50°f (500 ppm $CaCO_3$) for dosing systems with polyphosphate crystals. If pressure exceeds the working conditions, protect the product with a pressure reducer.

Installation guidelines

- Install the products in sheltered rooms and protected from freeze and excessive heat.
- Before the installation, check if the hydraulic system has been set-up according to the rules-of-the art in force. Refer to figures:
  A General information.
  B IN - OUT directions presentation in different filter housings models.
  C Installation lay-out:
  1. Municipal water mains | 2. Non-return valve | 3. Pressure reducer | 4. By-pass | 5. Anti-water hammer device (expansion vessel) - check from the table for the appropriate device volume (V) depending on piping diameter (Ø) | 6. Any type of filtration or dosing unit | 7. Other utilities.

  * For products with pressure gauges: apply sealing tape on threads of the pressure gauges and then screw them, do not overtighten, onto 1/8" of the threaded connection at the top of the head; when the filter is set operational, if water is leaking, add sealing tape or screw tighter. For models with brass head, unscrew the caps at the top of the head and screw the pressure gauges according to the procedur indicated above.
  * For products with plugs (screws) for pressure gauges: screw the plugs (provided with o-rings) on tightly.
  * For products with drain kit: screw the plastic nipple with o-ring to the threaded connection for the drain at the bottom of the container, screw the ball valve onto the nipple, after having made sure there is a gasket, then screw the ball valve to the drain funnel or to the hose connector tube, after having made sure there is a gasket.
  * For products with drain plug: screw the plug on tightly.

Installation

- Turn-off the water main.
- Avoid all kind of tensions by using wall brackets as a support.
- Connect the inlet to the product's side with the indication IN and the outlet to the side with the indication OUT.
- Connect to pipes using cylindrical (parallel) fittings (BSP - ISO 228), possibly with flexible hoses.
- Connect to tapered (conical) fittings (ANSI/ASME B1.20.1) only if the product is marked with NPT on head.
- Use only sealing tape as a sealant for the connections.
- The installation of a by-pass is recommended.
- Open the main water tap.
- Vent the filter by unscrewing the breather valve, then retighten it.
- For products with drain kit, with pressure gauges or with drain plugs and/or pressure gauges, make sure that all parts are sealed without water leakage; if there is leakage after having tightened, seal all the threads of all the parts with sealing tape and check that there is no further leakage.

NOTE: after the installation, let the water flow for at least 5 minutes before the use.

Maintenance

- Periodically clean with cold water and a soft sponge. Replace the filter cup every 5 years at least.
- Before opening: turn-off water main and release the pressure by un-screwing the vent-valve on housing head. Then screw and tighten the vent-valve.
- For PROPORTIONAL polyphosphate dosing systems, periodically clean the brass nozzle inside using a needle.
- If not in use for a long time: remove the cartridge or the polyphosphate refill; when re-using apply a new cartridge or new polyphosphate refill.
- Check the housing tightening, if water leaks between sump and head lubricate the o-ring or change with a new one.

NOTE: after the maintenance, let the water flow for at least 5 minutes before the use.

Replacement of the cartridge or of the polyphosphate refill

Follow standards in force regarding waste disposal of used cartridges and polyphosphate refills.

1. Before opening the filter housing turn-off the water main.
2. Release the pressure from the product by un-screwing the vent-valve of the head. Then screw and tighten the vent-valve.
3. Open the housing unscrewing the housing using a proper wrench.
4. Remove the used cartridge or polyphosphate refill.
5. Wipe clean the filter housing with cold water and a soft sponge.
6. Open the new cartridge wrap and discard wrap.
7. Put a new cartridge or polyphosphate refill in the container.
8. Tighten the housing bowl to housing's head using a proper wrench. Do not over-tighten.
9. Turn-on the water main.
10. Slowly turn-on a water supply (tap) downstream the filter.
11. Wait for air purge from the vent-valve, then screw and tighten the vent-valve.

NOTE: let the water flow for at least 5 minutes before the use.

Talk to an expert

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