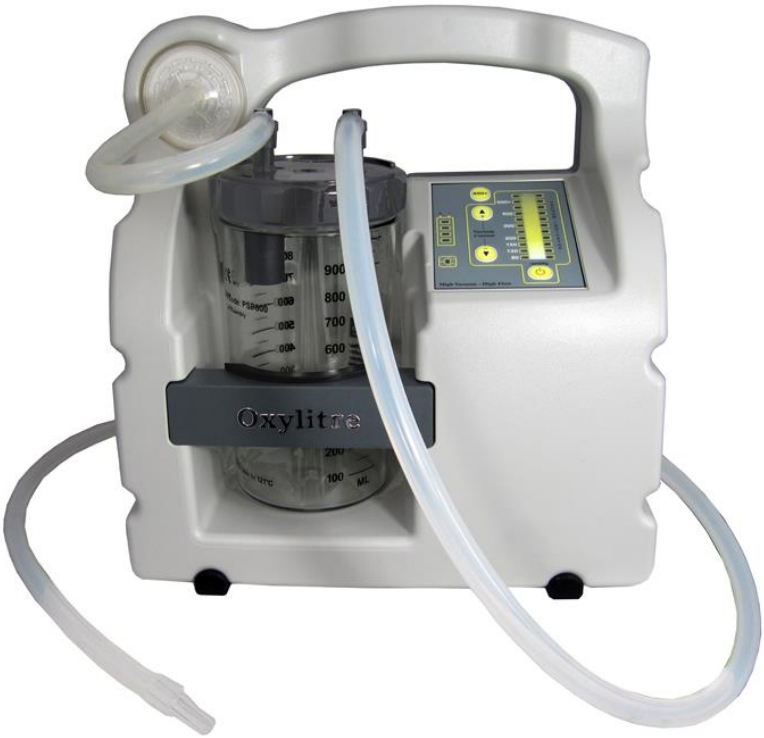
Oxylitre

HEALTHCARE EQUIPMENT

PSP Series "*petite elite*" Portable Suction Pump

Information for Use



1. Cautions

Please read these Operating Instructions carefully. This device is to be used by personnel fully trained in the use of medical suction equipment. Ensure that the suction unit is tested for Electrical Safety at least once annually.

To operate the suction unit correctly, ensure that the Operating Instructions in this document are followed. Ensure the cleaning procedure and safety precautions are followed to avoid the risk of an electrical shock. Contact our service department immediately if an electrical fault has been detected when using the suction unit.

The unit whilst in use is be placed in a position where ease of access is readily available to the mains and DC connection ports at the back of the unit.

Ensure that you check the contents of your package thoroughly before use.

Ensure the cable is neatly wrapped prior to moving.

Please avoid using the suction unit near other types of electrical equipment that are non-approved electrical medical devices that may release strong electromagnetic/radiated emissions.

Do not use any flammable agents near or on the equipment when in use.

Do not submerge the product in water or leave resting in puddles or severe wet environments.

Do not clean the suction unit unless the plug has been removed from the mains socket supply.

Do not rinse or use excessive amounts of water or fluid over the suction unit.

Do not remove the filters, receiver jar or tubing unless the suction unit has been turned off and the mains lead has been disconnected.

Do not stretch or pull the mains cable or make contact with any sharp implements that may penetrate the cable (e.g. carpet rail, protruding nails etc.).

Warning: Electrical Safety

The PSP Series suction may be operated from a 110-240 Volt mains supply.
DO NOT remove or open the main panels of the electrical suction unit for any reason (see section 5.6 for battery removal). If the unit fails to operate you MUST contact the Oxylitre Service Department for service recommendations.

Do not position the Portable Suction Unit in such a way that it is difficult to operate if disconnection is required.

The main panels on the product must only be opened by an Oxylitre Service Engineer or by qualified personnel

Warning: Material Compatibility*

The Oxylitre Jar and Lid supplied with PSP001 are manufactured from Polycarbonate. They should not come into contact with compounds such as Alkalis, Ammonia solutions & Amines that may be found in some strong disinfecting and sterilizing agents. Such agents can cause stress cracking.

