

VORTEX+

Vortex+ Technical Manual



Vernacare
cleaner safer healthcare

Contents

Declaration of Conformity	Page 01
Warranty	Page 02
Section 1 - Specifications	Page 05
Section 2 - Installation & Commissioning	Page 08
Section 3 - General Description	Page 15
Section 4 - Outer Casing	Page 17
Section 5 - Motor Assembly	Page 18
Section 6 - Diaphragm Valve Assembly	Page 19
Section 7- Lid Arm Assembly	Page 20
Section 8 - Top Cover Assembly	Page 22
Section 9 - Hopper Vent Arrangement	Page 23
Section 10 - Water Distribution	Page 24
Section 11 - PCB	Page 25
Section 12 - Electrical Enclosure	Page 26
Section 13 - Sensor Terminal	Page 26
Section 14 - Pneumatics Assembly Reference Diagram	Page 27
Section 15 - Additional Items & Kits	Page 27
Appendix A - Manual Pump and Outlet Buttons	Page 28
Appendix B - Motor Terminal Wiring	Page 29
Appendix C - Motor Electrical Box Plug & Socket Connectors	Page 30
Appendix D - Orientation of Diodes for Solenoid Valve Coil Terminals	Page 30
Appendix E - Suggested Periodic maintenance	Page 31
Appendix F - Australian Watermark Certification	Page 32

Declaration of Conformity

VERNACARE Declare that this declaration has been issued under the sole responsibility of the manufacturer. The object of the declaration is in conformity with the relevant Union harmonisation

PRODUCT Vernacare Vortex / Vortex + Macerator

DIRECTIVE EC Directive 2014/30/EU
EC Directive 2006/42/EC
EC Directive 2014/35/EU
EC Directive 2002/95/EC (RoHS)
EC Directive 2011/65/EU (RoHS 2)
EC Directive 2002/96/EC (WEEE)

STANDARDS IEC EN61010 - 1: 2001
BS EN61010-1: 2001
BS EN 61000-6-1:2005
BS EN 61000-6-3:2007

Conformity is demonstrated by the affixing of the CE Mark.

LOCATION Vernacare Limited
Folds Road
Bolton
Lancashire
United Kingdom
BL1 2TX

DATED 11/11/2020

AUTHORISING SIGNATURE



C.E.O of Vernacare Limited

Warranty

A. Warranty terms

1. The warranty is for 12 months from the date of commissioning or 18 months from the date of delivery, whichever is the shortest period.
2. The warranty will cover parts and labour.
3. The warranty will not cover customer damage or abuse.
4. Warranty requests should be submitted in writing, quoting the machine number, date of commissioning and the machine fault.
5. The warranty will not affect your statutory rights, or rights given in the company's Terms and Conditions of Sale.
6. Extended warranties are available. Contact Vernacare for further details.

B. Conditions of warranty

1. The Vortex+ must be installed to the instructions provided in this technical manual.
2. The Vortex+ must be commissioned by a person authorised by Vernacare, failure to do so may invalidate the warranty.
3. Unauthorised modifications may invalidate the warranty if not carried out by a person authorised by Vernacare.

The above warranty details should be read in conjunction with the Company Terms and Conditions of Sale, copies of which are included with your invoice, or available upon request from Vernacare:

Telephone: +44(0)1204 555988

Fax: +44(0)1204 523595

E-mail: service@vernacare.com

C. Service Contracts

To ensure continued reliability and performance, service contracts are available.

All warranty and service contract work will be carried out by Vernacare Technical Services, a division of Vernacare Limited OR in the case of an overseas installation, warranty and service contract work will be carried out by a Vernacare approved technician.

1 Specifications

1.1 Capacities and usage

The “Vernacare Vortex +” macerator will dispose of a maximum of four “Vernacare” disposable products such as bedpan liners, bottles etc. together with their contents in a single cycle. **Please note due to their physical size only two Vernacare wash bowls may be disposed of per cycle.**

Products should be placed in the Vortex + one at a time and should not be stacked inside each other.

Do not stack products inside each other or attempt to dispose of more than four items in a single cycle as this will impair the effective operation of the machine and in severe cases, may cause the motor to stall. It is considered good practice to operate the machine each time a utensil is placed into the machine.

Do not place string, wipes, plastic or metal items inside the machine as these may damage components. **Note: Maceratable wipes that comply with AS/NZS 5328:2022 can be disposed of in the Vortex + macerator.**

1.2 Dimensions

The dimensions of the “Vernacare Vortex +” are shown on page 9 (Figure 1)

1.3 Handling

The weight of the “Vernacare Vortex +” complete with pallet and packaging is 83 kg (machine only 72 kg). The “Vernacare Vortex +” should be moved to the point of installation by fork, pallet or sack truck whilst still attached to the pallet provided.

1.4 Electrical specification

The machine is supplied with a 3-meter length of 1.5mm flex, which shall be connected to either:

230 Volt Machine – 16 Amp MCB to BS EN60898 Type C or alternatively fused 16 Amp to BS EN60269-1. An appropriate I.E.C Approved 16 Amp isolator shall be installed in both cases.

110 Volt Machine – 16 Amp MCB to BS EN60898 Type C or alternatively fused 16 Amp to BS EN60269-1. An appropriate I.E.C Approved 16 Amp isolator shall be installed in both cases.

It is recommended that the disposal unit is supplied by a dedicated circuit.

Where supplementary protection is provided by an RCD/RCBO, this should be rated at 100mA.

Note: The machine *should not* be switched off at the mains supply in mid-cycle except in case of emergency, as this will impair the effective operation of the machine and may cause damage to the components.



WARNING:

Under NO circumstances should the machine be dismantled or worked upon without first fully isolating the machine from the electrical supply.

1.4.1 Motor

1.1 KW; 3 Phase; 220-240v 50Hz/ 380-420v 50Hz; IP55; D90 frame size. Rating at peak load 4.57 amps (nominal).

1.4.2 Invertor

AC invertor with either 110v or 230v supply voltage, 230v motor output and utilising current monitoring.

1.4.3 Pump

0.27 kW; 24vdc; 50 cycles. 40 l/min at 5 lbs/in². Protected by a 5 amp fuse.

1.5 Water requirements

Inlet supply: Cold water **ONLY** with flow rate of 18 l/min (4 gals/min) nominal. Nominal overall usage; 25 litres (+/- 10%) per cycle.

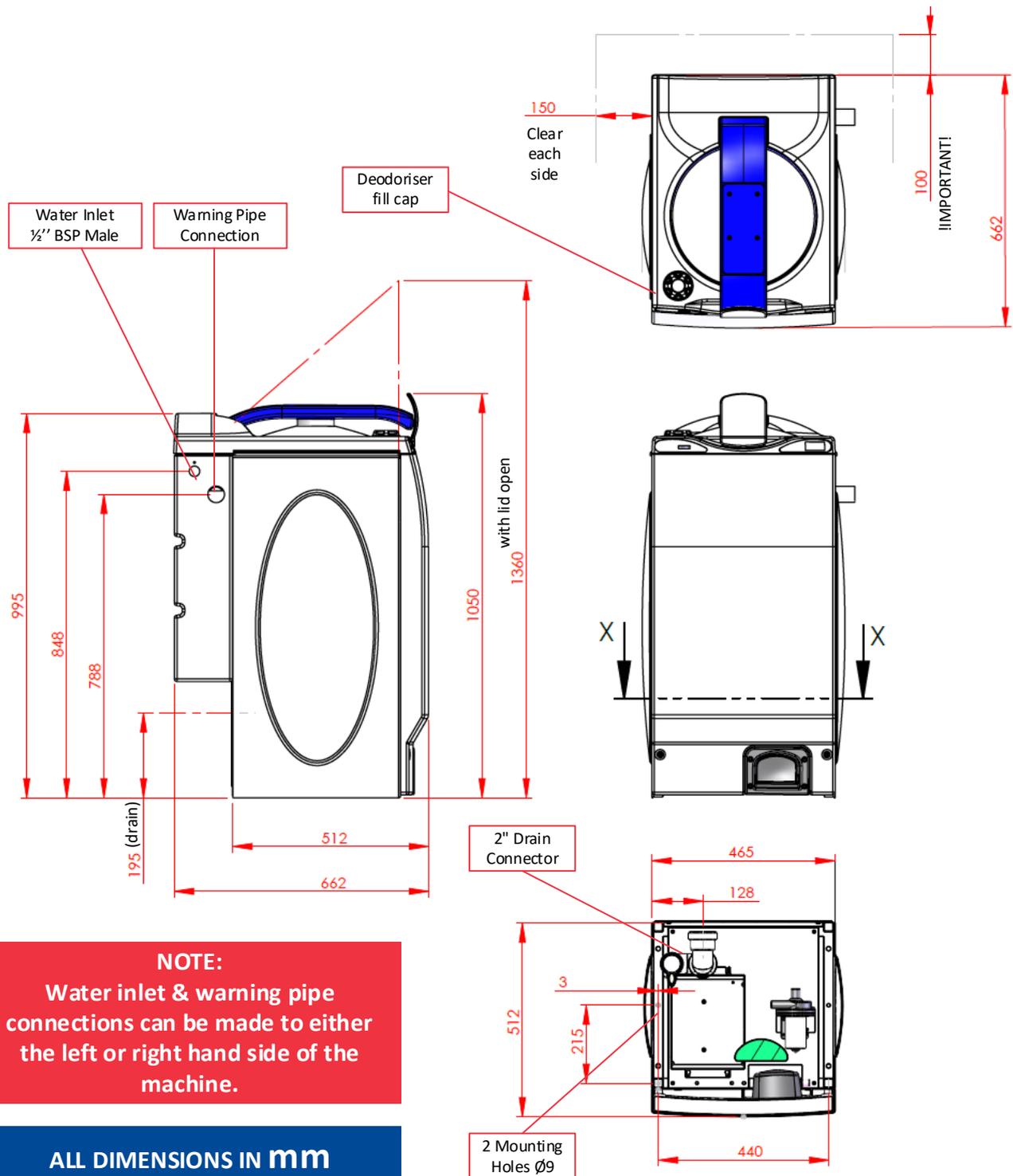
1.6 Drainage

A 2 inch/ 50mm P Trap compression fitting to be connected either directly, or via a swept bend, to a standard 2in/50mm drain pipe with a 1 in 25 or suitable fall into a soil drain.

