

Nature Flow[®]

UV Water Treatment System

NF 20 -75W



Owner's Manual
Introduction

"Why buy bottled water when you can own the factory?"

UV Disinfection is effective against greater than 99% of waterborne bacteria and viruses including Cryptosporidium and Giardia (subject to source water quality).

Nature Flow[®] systems use patented self-cleaning ultraviolet technology to ensure optimum, low maintenance water disinfection.

The purpose of this leaflet is to introduce the layout and operation of the Nature Flow 20-75W.

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All Nature Flow® Units are sold subject to our standard conditions of sale & privacy policy (copy available on request).

PLEASE READ THROUGH THIS SECTION FIRST.

Check the contents of your order against the packing slip.

Precautions

- Installation by a licensed person is recommended.
- (Note: If water source is council supply then installation MUST be completed by a licensed person.)
- It is strongly recommended that the Owner purchase a spare ultra violet lamp when the unit is purchased.
- Servicing by service agent is recommended.
- Maintain the highest regard for your personal safety at all times.
- **NEVER look at ultra-violet lamp (when turned on) with unprotected eyes. Avoid exposure of any unprotected body part to ultra violet light emitted from UV lamp when turned on.**

Disclaimer

- This information booklet is provided as a guide only.
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Ultra Violet Sterilisation

UV treatment is Nature's own method of sterilisation. It is unique in its mode of action, in that it does not necessarily kill the target microorganism. Instead, UV treatment alters the DNA strands so that the microorganism is sterilised, thus inactivating the pathogen so that it cannot proliferate and cause disease. A bug that can't reproduce simply dies.

Manufactured UV is concentrated in the 254-nm wavelength as this is the wavelength most effective for sterilisation of waterborne pathogens. Factors limiting the effectiveness of UV treatment are suspended solids, some minerals (eg Iron), the clarity (turbidity) of the source water and the reduction of transmission rate due to fouling of the UV thimble. Suspended solids and mineral content can be mitigated using pre-filtration and the problem of dirty thimbles has been overcome using Nature Flow® patented self-cleaning technology.

Nature Flow® Water Treatment Systems use patented self-cleaning UV technology. The self-cleaning device is neither a mechanical wiper nor a chemical coating. It is a unique cleaner that uses the natural movement of water through the cylinder to clean the thimble that contains the UV lamp thus removing problems associated with the thimble becoming dirty. Should the thimble become fouled, the transmission rate may be reduced such that disinfection is ineffective. Nature Flow's self-cleaning technology has removed this limitation.

Ultra violet sterilisation is an effective and safe method of water treatment. It has a 99% kill rate for waterborne bacteria and viruses.* It is effective against Cryptosporidium and Giardia.* It even neutralises the taste of mains water! Nature Flow® Systems are an effective and efficient method of treating your drinking water.

*Subject to source water and compliance with manufacturer's recommendations.

Your Nature Flow® Water Treatment System may be a variant of the standard unit. This booklet has been designed to provide general guidelines only. Contact your supplier/installer if you have any questions.

Source Water Quality

Units supplied are subject to source water quality. Maximum concentration levels before ultraviolet shall not exceed:

Turbidity	5 NTU
Suspended Solids	10mg/litre
Colour	NONE
Iron	0.3mg/litre
Manganese	0.05mg/litre
pH	6.5-9.5
Hardness	6 gpg

Pre-filtration

Pre-filtration is strongly recommended to ensure source water quality complies with required minimum standards for optimal effectiveness of UV disinfection.

We also recommend a Chlorine flush of the plumbing downstream of the Nature Flow system on a biannual basis. Use 20mg per litre dose and leave the chlorine dose in the plumbing at least for an hour, and preferably overnight (if possible).

Product Specifications – UV Unit

- ✓ Patented self-cleaning UV technology.
- ✓ The system is designed to operate at a maximum water pressure of 600 kpa.
- ✓ The UV cylinder is manufactured from 316-marine grade stainless steel to prevent corrosion. Fittings are manufactured from 304 stainless steel and long life acetyl. **Cylinder must be mounted vertically.**
- ✓ The control box has been designed specifically for use with this system and complies with AS3500. It is rated at IP65 and includes audible and visual alarms.
- ✓ High quality quartz thimbles for optimum operating temperature and Ultraviolet transmission.
- ✓ High quality Hard Glass Ultraviolet lamps for maximum germicidal efficiency and long life. Warranted (pro rata) for 8600 hours of continuous use or one year whichever comes first.
- ✓ Removable bottom Sealing Nut for ease of cleaning
- ✓ All units are designed to give 40 000 microwatt seconds per square centimeter of 254nm Ultra Violet at the end of lamp life.

MODEL	LITRES HOUR*	INLET OUTLET SIZE	POWER CONS WATTS	UNIT DIMENSIONS IN MILLIMETRES						LAMP FAILURE ALARMS		MAX PRESS KPA	TEMP RANGE °C	TURBINE
				Chamber			Control Box			Audible	Visual			
				H	W	Diam	L	W	D					
NF 20	900	½" BSP	20	400	160	60	270	100	70	✓	✓	600	2-50	✓
NF 30	1680	¾" BSP	30	670	160	60	270	100	70	✓	✓	600	2-50	✓
NF 40	2220	1" BSP	40	1060	160	60	270	100	70	✓	✓	600	2-50	✓
NF 58	2460	1" BSP	58	670	160	60	270	100	70	✓	✓	600	2-50	✓
NF 75	4500	1" BSP	75	1060	160	60	270	100	70	✓	✓	600	2-50	✓
NF 150	7800	32 mm	150	1300	300	260	Custom Built			✓	✓	600	2-50	✓

Note: NF150 no longer available. Recommended replacement is dual NF75 treatment unit.