Warning: Presence of Battery

Under no circumstances should the PSP be operated on mains **without the battery being connected**, even if discharged or otherwise not working. This could irrevocably damage the circuitry.

Contents

2. Introduction

The unit has been specifically designed to be fully portable, for field use with a rechargeable battery power. The Portable Suction Pump (PSP) Series is available with a variety of collection containers. The unit is also available as **High Suction-High Flow** and **Low Suction – High Flow** models. It has the ability to operate in Hospital, Care Home/Hospice Ambulance environments. The end user should determine which model best suits their application.
The Portable Suction unit incorporates a 12V NiMH, RoHS compatible replaceable battery pack, which allows the unit to operate for a period up to 1½ hours. The unit is light in weight, easy to carry and is available with a carry bag.
The robust design features a flame retardant case, with integral carry handle, a LED display visible from more than 1 metre and phosphorescent button to enable the use to see key functions in the dark. "The Petite" to be used in all their environments and more (Note: It has been tested to withstand an acceleration/deceleration of 20g, twice the Ambulance Standard requirement).

Without having to connect to any power source for up to a combined period of 1½ hours. The portable suction unit is operable from either an 110v - 240v ac. mains or a 12 - 28 v dc supply input. The unit is classified as a Class II, Type BF Electrical Medical Device.

The Oxylitre reusable receiver jar is fitted with a protective overflow float valve assembly. In the event of over filling the receiver jar whilst aspirating, the float valve assembly will automatically shut off the suction supply. Jars with liners also have cut-off devices.

Please note this device is **not** MR conditional.

A wall mounting docking station is also available for easy storage. It can incorporate the required recharging power cord so that the unit connects to the recharging power source automatically when the unit is mounted for storage.
The product is a fully rechargeable device and can be recharged from the following areas:
110V - 240V AC Mains power source.
12V - 28V DC power supply from an Ambulance/Road Vehicle or an Air Ambulance (the operating/charging of the unit from a supply voltage of 17V - 28V DC requires a white cable. This diverts the charging current to isolated circuitry).
Any of the above is available with a wall storage docking station power cable.

Medical Purpose

To aspirate bodily fluids and collect, not to be used for continuous drainage as defined by BS EN ISO 10079-1 i.e. not to be used for specific endoscopic use, closed system wound drainage or suction for permanent tracheostomy etc.

2.1 Pre-Use Inspection

Remove all packaging from your Portable Suction Pump, inspect all parts for any signs of damage and ensure all of the contents are there. If you see any signs or suspect that the unit may have been damaged, **DO NOT** use. Notify Oxylitre immediately.

2.2 Contraindications

None known

2.3 Warranty

The Company Warranty; in respect of durable goods (but not in respect of disposable goods) that such goods will correspond with their specification at the time of delivery and will be free from defects in material and workmanship for a period of 7 years from delivery (N.B. Warranty is 1 year for the battery and 3 years for the Oxylitre Jar).

Our full warranty statement is available on request.

2.4 Variants High Suction (for 1000ml Jars only)

I	Oxylitre Receiver Jar	PSP001
Ii	Hospira Receptal Canister & Liner	PSP002
Iii	SERRES Jar & Liner	PSP003
Iv	Vac Sax Canister & Liner	PSP004 (PSP004-BR without Jar)
v	Tubing Holder	"B" Suffix on Code

2.5 Variants Low Suction (for 100ml Jars only)

I	Oxylitre Receiver Jar	PSP001L
Ii	Hospira Receptal Canister & Liner	PSP002L
Iii	SERRES Jar & Liner	PSP003L
Iv	Vac Sax Canister & Liner	PSP004L
v	Tubing Holder	"B" Suffix on Code