A 1 1/4 inch/32mm tank connector is supplied, which should be used to connect the water tank warning pipe to a separate drain line, according to the relevant water regulations.

A standard warning pipe installation kit is available. Contact Vernacare Customer Care Department for details.

Dimensions of the Vernacare Vortex +



NOTE:
Water inlet & warning pipe connections can be made to either the left or right hand side of the machine.

ALL DIMENSIONS IN mm

2 Installation / Commissioning

Installation

Note: Installation of this equipment should only be carried out by a suitable qualified person.

2.1 Siting and fixing

The “Vernacare Vortex +” disposal unit should be positioned adjacent to the following:

- a) A suitable power supply point.*
- b) An adequate water supply line.
- c) A suitable drainage connection.

Check the floor area is firm and level. The unit **must be bolted down** using the holes provided. Mark out the bolt positions on the floor and fit bolts utilizing the dimensions given in Figure 1.

Ensure that adequate space is maintained at each side of the Macerator to allow for access. Vernacare recommend a gap of 6” - 8” (150 - 200mm) per side and 4” - 5” (100 - 125mm) away from the wall at the back.

Important- To comply with **UK WRAS regulations** sufficient clearance must be provided to allow water to freely discharge from the water tank overflow weir.

Check that the unit is level in both directions.

230 Volt Machine – 16 Amp MCB to BS EN60898 Type C or alternatively fused 16 Amp to I.E.C 60269-4. An appropriate I.E.C Approved 16 Amp isolator shall be installed in both cases.

110 Volt Machine – 16 Amp MCB to BS EN60898 Type C or alternatively fused 16 Amp to I.E.C 60269-4. An appropriate I.E.C Approved 16 Amp isolator shall be installed in both cases.

Where supplementary protection is provided by an RCD/RCBO, this should be rated at 100mA.

For all installations, an I.E.E. approved disconnection device must be fitted to the final installation. This device shall be positioned in close proximity to the Vortex and within easy reach of the operator & shall also be clearly marked as being the disconnecting device for the machine.

For installations where the height of the existing drain causes difficulty a plinth is available which may be utilised in order to raise the height of the Vortex so that better alignment is achieved.

Please contact Vernacare for further information

2.2 Plumbing

2.2.1 Water supply

The machine should be connected to a suitable cold water supply as follows:-

The connection to the machine water tank is made at the upper rear left or right hand side corner of the machine. It is a standard connection to a 1/2 inch BSP float-type cistern valve. This can be made in rigid or flexible piping, according to customer preference. Flow rate should be 18 litres per minute (4 gallons/minute) minimum, into the water tank, which holds sufficient water for a complete cycle.

Note: The inlet flow valve is supplied already fitted with a flow restrictor in place. The restrictor should be left in place on tank fed installations with heads above 50ft or mains fed installations with pressures above 1.5 bar (25psi). In all other circumstances the flow restrictor is not required.

2.2.2 Drain connection

The “Vernacare Vortex +” is fitted with a 2 inch/50mm ‘P’ Trap. In order to connect to the drain, it is necessary to cut a minimal clearance hole in the plastic drain access cover located at the rear of the machine below the water tank. It is important to ensure that the drain access cover is fitted so as to prevent access to internal electrical components.

The drain is secured by tightening the compression fitting on the ‘P’ Trap onto the inserted plastic pipe. The free area below the water tank allows for the fitting of a swept bend if required.

2.2.3 Overflow - Warning Pipe

The Vortex Is supplied with a 32mm (1 ¼") tank connector which should be installed using one of the predrilled holes in either the Left Hand side or Right Hand side of the water tank. It is Important that any discharge from the warning pipe is visible.

A standard warning pipe installation kit is available. Contact Vernacare Customer Care Department for details.

Points to Watch

- Ensure that the supply line to the unit is at no point less than 15mm or larger is available head is low.
 - Ensure that the water supply cannot be starved by any other fittings.
 - Fit an easily accessible, full way isolating valve close to the unit.
- For installations with dirty water supplies it is recommended that an in-line filter is fitted.
- Ensure that the route taken to soil drain is the shortest, with minimum number of bends. If necessary, use long radius or 'swept' bends - never short or 90° elbows.
 - The waste must be run separately to the soil stack or drain.
- Ensure that there is a fall of a minimum of 1 in 25 or a sufficient fall to maintain a self-cleansing velocity.
 - Provide easy access for Roding.
- Ensure a clean run inside the pipework - leave no burrs or reducing shoulders.
- With plastic pipework, ensure that there is no reduction in the bore size and that there is adequate support for horizontal runs to prevent sagging. Remember, ceiling voids can get very warm.
 - Avoid running the drain line near or across hot water pipes.
 - Anti-syphon precautions should be in line with general practice.
 - Ensure that the discharge from the warning pipe is visible.
- Warning pipe arrangement must include an air break prior to a connection to a drain.
 - Waste must be run separately to soil stack or drain.
 - Do not reduce the diameter of the warning pipe at any point.

2.3 Electrical

2.3.1 Single-phase electrical system (230v, 1 Ph, 50 HZ) (110v, 1 ph, 60 HZ)

The machine is supplied with a 3 metre length of 1.5mm flex to BS6500 which shall be connected to:

- *230 Volt Machine – 16 Amp MCB to BS EN60898 Type C or fused 16 Amp to IEC 60269.*
- *110 Volt Machine – 16 Amp MCB to BS EN60898 Type C or fused 16 Amp to IEC 60269.*

Notes:

1. All electrical installation to comply with current I.E.E. regulations.
2. Mains supplies to be protected by:
1 Phase 230v 16 Amp approved I.E.C. fuse.
1 Phase 110v..... 16 Amp approved I.E.C. fuse.
3. For all installations, an I.E.E. approved disconnection device **must** be fitted to the final installation. This device shall be positioned in close proximity to the Vortex and within easy reach of the operator & shall also be clearly marked as being the disconnecting device for the machine.



WARNING:

Under NO circumstances should the machine be dismantled or worked upon without first fully isolating the machine from the electrical supply.

2.3.2 Back-up generator tests / mains electrical supply surges.

Damage to internal electrical components of the Vortex macerator can occur as a result of voltage surges / spikes occurring in the electrical supply to the machine. The likelihood of such damage occurring is increased when frequent testing of back-up electrical supplies are carried out.

To prevent such damage, Vernacare recommends that transient voltage suppressors (in accordance with IEC class 3 surge protection) be installed in the electrical supply to the machine.

2.4 Environment

Indoor use only. Altitudes up to 2000m. Temperatures 5°C to 40°C.

Maximum relative humidity 80% for temperatures up to 31°C, decreasing linearly to 50% relative humidity at 40°C.

Mains supply voltage fluctuations not to exceed +/- 10% of nominal voltage.

2.5 Commissioning

After installation, to ensure warranty validity the machine should be commissioned by a Vernacare technician OR in the case of an overseas installation, by a Vernacare approved technician. The machine should not be run until after this check has been done.

Important

The machine MUST be bolted down before use. The machine should be run once - empty - to prime the pipework, diaphragm valve, deodoriser feed etc.

Note: For warranty, service or repair please quote the machine serial number which can be found clearly marked upon the rating plate which is positioned on the RH side, bottom front of the machine.

2.6 Warning labels and icons – explanations



Please refer to the technical manual prior to installation, maintenance or operation of this equipment.



Symbol indicates presence of 230v 50hz/ 415v 3phase 50hz electrical supply.



Start Cycle – Press this button to start the machine. An auto-start option is also available. Contact Vernacare for more information.