*Assuming: Source Water quality complies with maximum concentration table (previous page) and 95% transmission.

Alarm System

Alarm activation (blue flashing light and audible buzzer) indicates ultra-violet lamp failure.

The ultraviolet lamp must be replaced as soon as possible as the system will not produce purified water while the lamp is inactive. Call your service agent to arrange for lamp replacement.

NB It is strongly recommended that the Owner purchase a spare lamp when the unit is purchased.

Servicing

Units should be serviced annually (unless otherwise recommended). The ultra-violet lamps run continuously for 8500 hours – an average domestic installation will require lamp replacement annually. Commercial/industrial applications may require more frequent servicing.

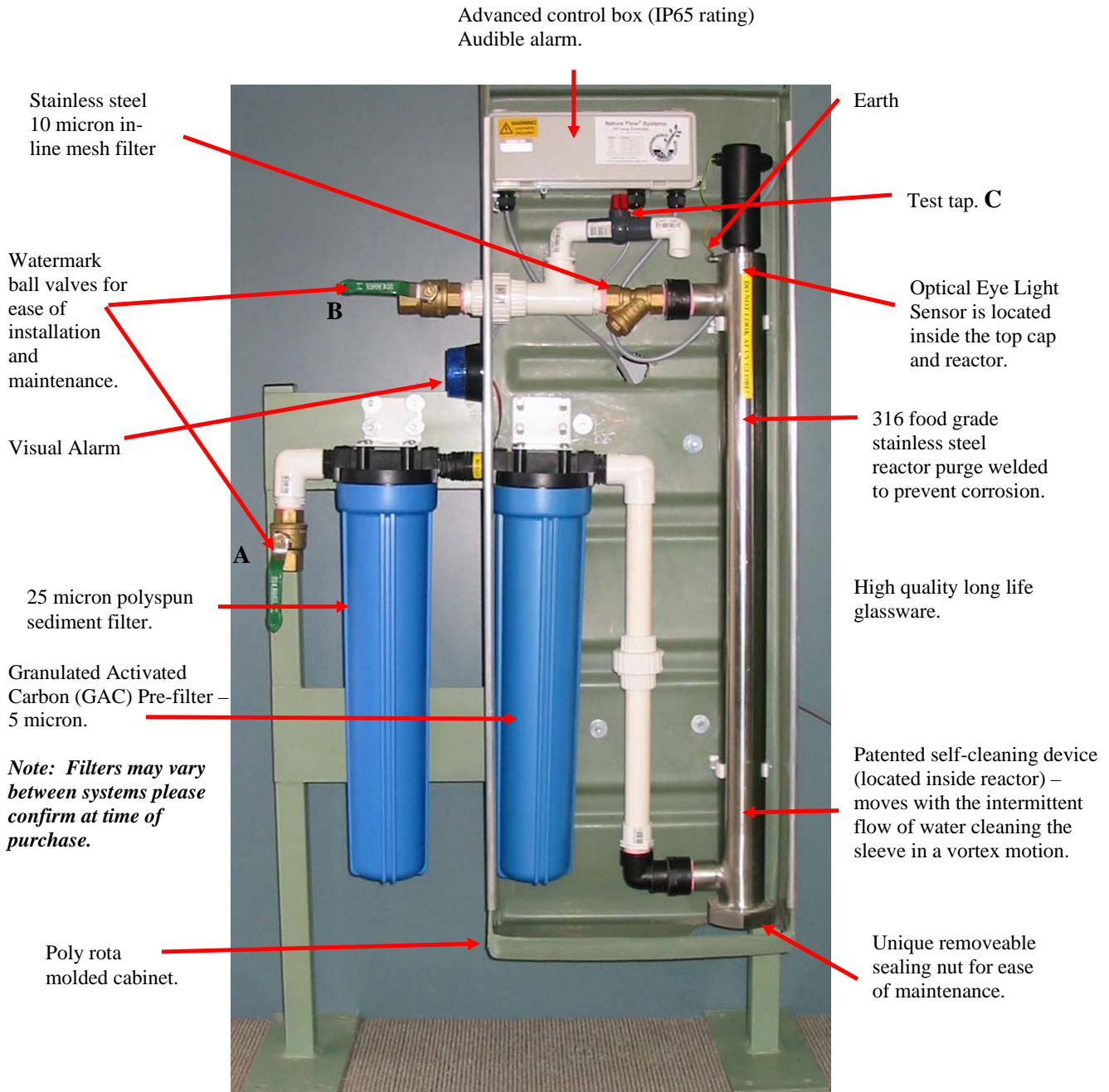
Servicing involves replacing the ultraviolet lamp, replacing the cleaning felts in the turbine cleaner and o'rings.

Filters

Filters (if supplied) may vary between units. Please refer to your quote for filter type. Under normal operating conditions, the filter should be replaced at minimum every six (6) months depending on water quality and use. The replacement filter must be equivalent to the one supplied with unit. Replacement is recommended when water flow is reduced from water outlets eg taps etc.

Nature Flow® Water Treatment System – Complete Unit

(To be used as a pictorial guideline ONLY – units will vary between applications and may not consist of all components shown in this representation.)



Pictorial Depiction of Components



Choosing a Site

Unit is usually installed at the point-of-use.

Ensure unit is located in a protected position – avoid temperature extremes. We recommend that the unit is housed in a protective cabinet or another appropriate location providing equivalent protection from environmental conditions.

Choose a site with a firm mounting position. Allow room for removal of the UV lamp and thimble during servicing. Leave a stainless steel cylinder length (approx one metre) space at the UV lamp connector end (top of unit) for UV lamp removal. Leave 200mm free at the other end for access to the end nut.