3 Knowing your Portable Suction Pump

3.1 Using an Oxylitre Receiver 1000mL Jar

3.1.2 Rear Panel

3.1.3 Using a Hospira Receptal Canister and Disposable Liner

3.1.4 Using a SERRES Canister and Disposable Liner

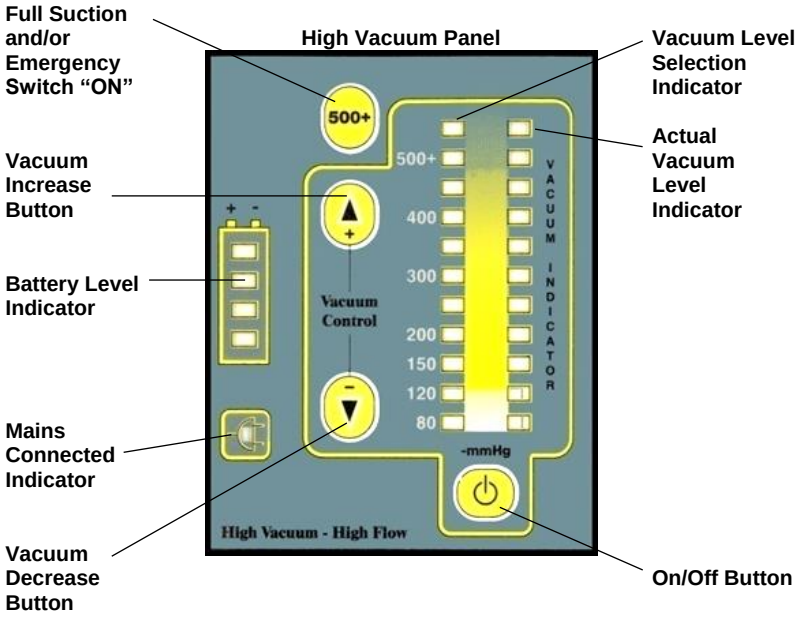
3.1.5 Using a Vac Sax Canister and Disposable Liner

4 Operating Instructions

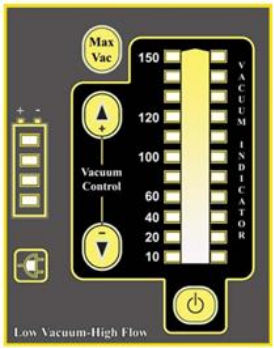
The Petite Elite Portable Suction Pump is intended to be used by and/or its use clearly directed by suitably trained personnel for medical suction purposes. Before use please read the cautions and check for any damage/breakage of equipment.

The tubing is to be routed as shown in section 3.

4.1 Operating Panel



Low Vacuum Panel



4.1.1 "On/Off" Button

Press the "ON" button and the unit will start and operate at the lowest suction level (80mmHg). **Note: When on MAINS after switching "OFF" wait 5 seconds before switching "ON" again (unit needs to re-set in this operating mode).**

4.1.2 Increase/Decrease Vacuum Button

To increase or decrease the level of vacuum, simply press either the increase (▲) or decrease (▼) button and the level will be displayed.

4.1.3 Emergency Switch On

When in an emergency scenario or where it is known that the highest vacuum level is required at an instant, the "500+" or "Max Vac" button can be pressed to give this instant requirement. Pressing the "500+" or "Max Vac" button will override the "On/Off" button or any pre-set level settings.

4.1.4 Pre-use Test

As a Pre-use Test, press the 500+ or Max Vac button and allow the unit to run for a few seconds then occlude the patient tubing/catheter. The right hand vacuum indicator lights will advance to the top setting in approximately 10 seconds.

This indicates that the pump is operating correctly. Note that if then kept occluded the vacuum top LED can 'pulse' down to the lower LED and then back again. This is normal and is due to the unit detecting the internal relief valve operating under this constricted volume condition. In ordinary use; connected to a container, this valve function is not detected by the unit.

Allow the vacuum to ('drain down') the vacuum after testing. Conduct testing on mains AND battery to check for battery function. If there is a leak in a jar seal (or disposable liner) for any reason and air can get into the system the test will become invalid.

Do not keep the tubing / catheter occluded (keeping the system under vacuum) and switch off then on. The unit may not reset and temporary pressure sensing paralysis could occur. In the event of this happening, the unit stalls on mains. To correct the situation switch off, allow vacuum to escape and disconnect from mains, reconnect and switch on again.

4.1.5 Vacuum Level Selection Indicator

When a vacuum level is selected the LEDs on the left will highlight the selected vacuum level.