2.7 Display screen icons and warning messages – explanations

ERROR	DESCRIPTION
RUNNING	The machine has been started and is running through its cycle.
END	The machine has finished the cycle and is ready to open.
BLOCKED BLADES	The motor inverter has defaulted to overload due to a blockage of the machine cutter blades.
BLOCKED DRAIN	The pressure transducer has sensed an over pressure in the chamber due to a blockage of the drain outlet.
LOW WATER	There is insufficient water in the water supply tank.
POWER FAIL	There has been an interruption to the mains power supply/cycle.
LID SEAL FAILURE	The lid-seal pressure switch has detected low pressure in the lid seal.



The motor is running and the cutter blades are rotating.



The water pump is running.



The deodoriser reservoir is empty.



The outlet diaphragm is open.



The outlet diaphragm is closed.



The water tank reservoir level is low.



The water tank reservoir is full.



The lid is open.



The lid is closed.

BLOCKED DRAIN

The drain is blocked.



The foot sensor has been operated.

(For details of the fault finding guide see section 14 page 29).

2.7.1 Cycle Counter

At the end of each cycle the LCD screen will briefly display the TOTAL cycle count for the machine and also the SERVICE count which is the number of cycles since the machine was last serviced.

The TOTAL cycle display counts every machine cycle and is not resettable (unless the machine is reprogrammed).

The SERVICE count is reset by the engineer when the machine is serviced. The service count will also trigger a "Service" message on the LCD display once 20,000 cycles have been completed since the last service visit.

3 General Description

3.1 General description

The “Vernacare Vortex +” disposal unit is designed to operate within a 2-minute cycle using 24 litres +/-10% of water. The machine can dispose of up to four ‘Vernacare’ disposable single- use products, at one time.

Disposable single-use products are placed within the hopper. Activation of the foot sensor causes the lid to descend and lock when in the fully closed position. A compressor will then inflate the molded silicone seal profile until it meets the side wall of the lid, effectively sealing the machine.

Sensors in the lid actuator and lid lock ensure that the lid is fully closed & physically locked. Failure or loss of signal from either sensor will prevent / stop the cycle. Once the lid is fully closed and locked the cycle is initiated automatically, at which point the machine will give an ‘audible sound’ and the cycle will commence

The display screen will then indicate the machine is ‘Running’ and the icons at the bottom of the screen will show the status of operation. (See section 2.7)

In the event of low water level, blocked blades or power failure, the fault will be clearly indicated upon the display screen and the cycle stopped. The Vortex+ will remain in this condition until the fault is cleared by following the instructions on the display screen.

The 2-minute cycle is controlled by a microprocessor, which controls the operation and timing of the water pump, the cutter motor and the inlet, outlet and deodoriser solenoid valves.

Shortly after commencement of the cycle, the water pump starts to take water from the reservoir tank and pumps it to the following areas:

- a) **The lid spray**, which provides a curtain of water, which washes over the lid and tub sides and provides the bulk of the ‘tub fill’ water.
- b) **The mechanical seal flush**, which flushes and lubricates the faces of the mechanical seal to prevent ingress of pulp fibres into the mechanical seal cavity.
- c) **The drain diaphragm valve**, where water is fed through the non-return and inlet solenoid valve to the back of the drain diaphragm valve, water outlet is shut off by the normally closed outlet solenoid valve, thus developing pressure expands the drain diaphragm valve to form a seal.

The combined water from a, b and c above enters the tub whilst the pump runs for a pre-set time period to put 12 litres (+/- 10%) of water into the tub.

When the outlet valve has closed and the volume of water is building up in the tub, the displaced air is vented away through the drain via the vent valve and non-return valve arrangement, i.e. the non-return valve prevents the egress of foul air from within the tub into the atmosphere.

With the pump switched off, the diaphragm valve remains sealed as the water behind it is restrained by the non-return and solenoid valves.

During the period when the pump is running, the cutter motor starts up via the inverter unit, and breaks up the products by a combined mechanical and hydraulic action into

small particles which can be easily flushed down the drain.

If the cutter motor is initially stalled by bottles blocking the blades, the inverter will reverse the blades and attempt to cut through the blockage again. This will be attempted three times before a 'Blocked Blade' fault is displayed. At which point the lid is to be opened and the blockage removed.

Approximately three-quarters of the way through the cycle the pump restarts to give a dilution flush of an additional 12 litres (+/- 10%) to the tub and its contents.

At the same time the inlet solenoid valve closes thus preventing additional pumped water from reaching the drain diaphragm, as the inlet solenoid valve is closed and the outlet solenoid valve opens which allows the pressurised water behind the drain diaphragm valve to dissipate. This allows the drain diaphragm to open and the contents of the tub to run to the drain.

During this period, the motor will initiate for a few brief seconds. This will dissipate any pulp particles from the blades and allow them to be washed to the drain.

Also at this point the deodoriser valve is opened and a small quantity of deodoriser is dispensed from the storage reservoir into the chamber removing any odours that may be present. In the event of the deodoriser reservoir being empty, the cycle will continue but the icon on the display will indicate the tank is empty and requires re-filling.

Vernacare recommend the use of Vernacare Vortex+ disposal unit deodoriser (902DL1000, 902DL2000, 902SD1000, 902SD2000).

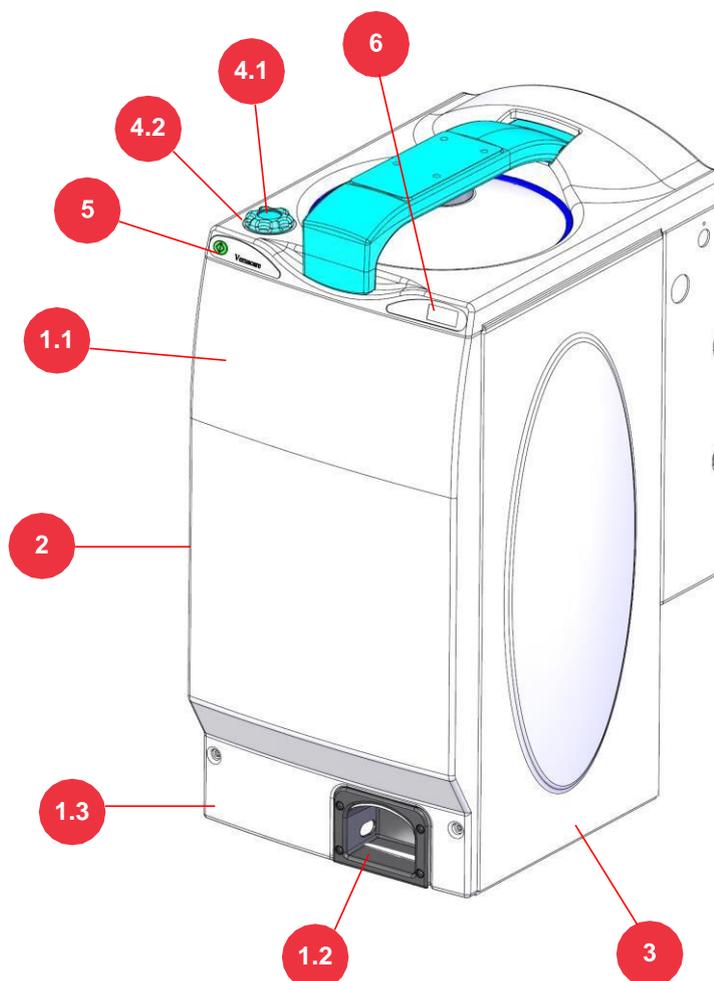
The water pump then stops, the outlet solenoid valve closes a second later and then the lid seal is vented through the 3/2 pneumatics valve. The cycle program then ends. The display will indicate 'End'.

The Vortex+ will remain in this condition with the lid locked until the foot sensor is operated. When the infra red beam is broken by the insertion of the operator's foot into the foot well at the bottom front of the machine, the lid lock disengages and the lid actuator opens the lid.