Allow for drainage, to avoid damage to flooring etc, that may occur over time from leaking pipe joints or seals.

NB Ensure that a GPO (power point - weatherproof if required) is available for use with the unit.

240VAC mains power required at the unit.

Ensure the UV unit is installed in the **vertical orientation**.

WARNING: Some insects, such as small ants, find electrical devices attractive for various reasons. If your site or enclosure is susceptible to insect infestation you should implement a suitable pest control plan.

Power Connection

Warning: When servicing or attending your Nature Flow®, always ensure power is switched off and lead unplugged. Electrical connections should be serviced only by qualified persons.

Do not use long extension leads as they can cause substantial voltage drop leading damage or poor UV lamp / system performance.

Caution: Access to the supply cord is necessary for servicing the system. The three-pin supply plug must remain accessible after installation.

The Nature Flow system is not intended for connection to fixed wiring.

If connection to fixed wiring is required then connection **must** be carried out by a licensed electrician and completed in accordance with all State and National wiring standards. If the system is to be installed to fixed wiring then a 2 pole lockable isolator is recommended to allow safe servicing of the system.

The Nature Flow System has a blue strobe light (to be mounted in a visible location near the unit). This light will be illuminated whenever the control box senses UV lamp failure. There is also an audible alarm (a "buzzing" sound) in the event of UV lamp failure. These alarms will only work when the unit is connected to the correct electrical supply.

Electrical Surge Protection

An electrical power surge or spike can travel on the supply lines and cause serious damage to your electrical equipment. If the installation is subject to electrical power surges or lightning we strongly recommend the use of suitable surge protection devices on ALL electrical equipment.

Nature Flow also recommend the use of an RCD or earth leakage circuit breaker (safety switch) on the power supply of your unit.

Installation at Water Supply

Installation by a licensed person is strongly recommended and may be required by State and/or Local Authority.

For best performance use copper, stainless steel, galvanized or polythene pipes at least the same diameter as the inlet and outlet connections. Min 3/4 water feed.

Larger diameter pipe may be used to minimize 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.

ONLY use Teflon sealing tape. Use sufficient tape to ensure airtight seal and do not overtighten. To prevent strain on unit threads always support heavy inlet and outlet pipes.

Water inlet is located at the bottom of the cylinder adjacent to the large hexagonal sealing nut.

Water outlet is located at the opposite end of the cylinder.

We recommend the use of ball valves at inlet and outlet for ease of installation and maintenance.

Where pre-filters are required we also recommend installing an additional ball valve inline after the filter and UV unit to serve as a flush out valve for use at filter replacement. This additional ball valve serves a dual purpose in that it also provides a test point for water sampling.

Unit does require a 500 kpa pressure limiting valve if pressure exceeds 500 kpa at water service.

If on main supply, backflow prevention may be required (refer to local authority for back flow prevention device requirements and guidelines.).

Installation of UV Thimble

Unscrew the thimble holder (2). Place thimble (6) gently into the top of the cylinder ensuring to locate centre of turbine (13) and thimble seat (7).

Next lubricate the O'Ring in the Thimble Holder using a food grade grease eg Vinoleo WT90, then screw the thimble holder (2) onto the cylinder firmly. DO NOT OVERTIGHTEN!

Guidelines below refer to standard POE unit as depicted on page 5.

1. Turn water supply off.
2. Connect inlet line to the lower ball valve (A).
3. Connect the top ball valve (B) to the outlet line.
4. Ensure test tap (C) is open to flush filters.
5. Turn water supply on.
6. Turn valve (A) on slowly.
7. Check pipework for leaks.
8. Close test tap (C) once water runs clear.
9. Turn valve (B) on slowly.

Filter Cartridge Installation

Turn off water supply. Close inlet and outlet ball valves. Bleed pressure from system via test tap (ball valve C).

Install filter cartridge.

The filter requires flushing prior to use. Open inlet ball valve (A). Open test tap (C). Flush filter until water runs clear. Close test tap (C). Open ball valve (B).

Installation of Control Box and UV lamp

The control box should be mounted no further than 500mm from the top of the cylinder or else the lamp lead may be too short to reach. It should be mounted in such a fashion to allow easy connection of the lamp lead and earthing connection. It should also be mounted in such a position that does not put any pressure (ie pulling) on the lamp lead or earthing connection.

Ensure control box is securely mounted utilizing the brackets provided. Do not damage or remove the lead seal from the control box, as this will void warranty. The purpose of the lead seal is to prevent access to live electrical components within the control box. Should the lead seal be removed for any reason, it **MUST** be replaced with an equivalent security seal or measure.

NOTE: If the lead seal is broken without written consent from the manufacturer, warranty is void.

The IP rating of the control box enclosure is not to be compromised in any manner. EG do not drill or screw anything to the control box.

Pipework and thimble installation must be completed and checked for leaks BEFORE installing UV lamp and connecting control box.

Attach the "DO NOT LOOK AT UV LAMP" sticker in obvious position on the stainless steel cylinder, check that the stainless steel cylinder is clean to ensure the sticker will adhere correctly.

DO NOT INSERT THREE PIN POWER PLUG TO POWER OUTLET YET!

REMOVE PRESSURE FROM SYSTEM WHILE INSTALLING UV LAMP

Pull off Top Cap (1).

Install the UV lamp.

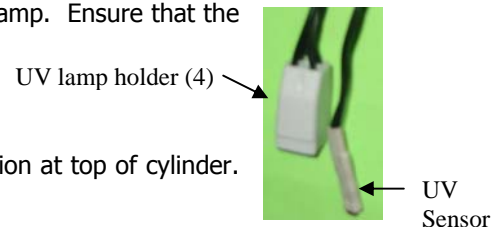
Care should be taken when handling UV lamp. hold by white ceramic ends only. Do not touch the clear parts of the UV lamp as it will become contaminated. Remove any marks from the UV lamp with a cloth soaked in methylated spirit. Any deposit on the UV lamp, such as fingerprints can affect the output and rated life of the UV lamp. Ensure all traces of methylated spirits have evaporated before installing lamp.