4.1.6 Actual Vacuum Level Indicator

During aspiration the actual level of vacuum gained will be indicated on the vacuum level indicator. This column may increase and decrease rapidly as the level of suction may vary depending on the density of the fluid and/or if air is being aspirated. Vacuum indicator accuracy is ±10%.

4.1.7 Mains Connected Indicator

When connected to an external power source; whether for charging or direct use, this LED will light up green (red for models circa pre 3rd quarter 2011).

4.1.8 Battery Level Indicator

The battery level indicator LEDs display the remaining battery capacity, from the internal battery. **Note:** When receiving the unit for the first time there is no requirement to condition the battery, the battery is conditioned by the normal charging processing.

5 Battery & Charging Characteristics

The suction unit incorporates a 12V/4300mAh NiMH battery pack, which can operate the suction unit for a period up to 1½ hours. The battery pack is made of 10 x 430mAh cells, which are RoHS compatible and can be recycled. The battery pack automatically starts recharging itself when connected to an external power source such as 110V – 240V AC mains or a vehicle 12V – 28V supply.

If the unit is not to be used for a prolonged period time the battery should be removed and stored in a suitable storage area (-20°C to 35°C). NiMH Batteries are prone to self discharge.

There are 4 x battery level LED lights on the control panel that nominally indicate the battery charge level. These should only be used as indicators during operation from the internal battery, as they can be influenced by a number of factors including unit settings, temperature, battery condition etc. Caution: During aspiration the battery LEDs can flicker between the 4 levels but will return to a steady level when aspiration has stopped. This is a normal operating characteristic of the device under load.

5.1 Charging

When charging from an external power source the top green light will flash on the battery indicator and the bottom light will stay illuminated (fully discharged battery). As the battery charges, the LEDs will sequentially light up on one at a time on the battery indicator, whilst the top light continues to flash. Note when only the top light is illuminated flashing the battery is nearly fully charged. Charging is complete when the top light is illuminating as a solid state. This process will take approximately 2½ hours to fully charge the battery pack. N.B. If the top LED still flashes well beyond this time, this is indicative of the battery being faulty and will need replacing.

5.2 Fully Charged

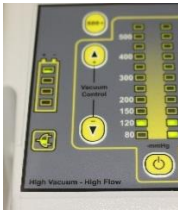
When then battery is fully charged the top green light will stop flashing and stay on.

5.3 In Use

When the suction unit is being operated, the indicator lights will illuminate giving the level of charge remaining in the battery (on battery power only) – **during free flow (see 5 above).** When the unit is in use (and when not connected to an external power source), the lights will gradually decrease to bottom of the battery indicator, which will remain illuminated until re-charging commences**.** At this point the suction unit will continue to operate until there is not sufficient power remaining to operate the unit. **Note: As a guide, under battery supply only, when the second from bottom light extinguishes there is approximately 20 minutes of operation remaining.**

5.4 In Use & Charging

With the suction unit being operated whilst connected to an input supply, the top battery indicator light only will illuminate **(N.B. this will flash if battery is not fully charged)**.



5.5 Re-Charging

When the Battery Level Indicator has only the bottom light illuminated, the unit requires recharging. **Note: If this bottom light starts flashing, the unit must be turned off immediately or the battery could totally discharge. If not in regular use, it is recommended to fully charge at least monthly to maintain battery condition.**

Caution: *It is recommended that battery condition is checked on a* ***daily*** *basis for correct function* ***prior to use and/or distribution****; even if left on charge, as all batteries can fail over time – see 5.1 above (noting battery packs carry a one year warranty only).*

5.6 Battery Removal/Replacement

Warning: *Only use batteries or accessories supplied by Oxylitre or its authorised distributers. This should only be conducted by trained technically competent personnel.*

Remove the two screws that attach the battery cover to the rear of the unit.

Remove and disconnect the battery (by pressing down on the white connector tab) and dispose of safely according to local regulations.

Replace the battery by first pushing in the white connector into the terminal in the battery compartment (note: can only be attached in one orientation) and then the battery unit itself, taking care with positioning the cable.

Replace the battery cover and replace the screws.