Vortex+ Normal Cycle Sequence

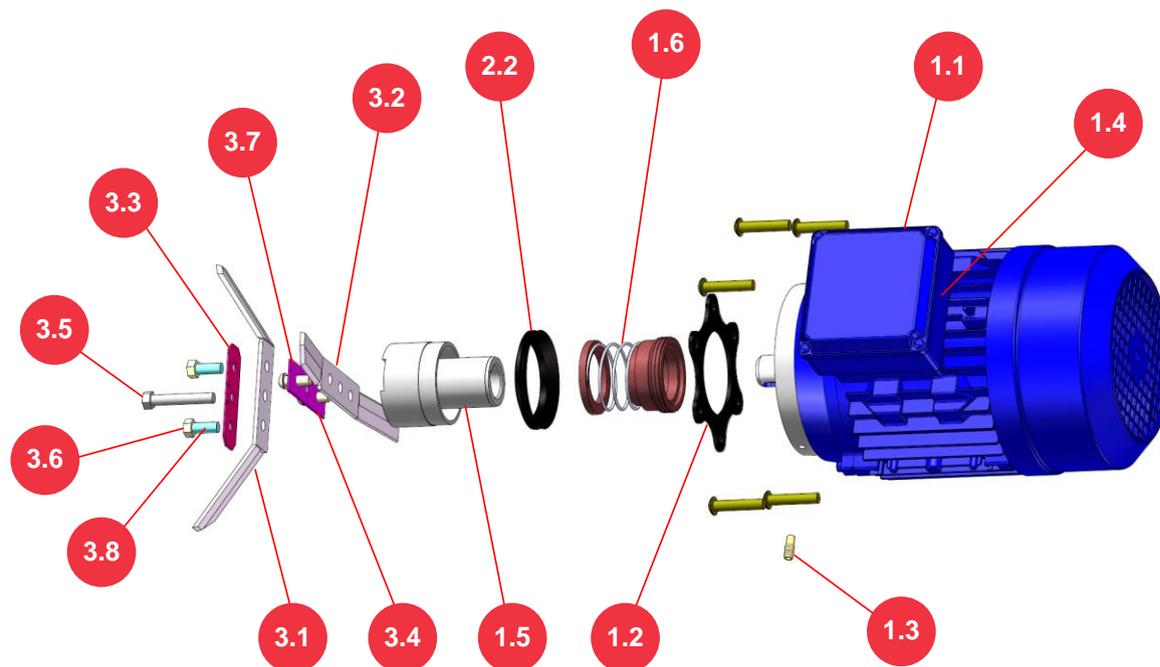
	Start Cycle	Step 1 (2s)	Step 2 (17s)	Step 3 (46s)	Step 4 (94s)	Step 5 (103s)	Step 6 (104s)	Step 7 (105s)	Step 8 (114s)	Step 9 (120s)	Cycle End
Pump	ON	ON	OFF	ON	ON	ON	ON	ON	ON	ON	
Motor Forward	OFF	ON	ON	ON	ON	ON	OFF	ON	OFF	OFF	
Motor Speed 1 (55Hz)	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Motor Speed 2 (66Hz)	OFF	OFF	OFF	ON	ON	ON	OFF	ON	OFF	OFF	
Deodoriser Valve	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	
Inlet Solenoid	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Outlet Solenoid	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON	
Air Compressor Pump	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
Air Valve Vent	Seal vents when foot sensor is operated										

SECTION 4: Outer Casing



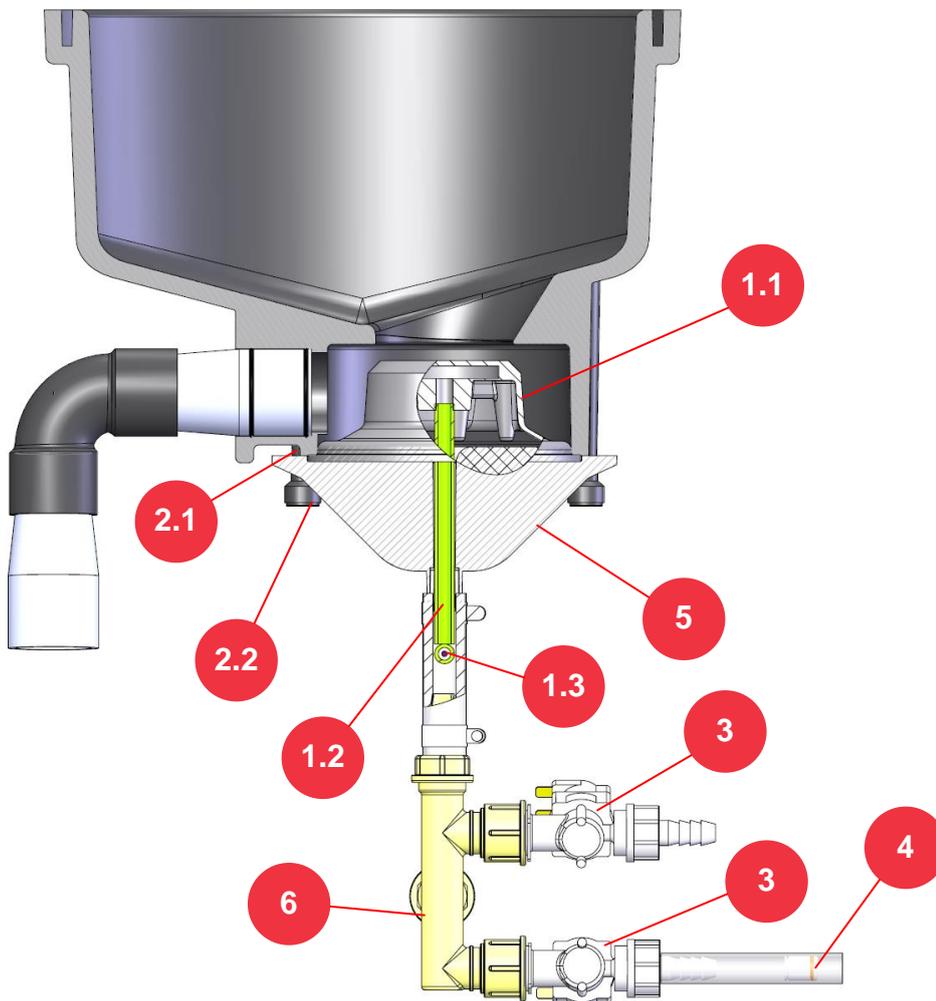
KIT	REF	PART DESCRIPTION	KIT NUMBER	ITEM NUMBER
1		Front Cover Kit	9207014	
	1.1	Front Cover		9200531
	1.2	Foot Sensor Housing		9200531
	1.3	M6 x 20 Panel Screw (x2)		9750023
2	2	RH Side Panel		9200610
3	3	LH Side Panel		9200611
4		Deodoriser Cap Kit	9207013	
	4.1	Deodoriser Tank Cap		9200206
	4.2	Filler Cap 'O' Ring		9200209
5	5	Start Switch Keypad		9200534
6	6	Display Screen		9200819

SECTION 5: Cutter & Motor



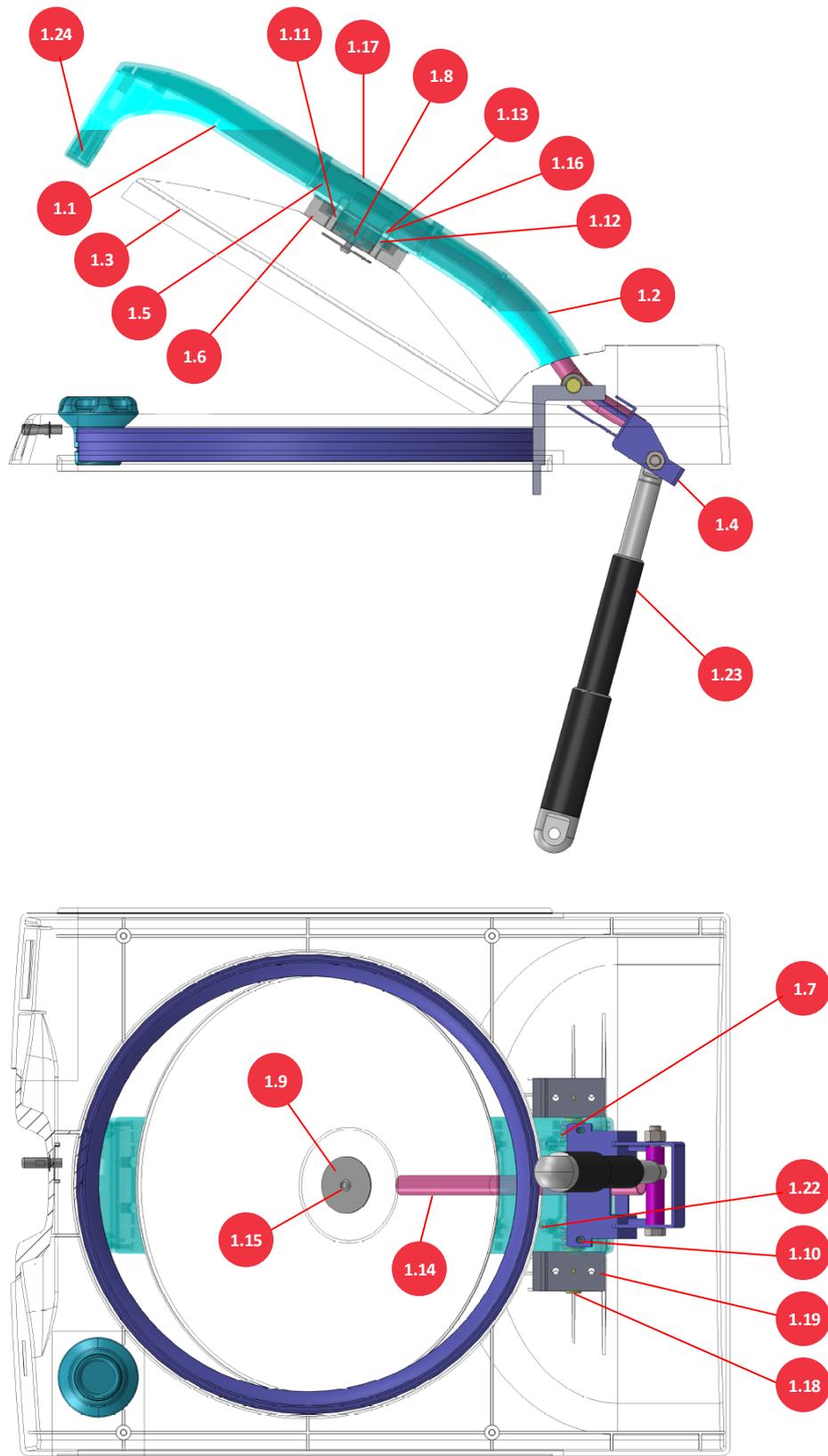
KIT	REF	PART DESCRIPTION	KIT NUMBER	ITEM NUMBER
1		Vortex Motor Kit	9207004	
	1.1	Electric Motor 230V/400V 3Ph 50Hz		9200424
	1.2	Motor Gasket		9220077
	1.3	Barbed Fitting		9750100
	1.4	Vortex Motor Cable		9200693
	1.5	Cutter Motor Adaptor		9200402
	1.6	Mechanical Seal		9753005
2		Vortex Mechanical Seal Kit	9207006	
	(1.6)	Mechanical Seal		9753005
	2.2	V-Seal		9753000
3		Vortex Blade Kit	9207015	
	3.1	Top Cutter Blade		9200418
	3.2	Bottom Cutter Blade		9200417
	3.3	Cutting Blade Locking Plate (Tab Washer)		9753011
	3.4	M8 x 20 Hex HD Screw x2		9750077
	3.5	M8 x 50 Hex HD Screw x1		9750006
	3.6	M8 x 35 Button HD Screw x2		9750075
	3.7	Fibre Gasket		9753010
	3.8	D8 Spring Washer x2		9750033
4		Cutter Motor Assembly Kit	9207005	