Carefully lower UV lamp GENTLY into the thimble with pins at the top. **DO NOT DROP UV LAMP INTO UNIT AS THIS WILL RESULT IN DAMAGE.** Make sure the UV lamp holder (4) is attached before completely lowering otherwise the unit will need to be dismantled to retrieve the UV lamp from inside the thimble!

Ensure optical eye (UV sensor) attached beside (4) is lowered in at the same time as the UV lamp. The sensor should be lowered into the thimble below the ceramic end of the UV lamp. Ensure that the sensor is placed with the exposed metal facing the UV lamp.

Place top cap (1) over thimble holder (2) and press down firmly.

Connect Earth (yellow & green wire) to stainless steel cylinder using connection at top of cylinder. ***This is an important safety feature.***



Disconnect electrical connections on strobe from control box. Remove strobe from inside of cabinet and replace on outside of cabinet. Reconnect strobe to control box (push-in fittings).

Plug control box into GPO (power point). **The unit is now ready to be turned on.**

NB Whenever water supply is turned off for prolonged periods it is strongly recommended that the UV unit is also turned off and disconnected from electrical supply.

OPERATION

Once installation has been completed allow 5 minutes for the UV lamp to establish maximum germicidal output. Full lamp performance for a new installation will be achieved in 24 hours. On a new installation where no other form of sterilization has been in constant usage, it is worth considering a Chlorine flush of the plumbing downstream of the Nature Flow system. Use 20mg per litre dose and leave the chlorine dose in the plumbing at least for an hour, and preferably overnight.

Abrasive Materials – The passage of abrasive materials will cause damage to the Nature Flow System and affect the integrity of the water treatment which will then not be covered by the guarantee.

Nature Flow Systems P/L can not accept responsibility for loss or damage resulting from incorrect or unauthorized installations.

As the flow passes through the unit, the Cleaning Turbine will travel up the thimble and locate itself at the top of the stainless steel cylinder above the outlet.

To utilise the Cleaning Turbine, simply isolate the flow through the stainless steel cylinder. The Cleaning Turbine will return to its original position at the bottom of the stainless steel cylinder, cleaning the thimble as it descends. When the flow is restored, the Cleaning Turbine ascends the thimble again, cleaning as it goes. It is recommended that this procedure is done on a regular basis to ensure maximum cleanliness and germicidal efficiency of the unit. *Where installed at the point-of-entry flow isolation occurs automatically whenever a tap (connected to the water supply being treated by the system) is turned on and off.*

The blue strobe will be illuminated and an audible alarm will sound if the UV lamp fails to operate or is disconnected from the UV lampholder whilst the control box is operational. NB Alarms will not operate during power loss events.

Optional Features

These options are available at additional cost.

Solenoid Auto Shut-Off

A solenoid valve may be fitted, generally on the inlet between the filter and the UV unit to allow for an auto shut-off of water flow in the event of system fault. The audible and visual alarm system will automatically operate the solenoid valve on activation and cause the cessation of the flow of water to the residence. Refer to page 12 for further details.

Additional Pre-filtration

Units may be supplied with alternative or additional pre-filtration subject to application and/or client requirements. This will be identified in your purchase documentation and any relevant spares will be specified.

Wastewater Applications

Units will vary in layout for wastewater applications. Refer to page 12 for further details.

Solenoid Valve

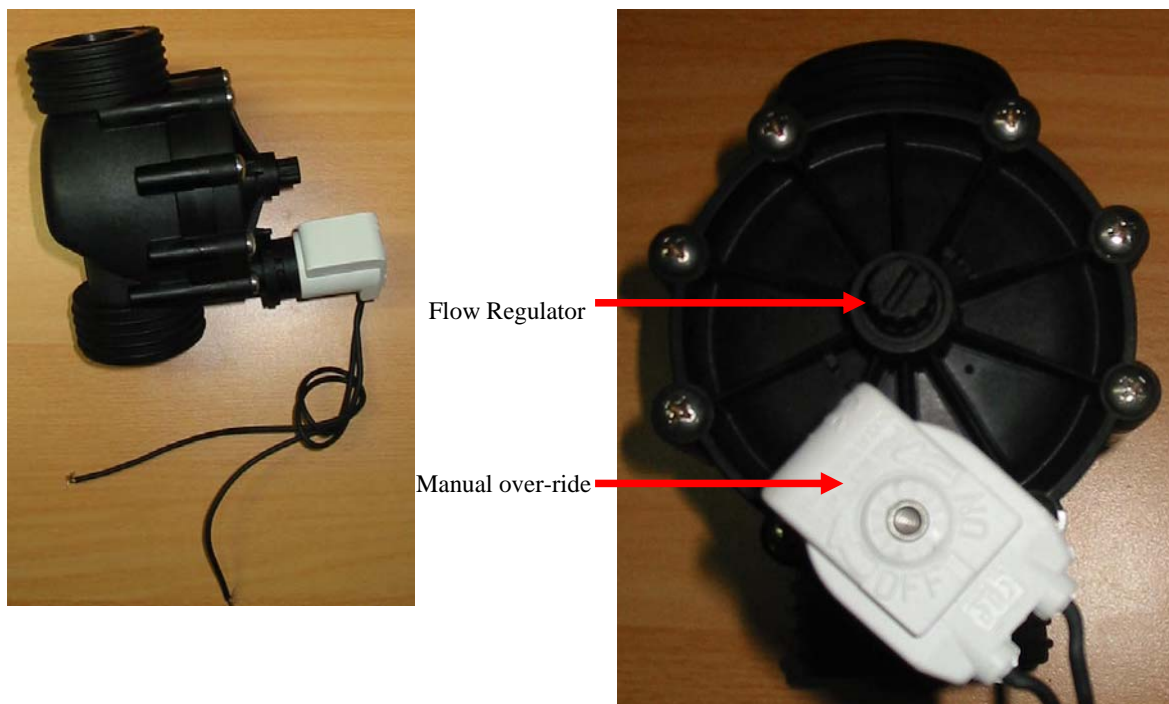
An optional solenoid valve auto shut-off option is available on all units (at time of manufacture).