Note: For PSPs manufactured from 2014 onwards, when a new battery is connected, on first power up (battery only, no mains) the unit will perform an auto calibration (synchronisation) sequence and then the unit will automatically turn off. The sequence is as follows (information included on label in battery compartment):

- Turn on, all four battery LEDs will illuminate
- Unit automatically selects top vacuum
- After up to 10 seconds all four battery LEDs will go out.
- The battery display indicator will display correct battery level (showing one LED illuminated).
- The unit will then turn itself off. Unit is now ready for use.

This is done prior to connecting to the mains to ensure correct battery management.

It is advised that after fitting a replacement battery, the battery status is periodically checked to ensure peak performance.

6 Jar Systems

The Portable Suction Pump can be operated with four canisters, the Oxylitre Standard Reusable Jar, the Hospira Receptal Canister and Liner System, the Serres Canister and Liner System and the Vac Sax Canister and Liner Systems as shown in section 3. All come with customized canister retainers, which are a permanent fixture to that particular model.

Caution

Check the filter after each use. If the filter is broken so liquid penetrates the membrane, the pump will be contaminated and the PSP must be returned for service.

Aspiration should stop when fluid has reached the top graduation in the receiver jar. **This applies to all jar types, this is due to the float valve in the case of the Oxylitre Standard reusable jar and the filter in the disposable systems**.

To continue suctioning one of the following methods should be employed.

6.1 Oxylitre 1000ml Reusable Receiver Jar

It is advised that the jar is used patient-specifically then decontamination is required to prevent the risk of cross infection. See Servicing, Preventative Maintenance & Cleaning for instructions.

If the same patient undergoes long-term treatment, empty the jar of its contents at least every 24 hours, following guide lines below.

When fluid reaches the top of the Jar, the PSP will stop suctioning. To continue suctioning, remove and empty the contents of the Receiver Jar and remove any suctioned material from the float valve under the lid. Failure to remove this material may result in the overflow system failing and material potentially damaging the device.

Disconnect the tubing from the filter and hold upright, take hold of the suction connecting tube with catheter (if connected). Hold upwards alongside of the vacuum tubing to prevent any fluid draining and spilling. Hold the two tubes in one hand and jar in the other.

Take the receiver jar to a disposal point where the jar contents can be safely released and dispose of according to local protocols.

Unscrew the lid from the jar by turning the lid anti-clockwise and gently pour away the contents preventing any spillage or splashing. Rinse the jar.

Caution
WHEN HANDLING A FULL SUCTION JAR
ATTENTION SHOULD BE PAID TO THE FACT THAT IT MIGHT CONTAIN INFECTIOUS WASTE.

Pull the float valve assembly from beneath receiver jar lid then remove the float from the float housing and rinse. Also thoroughly rinse jar and any tubing.

Replace the float valve assembly

Screw the jar lid on to the receiver jar, clockwise securely. Place the receiver jar into the holder at the front of the unit.

Ensuring that the tubing on the suction unit has either been replaced or cleaned, connect the vacuum tube to the filter and the other end to the connector marked “Vacuum” on the receiver jar securely.

See section 3 for tubing set up.

6.2 HOSPIRA Receptal and Canister System

Receptal disposable bags must be replaced patient-specifically. If the same patient undergoes long-term treatment, the suction bag must be replaced at least every 24 hours.

The reusable liner must be decommissioned if it has become damaged or dose not function as planned.

At the end of the procedure the vacuum supply should remain switched (ON) while the patient suction tubing is removed from the patient port and discarded.

Disconnect the liner lid tubing from the canister tee and immediately reconnect the yellow connector to the patient port with a push and twist motion

Turn the vacuum off and use the thumb tab to remove the liner for disposal. The liner lid tubing must not be used as a carrying handle.

Disposal Considerations

Safe to dispose of by landfill or incineration. Do not discharge into sewers. Dispose of in accordance with appropriate local procedures.

Caution

NOTE! REUSE OF DISPOSABLE PRODUCTS IS STRICTLY FORBIDDEN. REUSE REDUCES THE PERFORMANCE OF THE PRODUCT AND CAN CAUSE AN INFECTION RISK. WHEN HANDLING A USED SUCTION BAG ATTENTION SHOULD BE PAID TO THE FACT THAT IT MIGHT CONTAIN INFECTIOUS WASTE.