SECTION 6: Diaphragm Valve



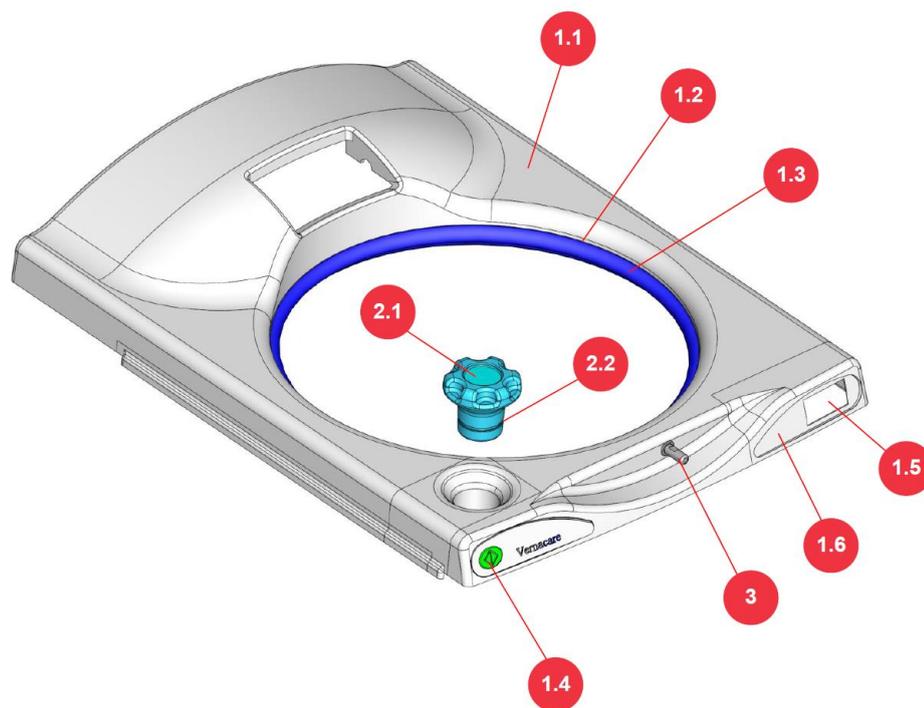
KIT	REF	PART DESCRIPTION	KIT NUMBER	ITEM NUMBER
1		Diaphragm & Spring Kit	9207012	
	1.1	Diaphragm		9200304
	1.2	Diaphragm Spring		9200333
	1.3	Retaining Pin		9750085
2		Diaphragm Fastening Kit	9207016	
	2.1	Grub Screw x 8		9200326
	2.2	Three Lobed Nut x 8		9200327
3	3	Water Inlet/Outlet Solenoid Valves		9200724
4	4	Non Return Valve		9200726
5	5	Diaphragm Chassis		9200328
6	6	Plumbing Elbow		9207043

SECTION 7: Lid Arm Assembly



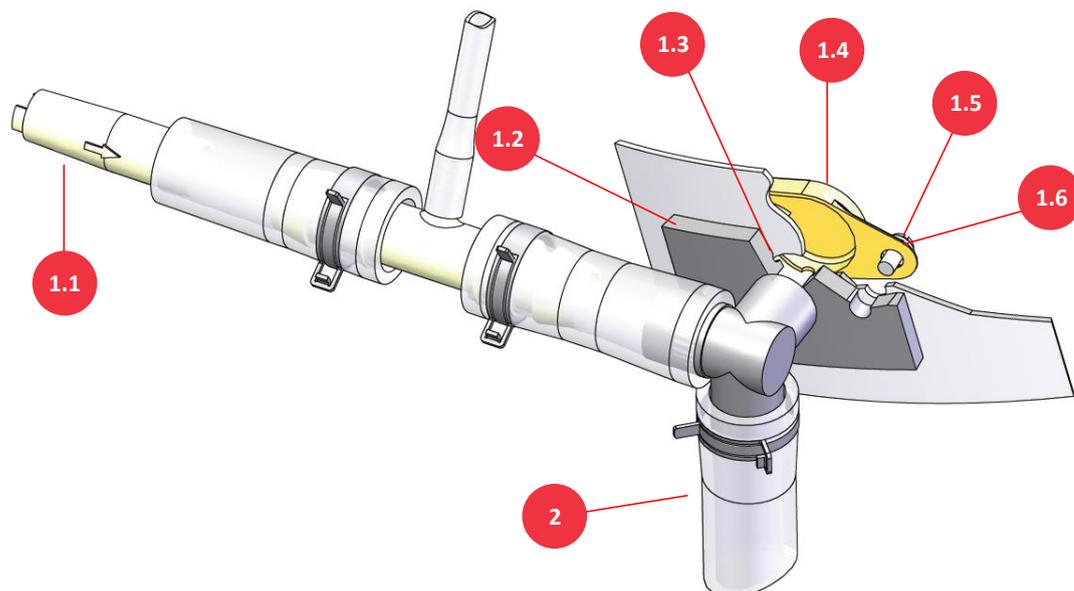
KIT	REF	PART DESCRIPTION	KIT NUMBER	ITEM NUMBER
1		Lid Arm Assembly Kit	9207062	
	1.1	Lid Arm Bottom		9200843
	1.2	Lid Arm Top		9200842
	1.3	Lid		9200351
	1.4	Extension Bracket		9200932
	1.5	Arm Seal		9200853
	1.6	Lid to Arm Seal		9200109
	1.7	Hinge Bush (x2)		9200146
	1.8	Press Lok Insert		9200115
	1.9	Lid Spray Washer		9200117
	1.10	Self-Tapping Screw (x2)		9200120
	1.11	Lid Spacer Short (x4)		9200122
	1.13	M5 Nyloc Nut (x4)		9750012
	1.14	Arm Inlet Pipe		9200162
	1.15	D8 Spring Washer		9750033
	1.16	D5 Plain Washer (x4)		9750011
	1.17	Lid Arm Label		9200860
	1.18	Arm Hinge Shaft (x2)		9200113
	1.19	Hinge Block (x2)		9200114
	1.22	Torx Head Self-Tapping Screws (12)		9200120
	1.23	Linear Actuator (not included in kit)		
	1.24	Neodymium Magnet		9200837

SECTION 8: Top Cover



KIT	REF	PART DESCRIPTION	KIT NUMBER	ITEM NUMBER
1		Top Cover Assembly Kit	9207061	
	1.1	Top Cover		9200380
	1.2	Inflatable Lid Seal		9200350
	1.3	Lid Seal Clip (not included in kit)		9200535
	1.4	Start Switch Keypad		9200534
	1.5	Display Screen		9200819
	1.6	Display Membrane		9200535
2		Deodoriser Cap Kit	9707013	
	2.1	Deodoriser Tank Cap (not included in kit)		9200206
	2.2	Filler Cap 'O' Ring		9200209
3	3	Sriker Bolt Kit	9200847	

SECTION 9: Hopper Vent Arrangement



KIT	REF	PART DESCRIPTION	KIT NUMBER	ITEM NUMBER
1		Vent Connector Kit	9207007	
	1.1	Non Return Valve		9757030
	1.2	Vent Connector		9200334
	1.3	Gasket		9210093
	1.4	Vent Deflector		9200325
	1.5	M4 x 8 Lg Slotted Pan Head Screw (x2)		9210062
	1.6	M4 Nylon Washer x2		9752022
2	2	16mm PVC Tubing 1.5m	9200721	