A solenoid valve may be fitted, generally on the inlet between the filter and the UV unit to allow for an auto shut-off of water flow in the event of system fault. The audible and visual alarm system will automatically operate the solenoid valve on activation and cause the cessation of the flow of water to the residence.

The solenoid valve includes a flow regulator function that will require adjustment subject to source water pressure and/or flow rate.

To adjust the flow the screw located at the centre face of the solenoid should be wound completely open (anti-clockwise) and then slowly turned clockwise to close until the vibration ceases. This regulation will differ between individual installations and should be completed at initial installation. Vibration resulting from water hammer as a result of solenoid valve activation may occur where this pressure/flow adjustment has not been performed correctly.

This valve has a manual over-ride function. The white fitting on the solenoid valve may be turned and locked into place to manually open the valve such that flow can resume. This function may be required where system failure occurs at a time when timely repair is unavailable ie public holidays, weekends etc. **Caution should be exercised when using this function as water will be untreated until such time that the system is brought back online fully.**



Fitting shown in over-ride operating position ie 45° to left – “On” position. When in normal operation turn the fitting 45° to the right such that it lines up with the flow regulator – “Off” position. There is a locking mechanism to the left side of the fitting to ensure that the fitting can not be turned too far and to assist with identifying the actual position of the over-ride mechanism.

Refer to Figure 1 and pictorial depiction of components. Servicing by service agent is recommended.

HOW TO REPLACE UV LAMP

1. Switch off power and disconnect power at GPO.
2. Lift top cap.
3. Disconnect 4-pin fitting from UV lamp.
4. Gently pull UV lamp upwards and remove from thimble.
5. Carefully lower replacement UV lamp GENTLY into the thimble with pins at the top. Care should be taken when handling UV lamp, **hold by white ceramic ends only**. Do not touch the clear parts of the UV lamp as it will become contaminated. Remove any marks from the UV lamp with a cloth soaked in methylated spirit. Any deposit on the UV lamp, such as fingerprints can affect the output and rated life of the UV lamp. **DO NOT DROP UV LAMP INTO UNIT AS THIS WILL RESULT IN DAMAGE**. Make sure the UV lamp holder is attached before lowering otherwise the unit will need to be dismantled to retrieve the UV lamp from inside the thimble!
6. Ensure UV sensor is lowered into thimble below ceramic end of UV lamp.
7. Push top cap back into place.
8. Turn on power supply and wait for two minutes to allow lamp to warm up.
9. Slowly turn on outlet valve.

HOW TO TEST LIGHT SENSOR AND ALARMS

1. Follow steps 1 - 4 above.
2. Replace top cap on cylinder pressing down firmly. (This will ensure that the 4-pin plug and light sensor is lowered into the cylinder without the UV lamp attached).
3. Connect 3-pin supply plug to powerpoint.
4. Turn unit on.
5. Listen for audible buzzer and watch for blue strobe. If light sensor is operating correctly both alarms should activate.
6. Turn off unit. Disconnect from power supply and follow steps 5-9 above to reinstall lamp.
7. Once lamp has been installed and the system is again operational there should be no active alarms.
8. If alarms are active then disconnect power and check lamp connection and placement of light sensor (light sensor should be facing lamp). If lamp and sensor installation is confirmed correct then assume light sensor requires replacement.

HOW TO REPLACE LIGHT SENSOR

1. Follow steps 1-4 in "How to replace UV Lamp".
2. Identify type of lamp sensor – hardwired Type A or plug-in Type B. Type A will require installation by a licensed electrician. Type B may be replaced by a suitably competent person. We recommend that those installations with Type A sensors be upgraded at time of replacement with the new Type B sensors. These are available in kit form from Nature Flow Systems.

Type A Sensor

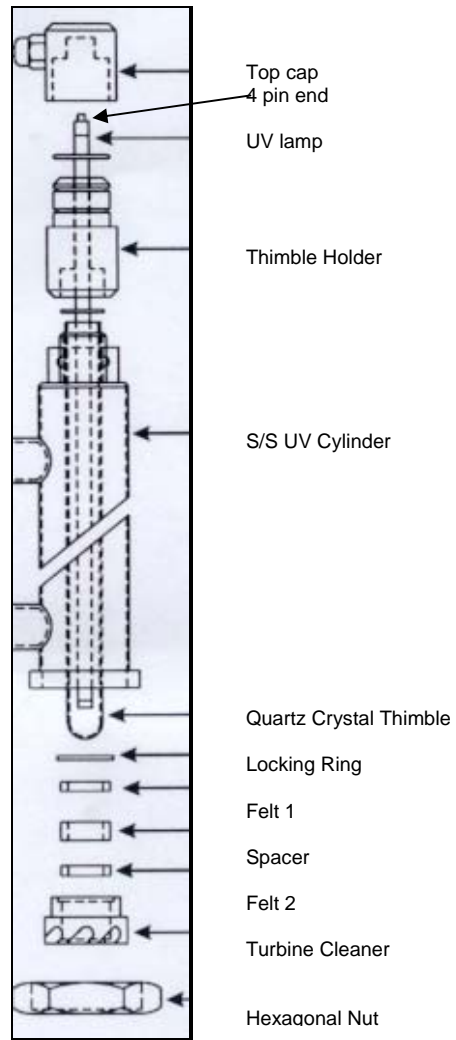
- a) Cut old sensor wires from lamp loom leaving as much length as possible.
- b) Place 5mm heat shrink over both sensor wires.
- c) Place 3mm heat shrink over individual sensor wires.
- d) Solder new sensor leads to sensor wires (Core 5 & 6).
- e) Shrink 3mm heat shrink in place over soldered joints and 5 mm heat shrink over both joints to provide further protection.