Insert the liner in to the canister and make sure the liner is tightly secured in the canister by locating the thumb tab above the 'canister tee' and firmly pushing the lid.

Connect the vacuum source tubing to one side of the canister tee the other to the filter. Connect the liner lid tubing to the other side of the 'canister tee' using the 'yellow to yellow' coding.

Finally, connect the patient tubing to the patient port, directly or by using the white elbow connector.

See Section 3 for tubing set up.

Canister system is now ready for use.

6.3 SERRES 1000ml Jar and Liner System

SERRES suction bags, are disposable and must be replaced patient-specifically. If the same patient undergoes long-term treatment, the suction bag must be replaced at least every 24 hours.

The reusable liner must be decommissioned if it has become damaged or dose not function as planned.

After the suctioning procedure, disconnect the patient tube and white angled connector (or alternatively straight connector). Close the connection with the patient connector plug provided on the lid of the suction bag.

Finally, turn off the vacuum source. Lift the suction bag using the handle on the lid.

DO NOT TURN OFF THE PSP BEFORE YOU HAVE CLOSED THE SUCTION BAG.

Disposal Considerations

Safe to dispose of by landfill or incineration. Do not discharge into sewers. Dispose of in accordance with appropriate local procedures.

Caution

NOTE! REUSE OF DISPOSABLE PRODUCTS IS STRICTLY FORBIDDEN. REUSE REDUCES THE PERFORMANCE OF THE PRODUCT AND CAN CAUSE AN INFECTION RISK. WHEN HANDLING A USED SUCTION BAG ATTENTION SHOULD BE PAID TO THE FACT THAT IT MIGHT CONTAIN INFECTIOUS WASTE.

The suction canister and angle connector can be washed (95 °C) and autoclaved (121 °C). Remove the grey, angled connector before washing. Other reusable products can be wiped with disinfectant.

Whilst installing the suction canister place the suction canister in a bracket in an upright position. Unfold the suction bag and place it into the suction canister.

Turn on the vacuum source and install the suction bag by using the vacuum. Close the patient connector with your finger and simultaneously push the suction bag slightly from the middle of the lid

NOTE! BEFORE USE, ENSURE THAT THE VACUUM HAS BEEN CREATED AND THE SUCTION BAG IS FULLY INFLATED. Connect the patient tube to the patient connector. The system is ready for use.

See Section 3 tubing for set up.

6.4 Vac Sax 1000ml Canister Liner System

Vac Sax Suction liners, are disposable and must be replaced patient-specifically. If the same patient undergoes long-term treatment, the suction bag must be replaced at least every 24 hours.

The reusable liner must be decommissioned if it has become damaged or does not function as planned.

At the end of the procedure DO NOT turn off the PSP whilst disconnecting the patient tubing.

Remove the patient tubing connector from the male port marked ‘patient’ on the lid and fit the blanking stop over the port.

The blanking stop is attached to the lid of the liner directly facing the patient and vacuum ports.

Remove the vacuum connection by twisting the tapered connector

Using the handles, lift the liner out of the canister.

Disposal Considerations

Safe to dispose of by landfill or incineration. Do not discharge into sewers. Dispose of in accordance with appropriate local procedures.

Caution

NOTE! REUSE OF DISPOSABLE PRODUCTS IS STRICTLY FORBIDDEN. REUSE REDUCES THE PERFORMANCE OF THE PRODUCT AND CAN CAUSE AN INFECTION RISK.

WHEN HANDLING A USED SUCTION BAG ATTENTION SHOULD BE PAID TO THE FACT THAT IT MIGHT CONTAIN INFECTIOUS WASTE.

Ensure the canister is clean, wipe the inner rim surface with a damp cloth if deemed necessary. To ensure a vacuum seal.

Push the liner firmly in to the canister

Push the tapered connector in to the female vacuum port, using a twisting action.

Turn on the PSP using the +500 (max) vacuum override button to inflate the bag. Once this has been achieved turn reduce the vacuum level to desired level.