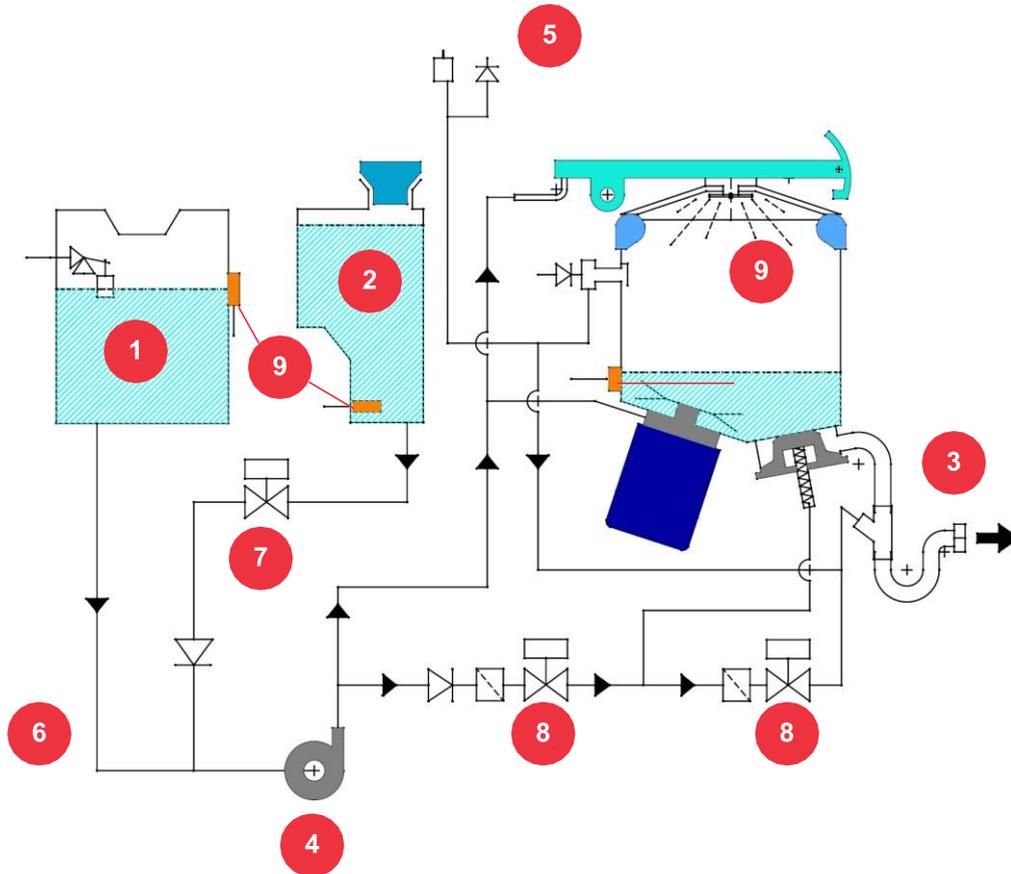
Detail of Vent Connection

Situated at the front top right hand side of the hopper is a vent connector (2) which allows the foul air which is displaced whilst water is filling the hopper, to be vented into the drain.

The vent connector is fitted with a non - return valve (push fit into connector with the arrow on its body pointing into the connector). This valve prevents air from being expelled to atmosphere during water filling but allows air to be drawn into the hopper during the drain cycle when a vacuum would otherwise be created.

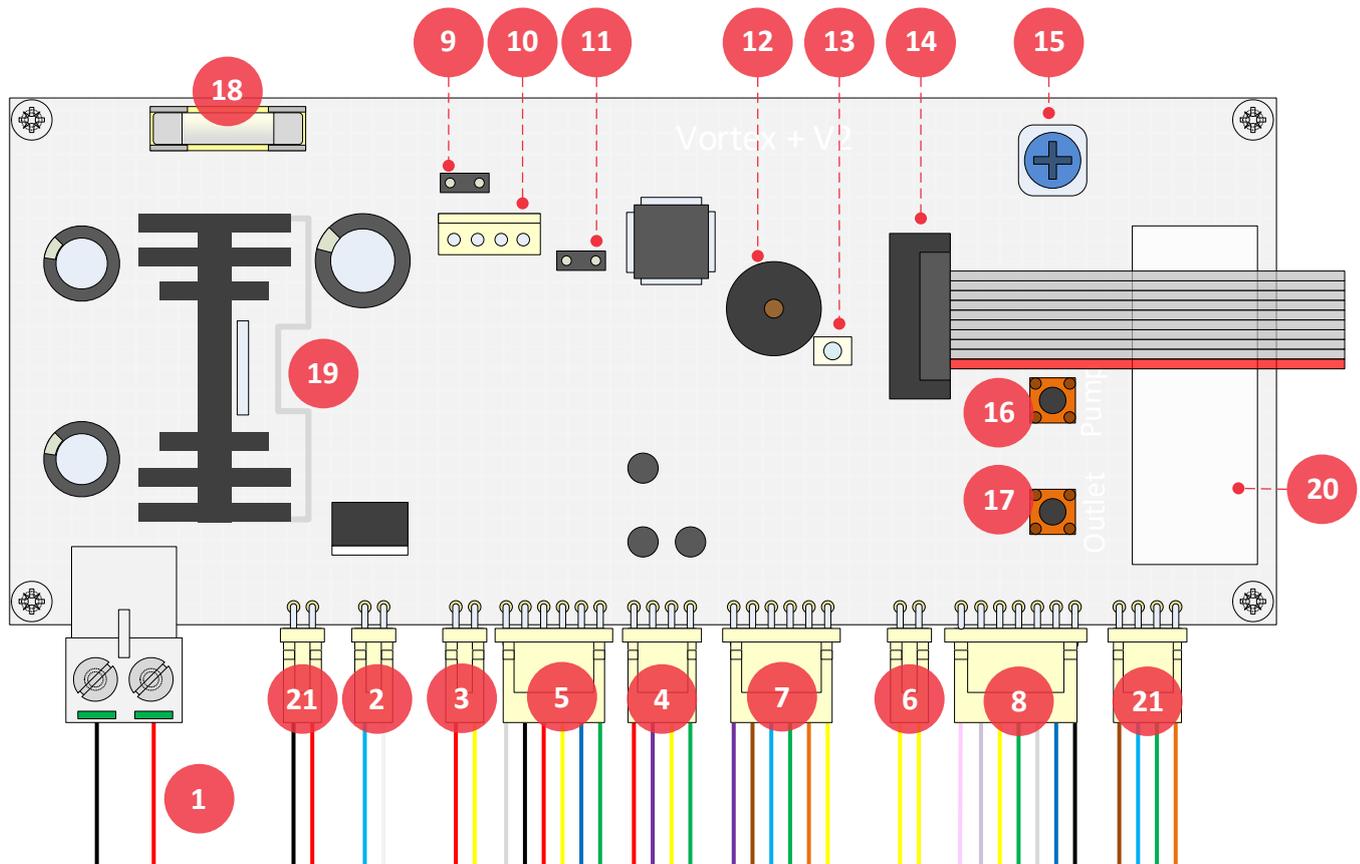
The connector is secured to the hopper via two M4 screws and two nylon washers, to prevent leakage an O-ring is used to seal the connector to the hopper and is located in a groove on the inner face of the connector

SECTION 10: Water Distribution



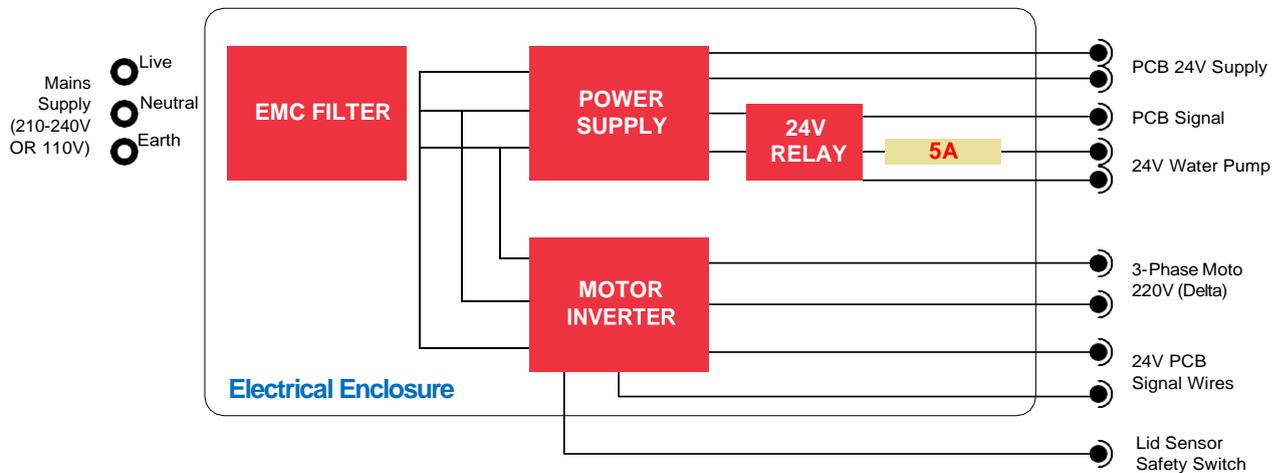
KIT	REF	PART DESCRIPTION	KIT NUMBER	ITEM NUMBER
1	1	Water Tank Assembly Kit	9207010	
	N/A	End Caps (x2)		9757047
	N/A	Blank Plug		9757034
	N/A	Hydroflo Side Entry Float Valve		9200204
	N/A	Water Tank		9200846
	N/A	No.6 x ½ Pozi Screw Button Head		9200212
	N/A	Float Valve Bracket		9200211
	N/A	M4 Plain Washers		9200540
2	2	Deodoriser Tank Kit	9207009	
	N/A	Deodoriser Tank		9200942
3	3	2" P trap Kit	9207008	
	N/A	Hose Clips 60mm		9210165
	N/A	Drain Connector		9757001
	N/A	2" P Trap		9757002
4	4	Water Pump	9200529	
5	5	Anti-Syphon Valve	9200875	
6	6	Pump Inlet Assembly	9200728	
7	7	Deodoriser Solenoid Valve	9200725	
8	8	Water Inlet/outlet Solenoid	9200724	
9	9	Capacitive Sensors	9200828	