Type B Sensor

- a) Unplug old sensor from lamp lead. Take care not to force connection.
- b) Press release latch on plug to facilitate disconnection.
- c) Connect new sensor ensuring plug and socket mate firmly together.
- d) If plug and socket do not go together easily check orientation of plug and socket.

3. Follow steps 5-9 in "How to replace UV Lamp".

FIGURE 1 SCHEMATIC OF UV CYLINDER ASSEMBLY



Refer to Figure 1 and pictorial depiction of components. Servicing by service agent is recommended.

HOW TO REPLACE QUARTZ THIMBLE

1. Switch off power and disconnect from GPO.
2. Turn water off at supply ie switch off and unplug pump from powerpoint.
3. Close inlet and outlet valves.
4. Bleed water pressure off at test tap and loosen hexagon nut at bottom of UV cylinder.
5. Remove top cap.
6. Disconnect UV lamp from 4-pin fitting. Place UV lamp carefully to one side on a clean surface.
7. Unscrew black thimble holder.
8. Gently lift thimble holder up. Thimble should remain attached to holder.
9. Grasp thimble and support as thimble holder is raised to allow for removal.
10. Remove the thimble holder (2).
11. Place replacement thimble (6) gently into the top of the stainless steel cylinder ensuring to locate centre of turbine and thimble seat.
12. Next lubricate the O'Ring in the Thimble Holder using a food grade grease eg Vinoleo WT90, then screw the thimble holder (2) onto the cylinder firmly. **DO NOT OVERTIGHTEN!**
13. Turn water on at supply ie plug pump back into powerpoint.
14. Slowly open inlet valve and bleed air from system via Test tap (valve C)
15. Perform leak checks on the system.
16. Once leak checks have been performed new UV lamp can be installed.
17. Replace Ultraviolet lamp (see instructions above).

NOTE: When withdrawing thimble take care not to let the end drop into the stainless steel cylinder as it could break.

HOW TO SERVICE TURBINE CLEANER

1. Switch off power and disconnect from GPO.
2. Close inlet and outlet valves.
3. Bleed water pressure off at test tap and loosen hexagon nut at bottom of UV cylinder to allow water to drain.
4. When drained completely remove hexagonal nut at bottom of UV cylinder.
5. Thimble seat will drop from cylinder. Move to one side until reassembly required.
6. Turbine cleaner will also drop down from UV cylinder. If turbine cleaner does not drop out see instructions for dislodging.
7. Remove used felts (2).
8. Snap out locking ring by laying turbine on its side, pulling spacer away from locking ring, place screwdriver through centre hole of turbine and tap gently to remove locking ring.
9. Remove spacer.
10. Wet new felts. Insert first felt. Replace spacer. Insert second felt.
11. Replace locking ring.
12. Remove and replace thimble seat o'ring. This is located in recess at bottom of cylinder (on cylinder end). Lubricate o'ring with valve lubricant prior to placement.
13. Re -insert cleaning turbine into UV cylinder with locking ring to the top.
14. Clean thimble seat and re-insert - hold in place.
15. Screw hexagonal nut back into place at bottom of UV cylinder.
16. Plug leads into powerpoint and turn system on.
17. Open inlet valve and flush system through test tap.
18. Close test tap.
19. Check pipework for leaks.
20. If leaking check where leak is coming from – check o'ring seal and check tension on hexagonal nut.
21. If all OK then open outlet valve.

Refer to Figure 1 and pictorial depiction of components. Servicing by service agent is recommended.

IF TURBINE CLEANER BECOMES LODGED IN UV CYLINDER AND WILL NOT DROP OUT

1. Switch off power and disconnect from GPO.
2. Close inlet and outlet valves.
3. Bleed water pressure from test tap and loosen hexagon nut at bottom of cylinder to allow water to drain. Do not remove nut entirely.
4. Remove top cap.
5. Disconnect UV lamp from 4-pin fitting. Place UV lamp carefully to one side on a clean surface.
6. Unscrew black thimble holder.
7. Gently lift thimble holder up. Thimble should remain attached to holder.
8. Grasp thimble and support as thimble holder is raised to allow for removal. Place thimble and holder to one side.
9. Continue as per Steps 4-15 of "How to service the turbine cleaner".
10. After completing all steps in "How to service the turbine cleaner", carefully and gently replace thimble and screw on black thimble holder.
10. Turn inlet valve on and flush system through test tap. Close test tap and pressure test unit.
11. Once leak checks have been performed.
12. Replace Ultraviolet lamp (see instructions steps 5-9).

Standard Replacement Parts – UV Unit

Ultra Violet Lamp 20 watt
Ultra Violet Lamp 30 watt
Ultra Violet Lamp 40 watt
Ultra Violet Lamp 58 watt
Ultra Violet Lamp 75 watt
Quartz Thimble 20 watt
Quartz Thimble 30/58 watt
Quartz Thimble 40/75 watt
Food Grade Lubricant 20mL tube
Service kit (o'rings & cleaning felts only)
Light Sensor Type A (hardwire type)
Light Sensor Type B (plug-in type)

Filter cartridges vary between systems – please confirm system requirements at point of purchase.