If the bag fails to inflate or vacuum level is not achieved, replace the liner and check hydrophobic filter on the unit.

Fit patient tubing and occlude and confirm that vacuum is being achieved throughout the system. The system is now ready for use.

See section 3 for set up.

7 Servicing, Preventative Maintenance & Cleaning

Intended to be serviced annually, see maintenance & service manual

i **Do not** clean the suction unit unless the plug has been removed from the mains socket supply.

Do not rinse or use excessive amounts of water or fluid over the suction unit.

Do not submerse this unit in water.

ii The Hydrophobic/Bacterial Filter should be immediately replaced when found discoloured or if wetted/contaminated. Such contamination can reduce pump performance. Discolouration can be simply checked by comparing it with a new replacement filter, along with the tubing connecting the jar and filter.

It is recommended that these parts are changed on a regular basis.

iii Use mild cleaning agents/detergents (e.g. diluted Dettol or similar) when cleaning the unit and Receiver Jar components (* see **'Warning'** on page 2).

iii The Oxylitre Receiver Jar and Lid Components are Autoclaveable up to 121°C (for 3 minutes); see Guidelines for Autoclaving Doc-OP-4403.

Be advised that the tubing and connecting catheter is to be used patient-specifically and must be disposed of and replaced after each patient use.

iv The battery should be fully charged after use. Do not allow the battery to discharge or consistently fast charge as this will reduce the life of the battery pack.

v There are no user serviceable components inside the unit's enclosure. Do not open the enclosure. **Unauthorised repairs will invalidate the warranty.** Refer servicing to Oxylitre qualified engineers (service@oxylitre.co.uk).

8 Replacement Parts

A	Suction Connecting Tubing	Ref:	PSP500-4-1
B	Catheter Connector	Ref:	PSP500-5 (10 Pack)
C	Hydrophobic/Bacterial Filter	Ref:	PSP600-12 (12 Pack)
D	Hydrophobic/Bacterial Filter	Ref:	PSP600-50 (50 Pack)
E	Receiver Jar Lid	Ref:	PSP500-2-1
F	Lid Sealing Ring	Ref:	BS9335
G	Float Assembly	Ref:	PSP500-3
H	Oxylitre1000mL Receiver Jar	Ref:	PSP500-1
I	12V Battery Pack	Ref:	PSP300-5

Please Note: Always use Oxylitre replacements parts.

9 EQUIPMENT application specification

The PSP has been designed to meet the essential requirements of IEC 60601-1.

Medical purpose

To aspirate bodily fluids and collect, not to be used for continuous drainage.

Intended Operator

The unit is to be used by trained medical or paramedical staff who understands the use of suction equipment to aspirate bodily fluids and the vacuum level to be applied.

Intended Patient

Age: new born to geriatric
Weight: > 2.5 kg
Health: not relevant
PATIENT state: Not relevant
- PATIENT is not the OPERATOR

Intended User Profile

Age: Adult
Nationality: Multiple
Gender: Male or Female
Cultural: Multiple
Condition: Mentally Stable
Level of Competence:
Minimum-Medically Competent,
No maximum

Application Environment

Hospital
Care Home/Hospice
Ambulance
Could be damaged by impact (designed to withstand a drop of 1m onto concrete)
Can withstand rainfall (IP24D)
Intended to be serviced annually
Meets requirements of IEC 60601-1 for environmental tests
Oxylitre canister can be autoclaved up to 121°C

Conditions of visibility of Markings

LED display is visible from 1+ metre
Ambient luminance 100 – 500 lux (normal conditions)
Control buttons are phosphorescently marked and can be distinguished in the dark

Applied Part Interaction

There is no direct contact with the patient – an attachment for aspirating will be fitted to the patient tube via the catheter connector. The patient tube and catheter connecter is classed as an Applied Part as it is attached to another device, e.g. catheter to the male end of the Suction Connection Tube, this could have contact with the patient. The tubing could come into contact with the patient during use.