SECTION 11: PCB



REF	DESCRIPTION
1	24v PCB Power Supply Cable
2	Compressor Cable
3	Concens PCB Cable
4	Solenoid Valve (Water Only) Cable
5	Actuator Cable
6	Start Button Cable
7	Data Cable
8	IFM Terminal Cable
9	Auto-Start Feature Jumper Plug
10	Software Fob Connection Point
11	Service (Cycle Count Reset) Connection Point
12	Audible Buzzer
13	Pulsing LED PCB Power Indicator
14	E-Paper Ribbon Cable
15	Pressure Switch Potentiometer
16	Manual Pump Button
17	Manual Outlet Button
18	5A Fuse
19	5V Voltage Regulator & Heat Sink
20	Serial Number Marking Area
21	3/2 Pneumatics Valve Cable
22	Pressure Transducer Cable

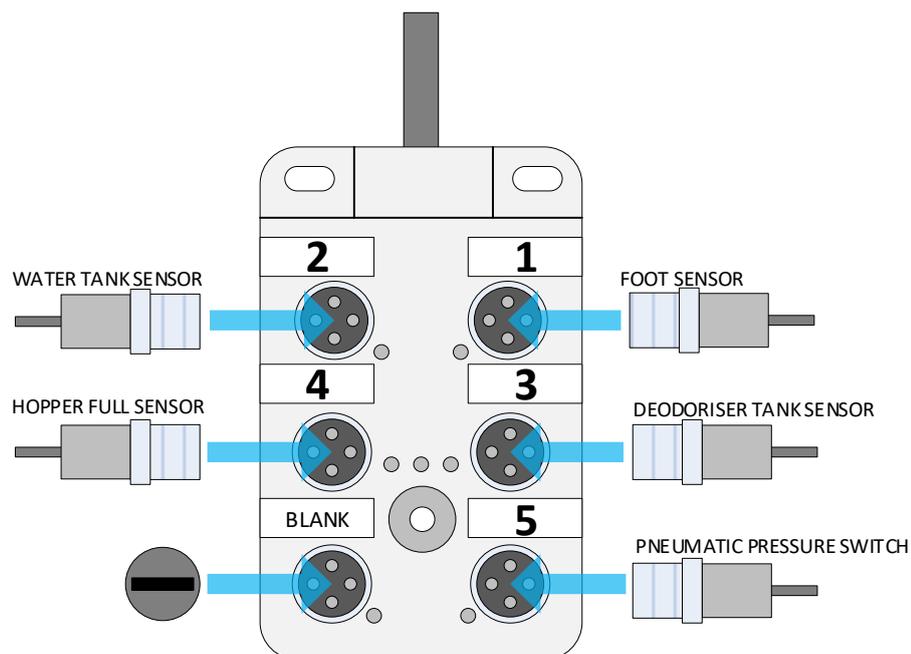
SECTION 12: Electrical Enclosure



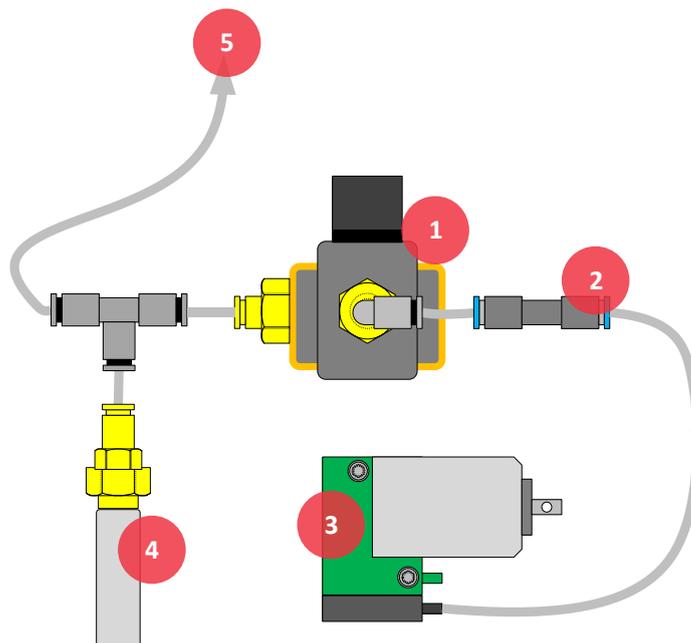
SECTION 13: Sensor Terminal

Detail of Sensor Terminal

The terminal is located on the underside of the motor support plate. It acts as a hub to connect 5 sensors to the PCB via M12 jumper plugs. There are 6 connection points on the terminal, one of these is currently unused and remains blanked off. The correct orientation of the jumper cables is as below.



SECTION 14: Pneumatic Assembly Reference Diagram



REF	DESCRIPTION	ITEM NUMBER
1	3/2 Valve	9210181
2	Non-Return Valve	9210188
3	Compressor Pump	9210131
4	Pressure Switch	9210137
5	Inflatable Lid Seal	9200350

SECTION 15: Additional Items & Kits

PART DESCRIPTION	KIT NUMBER	ITEM NUMBER
Vortex + PCB		9200895
Water Pump		9200529
Power Supply Unit 230V (UK)		9200940
E-Paper Display Screen		9200819
Start Switch Keypad		9200534
Electronic Rotary Latch		9200869
Power Supply Unit 110V (Outside UK)		9200941
Vortex + Actuator Controller		9200855
Solenoid Diode kit	9207019	
Water & Disinfectant Cable Kit	9207020	
PCB Power Cable Kit	9207022	
Water Pump Diode Cable Kit	9207023	
Installation Kit	9207025	
Vortex + Program Fob	9200896	

Appendix A

Engineer's manual pump and outlet pushbuttons

Sited on the face of the PCB within the main electrical panel are two manual push buttons. The first button is the drain outlet valve manual opening. The second button is the pump manual run. The button locations are shown to the right of the Vortex PCB Image below.

In the event of the machine being in failure mode during the cycle, often the tub will be still full of water and or product due to the drain outlet being closed. Operating the manual outlet pushbutton will open the drain outlet diaphragm and allow the contents to empty into the main drain. Additionally the water pump can be run manually to help with the drainage.

If the water tank is full during a cycle when in fault condition, the tank can be drained to allow work to be carried out on the water system. Firstly the water tank has to be isolated from the water supply to stop the water tank from re filling. The manual `pump` pushbutton can then be pressed, this will pump out any water from the tank and out in to the main drain.

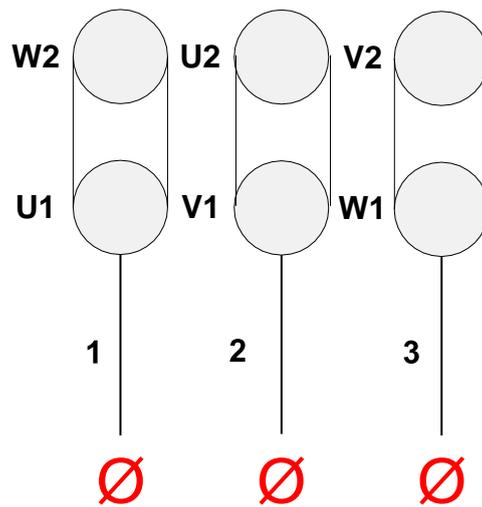
Maintenance can then be carried out on the pipe system with only a minimum of water left. Both push buttons are identified in the PCB section (12).

Do not run the pump dry, as this will result in damage to the pump seals.

Appendix B

Diagram for Motor Terminal Wiring

Motor wired in Delta for 220 volt input from the invertor unit.