All prices subject to change without notice. Excludes packaging and freight.

Maintenance

Maintenance for the UV unit only is detailed below. Additional maintenance may be required for those systems including pre-filtration and/or other options. Refer to your supplier/installer.

1. UV lamp is warranted (pro-rata) for 8 600 hours of continuous use or one year whichever is the sooner and should be replaced on an annual basis.
2. The turbine cleaner requires annual servicing at which time, the cleaning felts and o'rings shall be replaced.
3. The UV thimble should be replaced every two (2) years or earlier if required. On annual inspection check for cracks, crazing and general degradation.
4. O'Rings are to be replaced on annual service. When installing glassware (whether a replacement or reinstall) ensure the O'Rings are greased with food grade lubricant.
5. We recommend light sensors are replaced as required. Older units with the hardwired light sensor may wish to upgrade to the new "push-in" plug type light sensor now available.

Testing

Samples are to be taken from the line after UV disinfection and as close to the point of disinfection as possible. Where available use test tap (c) if installed. Ensure correct sampling procedures are followed. Intermittent installations will require minimum flow of 2 minutes prior to sample being collected.

Trouble Shooting

Principle. The basic electrical circuit is like a fluorescent light. Advanced electronic ballast (choke) provides the correct voltage and current for UV lamps. A starter is not required as the electronic ballast allows for a "soft-start" providing protection for the UV lamp. The circuit board monitors the light from the UV lamp and if it is not present, illuminates the blue strobe light and sounds the alarm buzzer (a "buzzing" noise).

1. UV LAMP OUT, NO ALARM
 - o No mains voltage.
 - o Check mains power connections inside power supply.
2. UV LAMP FLICKERING, ALARM ON
 - o Failed UV lamp.
 - o Incorrect UV lamp or ballast fitted.
3. UV LAMP OUT, ALARM ON
 - o UV lamp failed.
 - o Poor connection to UV lamp (check/clean connector/UV lamp pins).
 - o Ballast failed (unlikely).
4. UV LAMP ON, ALARM ON
 - o Faulty circuit board, loose connection or lamp sensor. Lamp sensor incorrectly installed.
5. VIBRATION THROUGH UNIT ON OPERATION
 - o Check adjustment of solenoid valve to ensure flow/pressure is regulated appropriately for application. Refer to manual for solenoid valve adjustment procedure.

WARNING: When servicing or attending your Nature Flow® System always ensure power is switched off and lead unplugged. Electrical connections should be serviced only by qualified persons.

Care should also be taken when servicing or disassembling the unit and associated pipework to avoid possible injury from pressurized water. Unplug power, relieve pressure by opening a tap on the discharge (outlet) of the unit and allow any water in the unit to cool before attempting to dismantle.

Please contact your service agent or installer should you have any questions or require further information.

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

Refer to MSDS.

Keep the inside of the quartz thimble dry and clean.

Material Safety Data Sheet – Ultra Violet Lamps



THE STANDARD OF EXCELLENCE IN ULTRAVIOLET

Manufacturers / Engineers / Sales / Service

375 Marcus Boulevard
Hauppauge, New York 11788

Tel: 631.273.0500

Fax: 631.273.0771
631.273.0780

www.ultraviolet.com
email: info@atlanticuv.com

PRODUCT DATA SHEET

PRODUCT: Germicidal Ultraviolet Lamps including ozone-producing types

SECTION 1 MANUFACTURER

Manufacturer's Name and Address:

Atlantic Ultraviolet Corporation
375 Marcus Boulevard
Hauppauge, NY 11788
Telephone (631) 273-0500
Fax: (631) 273-0771
Email: info@ultraviolet.com
Website: www.ultraviolet.com

SECTION 2 HAZARDOUS INGREDIENTS

OSHA PEL	ACGIH TLV	PERCENTAGE
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Inert ingredients

(glass, tungsten, molybdenum, copper) approx. 99.95% by wt

Mercury	.05 mg/m ³	.05 mg.m ³	approx. .05% by wt.
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SECTION 3 PHYSICAL CHEMICAL CHARACTERISTICS

Not applicable. This item is an ultraviolet lamp. Up to 8 foot long and up to 1.5 inches in

SECTION 4 FIRE AND EXPLOSION DATA

Fire and explosion data not applicable. Under extreme heat, glass envelope might melt or crack; plastic base may burn.

SECTION 5 REACTIVITY DATA

Stability: Lamp is stable

Incompatibility: Glass will react with Hydrofluoric Acid

Polymerization: Not applicable

GERMICIDAL LAMPS & FIXTURES / AIR PURIFICATION EQUIPMENT / WATER PURIFICATION EQUIPMENT / LIQUID DISINFECTION EQUIPMENT
OZONE GENERATORS / WASTE WATER DISINFECTION SYSTEMS / PHOTOTHERAPY EQUIPMENT / BLACK LIGHT LAMPS & EQUIPMENT

SECTION 6 HEALTH HAZARD DATA

Ultraviolet Rays

This product (germicidal lamps) is intended for applications only where humans will not be intentionally exposed to the ultraviolet rays. Avoid exposure of persons to direct or reflected germicidal ultraviolet rays. If it is desired to operate germicidal lamps in such a way that persons will or may be exposed to the germicidal ultraviolet rays, adequate eye, face and skin protection must be worn by all exposed persons. Overexposure to direct or reflected rays will cause painful eye irritation and reddening of the skin (TLV = 6.0 mJ/cm² at 254 nm).

Ozone

Some germicidal lamps (ozone producing types), in addition to producing ultraviolet rays, will also produce substantial quantities of ozone when operated in air. Care should be exercised in design and installation of equipment so that ozone concentration will not exceed .05 parts per million in areas occupied by people. Provide adequate ventilation in all areas where equipment utilizing ozone producing lamps are employed.

Breakage of the lamp may result in some exposure to elemental mercury vapor. No adverse effects are expected from occasional exposure to broken lamps, but as a matter of good practice, prolonged or frequent exposure should be avoided through the use of adequate ventilation during disposal of large quantities of lamps.

SECTION 7 PRECAUTIONS FOR SAFE HANDLING AND USE

See Section 6

Normal precautions should be taken for collection of broken glass.

WASTE DISPOSAL METHOD: Dispose in accordance with applicable Federal, State and local regulations.

SECTION 8 CONTROL MEASURES

Appropriate eye, skin and face protection should be worn by all persons exposed to germicidal ultraviolet rays.

Adequate ventilation will tend to prevent excessive accumulation of ozone.

Respiratory Protection: Appropriate dust mask should be used if large volumes of lamps are being broken for disposal.

Ventilation: Avoid inhalation of any airborne dust.
Provide local exhaust when disposing large quantities of lamps.

Hand and Eye Protection: Appropriate hand and eye protection should be worn when disposing of lamps or handling broken glass.

Nature Flow Systems Product Guarantee For Australia

Nature Flow® Systems, except for UV lamps, are guaranteed for a period of one year from the date of original purchase to be free of materials or manufacturing defects. Should any part fail as a result of such defects within this period, they will be repaired free of charge subject to the terms and conditions below. Additionally, a one year pro-rata, parts only guarantee commencing from the date of original purchase shall apply to the UV lamp only. Breakage and/or accidental damage are not covered.

TERMS AND CONDITIONS

1. This guarantee applies to all states and territories of Australia only and is subject to the provisions of the Trades Practices Act (Aust) and the Goods and Consumer Protection Legislation of the various Australian states as applicable.
2. The guarantee period commences on the date of original purchase of the equipment. Evidence of this date of original purchase must be provided when claiming repairs under this guarantee. It is recommended you retain all receipts in a safe place.
3. This guarantee covers parts and workshop labour only. Freight (inwards & outwards) remains the responsibility of the purchaser. Goods should be forwarded, with proof of date of original purchase, to the Nature Flow Systems Service Centre freight paid.
4. Goods must be returned whole and in testable condition. Warranty for control boxes will be voided where there is evidence that the lead seal has been tampered with or is broken.
5. The pro-rata guarantee is calculated on a monthly basis, up to 12 months. NOTE: This guarantee only applies to Nature Flow® control box or Nature Flow® parts damaged through a Nature Flow® malfunction.
6. This guarantee is subject to due compliance by the original purchaser with our standard terms and conditions of sale, our supplementary standard conditions and our Privacy Policy.
7. This guarantee is subject to due compliance by the original purchaser with all directions and conditions set out in the Installation and Operating Instructions. Failure to comply with these instructions, damage or breakdown by fair wear and tear, negligence, misuse, incorrect installation, chemical or additives in the water, lightning or high voltage spikes or through unauthorized persons attempting repairs are not covered under this guarantee. The product must only be connected to 240VAC mains power unless otherwise specified by the manufacturer in writing.
8. Without limiting the original purchaser's entitlements under the Trade Practices Act (Aust.) and the Goods & Consumer Protection Legislation of the various Australian states. Nature Flow Systems 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 the product or any defect.
9. Where the Trade Practices Act (Aust.) and the Goods and Consumer Protection Legislation of the various Australian states does not apply, Nature Flow Systems 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 the product or any defect and the purchaser shall indemnify Nature Flow Systems against any claim by any other person whatsoever in respect of any such loss, damage or injury.
10. Nothing in this guarantee is intended to have the effect of contracting out of the provisions of the Trade Practices Act (Aust.) and the Goods and Consumer Protection Legislation of various Australian states except to the extent necessary to give effect to that intention.
11. Nature Flow Systems may be collecting personal information only to use this information in accordance with the Provisions of the Privacy Act 1988 (Cth).

Nature Flow® is a registered trademark of Waterpac Patents P/L. The "environmentally friendly system" tick logo is a registered trademark of Waterpac Patents Pty Ltd. Other names and products not mentioned above may be registered trademarks or trademarks of their respective companies.

CHANGE OF OWNERSHIP

It is a requirement as part of the standard conditions of supply of a Nature Flow® UV Treatment Systems that you notify Nature Flow Systems Pty Ltd of any change to ownership.

Nature Flow UV Unit Site Address	
Name of Current Owner	
Name of New Owner	
Postal Address of New Owner	
Contact Numbers of New Owner (if known) Landline	
Fax	
Mobile	
Date Effective from	

Please forward the completed form to:

Nature Flow Systems Pty Ltd, PO Box 2009 Hervey Bay QLD 4655.

Thank you.

Please attach Proof of Purchase (receipt) here.

Purchased from:	
Address:	
Date of Purchase:	

Nature Flow® UV Water Treatment Systems are manufactured by:

Nature Flow Systems Pty Ltd

Ph: 07 4128 8019

Fax: 07 4128 8171

Email: info@natureflow.com.au

Web Address: www.natureflow.com.au

Postal Address: PO Box 2009 Hervey Bay QLD 4655

Your system was supplied/installed by

Contact your supplier/installer or Nature Flow Systems Pty Ltd should you have any questions or require further information, or to arrange for annual servicing of your system to ensure its high level of performance is maintained.

This information booklet should be kept in an accessible area at all times.