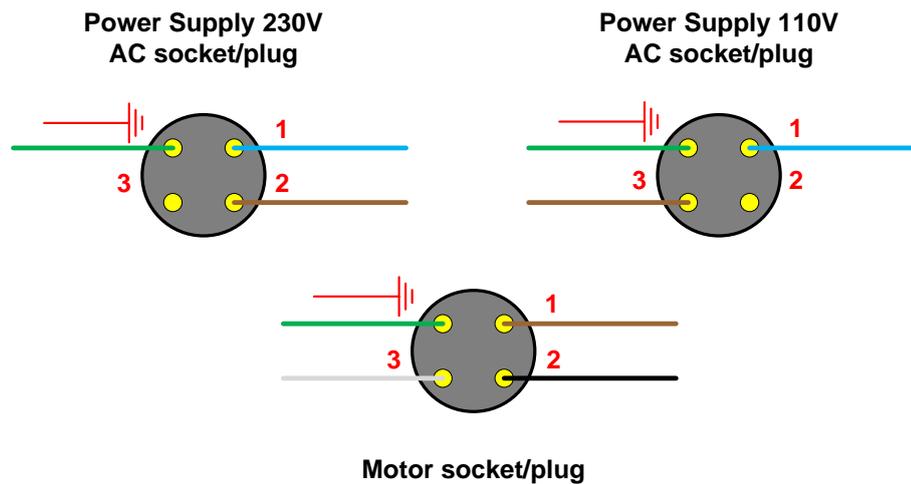
Voltage amps check for Vortex Macerator.

Note: Readings are for a product load of four bottles.

VOLTAGE	PHASE	NOM RUNNING LOAD	MAX LOAD	MAX PEAK
110	1	2.5 to 4.8 amp	6.1 to 12.7 amp	44 amp
200	1	2.9 to 3.5 amp	6.3 to 8.8 amp	39 amp
220	1	2.8 to 3.2 amp	5.3 to 9.1 amp	41 amp
230	1	2.4 to 3.1 amp	5.2 to 8.1 amp	44 amp
250	1	2.8 to 3.7 amp	5.3 to 7.9 amp	44 amp

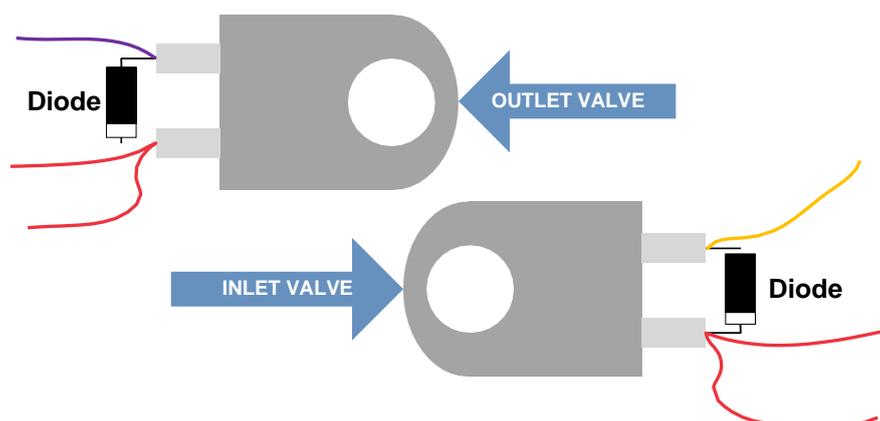
Appendix C

Diagram for motor electrical box plug and socket connections



Appendix D

Orientation of Diodes for drain inlet and drain outlet solenoid valve coil terminals



Appendix E

A Suggested periodic planned maintenance

- 1 Remove all panels (clean as required, see cleaning instructions below).
- 2 Clean the lid seal & check for wear or damage.
- 3 Check that the lid arm lock operates effectively via the foot operation.
- 4 Check the blade for damage and free rotation.
- 5 Check the condition and correct positioning of the V- seal on cutter adapter (ensure lip is in constant contact with hopper bottom). Vortex+ must be electrically isolated whilst carrying out this operation.
- 6 Operate the machine - when pump stops (after approx. 30 sec) isolate the machine from power, open lid and check for correct water level in hopper (observe for approx. 5-10 seconds). Correct water level is level with the top of the hopper base +/- 12 mm.
- 7 Check the condition of the diaphragm valve, its seating and operation.
- 8 Check the non-return valve's operation, clean if required. i.e. if the water level is low within the hopper.
- 9 Check the solenoid valve's operation, clean if required. i.e. if the water level is low in the hopper.
- 10 Check all plumbing, pipe work and connections for leaks.
- 11 Check that the solenoid valve filters are clean.
- 12 Check for water at the seal flush pipe during the cycle and that the pipe is not blocked.
- 13 Check the operation of the tub vent assembly and small non-return valve.
- 14 Check the drain and overflow connections for leaks.
- 15 Check the operation of the water inlet float valve.
- 16 Check the operation of the deodoriser level switch.
- 17 Check the operation of the water-level switch (clean if required).
- 18 Remove and clean the external in-line filter (if fitted).
- 19 Check the drain pressure sensing unit operates correctly.
- 20 Check that the foot sensors are working correctly and operating the lid.
- 21 Check the connections to all electrical components.
- 22 Replace all panels.
- 23 Check the deodoriser tank level. Fill if necessary with Vernacare disposal unit deodoriser part numbers 902DL1000,902DL2000,902SD1000 & 902SD2000.
- 24 Run a full load test cycle.

B Cleaning Instructions

Wipe down external surfaces using Tuffie 5 wipes, Tuffie detergent wipes or detergent and water as required. Internal components can be kept clean by running a daily cleansing cycle (without product).



CERTIFICATE OF CONFORMITY

SAI Global hereby grants:

Ebos Group Pty Ltd

ABN 38 125 401 247

Unit 2A, 109 Vanessa Street, Kingsgrove, NSW 2208, Australia

Watermark Certificate of Conformity

Evaluated to:

WMTS 104:2018 - Appliances (miscellaneous)

"the WaterMark Licensee" the right to use or arrange the use of the WATERMARK as shown below only in respect of the goods described and detailed on the product schedule identified on www.saiglobal.com which are produced by the WaterMark Licensee or on behalf of the WaterMark Licensee* and which comply with the appropriate Standard referred to above as from time to time amended. The Licence is granted subject to the rules governing the use of the WATERMARK and the Terms and Conditions for certification. The WaterMark Licensee covenants to comply with all the Rules and Terms and Conditions.

This Certificate is issued by a JAS-ANZ accredited certification body. The Scheme Owner, Administering Body and Accreditation Body do not in any way warrant, guarantee or represent that the product the subject of this Certificate conforms to the WaterMark Certification Scheme Rules, nor accepts any liability arising out of the use of the product. The Scheme Owner disclaims to the extent permitted by law, all liability (including negligence) for claims of losses, expenses, damages and costs arising as a result of the use of the product(s) referred to in this Certificate.

Certificate No:WMKA25524

Issued: 17 July 2020

Originally Certified: 22 June 2012

Expires: 31 March 2024

Current Certification: 15 July 2020

Heather Mahon
Head of Global Technical Services
SAI Global Assurance



* For details of manufacture, refer to the licensee

The WaterMark is a registered certification trademark of Australian Building Codes Board ABN 74 599 608 295 and is issued under licence by SAI Global Certification Services Pty Limited (ACN 108 718 660) ("SAI Global") 880 George Street, Sydney NSW 2000, GPO Box 5420 Sydney NSW 2001. This certificate may only be reproduced in its entirety and remains the property of SAI Global and must be returned to SAI Global upon its request. Refer to www.saiglobal.com for the list of product models.



SCHEDULE TO CERTIFICATE OF CONFORMITY

SAI Global hereby grants:

Ebos Group Pty Ltd

Unit 2A, 109 Vanessa Street, Kingsgrove, NSW 2208, Australia

Watermark Certificate of Conformity

Evaluated to:

WMTS 104:2018 - Appliances (miscellaneous)

Model identification of the goods on which the WATERMARK may be used:

Model Identification	Model Name	Brand Name	Product Description	Date Endorsed
Compact	Vemacare Compact	Vemacare	Macerator	15 Jul 2020
Compact Plus	Vemacare Compact	Vemacare	Macerator	15 Jul 2020
Vortex	Vemacare Vortex	Vemacare	Macerator	29 Mar 2019
Vortex +	Vemacare Vortex	Vemacare	Macerator	24 Mar 2020

End of Record

Certificate No: WMKA25524

Issued Date: 17 July 2020

This schedule supersedes all previously issued schedules

* For details of manufacture, refer to the licensee

The WaterMark is a registered certification trademark of Australian Building Codes Board ABN 74 599 808 295 and is issued under licence by SAI Global Certification Services Pty Limited (ACN 108 716 869) ("SAI Global") 880 George Street, Sydney NSW 2000, GPO Box 5420 Sydney NSW 2001. This certificate may only be reproduced in its entirety and remains the property of SAI Global and must be returned to SAI Global upon its request. Refer to www.saiglobal.com for the list of product models.