Working vacuum up to 500mmHg (or 150mmHg – Low Vacuum)
Weight 4.59kg
Integral carrying handle
Flame retardant structure enclosure

Frequency of use

Once a year up to 10+ times a day

Mobility

Intended to be fully portable e.g. for field use (chargeable, battery power – up to 1.5 hours)
Can withstand 20g acceleration/deceleration on docking station

10 Technical Specifications

Warning the modification of the equipment or the removal of any parts is strictly prohibited and will rescind your warranty. Such action may lead to the unit failing in service.

10.1 1000mL Receiver Jar

Capacity:	1000mL (100ml marking divisions)
Overflow protection:	Float valve shut off
Cleaning agent:	Mild detergent (diluted to detergent instructions)
Sterilisation:	Autoclaveable to 121ºC
Material specification:	Mainly Polycarbonate
Jar graduation tolerance:	±5% Full scale

10.2 Performance:

Units:	mmHg
Vacuum Range:	80 to 500 minimum (High Suction Models)
	10 to 150 maximum (Low Suction Models)
Accuracy:	±10% on indicated value
Flow Rates:	>25lpm (High Vacuum)
	>18lpm (Low Vacuum)
Duration:	90 minutes @ 80mmHg Free flow
Noise Level	<65dB

10.3 Filtration

Input Filtration:	Disposable Hydrophobic/Bacterial Filter, 99.99% effective against 0.6 micron particles.

10.4 Applied Parts

Tubing:	Silicone wide bore (7 x 3mm), maximum length 1.75m
	Single Use
	Maximum temperature 40 ºC
Tubing Connection:	Angled Tubing Tail

10.5 Exhaust

Exhaust output:	Exhaust output on rear panel. No rear panel exhaust filtration required.

10.6 Unit Dimensions

Height:	315mm
Width:	305mm
Depth:	175mm (225mm with docking station)
Weight:	4.59kg (without docking station)
	Can withstand rainfall (IP24D)

10.7 Electrical/Electronic Specifications

Input supply & Cables:	
External Connection Options:	
High Voltage:	110-240V AC (Via mains lead) Maximum current 10 Amps, Fuse 5A Maximum Cord length 1.5m
Method of Isolation:	Remove plug from mains supply safely
Input Protection	Power Board: Internal T3.15/T5 A/250 V fuse in line and neutral
Low Voltage:	12-17V DC (Low voltage BLACK lead)
Low Voltage:	17-28V DC (Low voltage WHITE lead)
Intermittent Operation:	30 minutes on, 30 minutes off

10.8 Battery

Battery type:	NiMH (RoHS compatible)
Battery power:	10 x 1.2V cell pack
Battery capacity:	4300mAh minimum
Charge Rate:	450mA for 16 hours
Temp protection:	Thermal switch protection
Load protection:	Charge management system
Load & overheat protected.	
Battery life:	12 months (ideal conditions)
Storage Conditions:	-20 to 35oC

10.9 Motor

Motor:	Enclosed
Standard Supply	12 Volts DC
Max Amp:	5A
Fuse type:	12V AC (F) 5A

10.10 Electrical

Mains Input Voltage:	110-240V AC
Watts:	40-50W (charging)
Frequency:	50/60 Hz
Phase:	Single
Amperes:	5A
Fuse Type:	T2A
Classification:	Class II

Level of protection:	Type BF
Plug Fuse:	5A

10.11 Electronics

Components:	RoHS compatible
Charging voltage:	12V
Control voltage:	12V
Management:	ICU/Software managed

10.12 Electrical/Electronic Test

Electrical/Electronic Safety:	BS EN 60601-1
EMC emissions:	BS EN 60601-1-2

11 Environmental Conditions for use Transport and Storage

Operating/Charging Temperature:	0° C (32°F) to + 40° C (104° F)
Recommended Charging Temperature:	15°C (59°F) to + 25°C (77°F)
Long term Storage Temperature:	0° C (32°F) to + 40° C (104° F)
Max. 24 hour Storage Temperature:	-30° C (-22°F) to + 70° C (158° F)
Humidity (Operating & Storage):	5-95% RH non-condensing
Atmospheric pressure range:	50kPa to 106kPa

12 Materials Specification

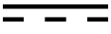
Outer Case (Front)	PC/ABS
Outer Case (Rear)	PC/ABS
Jar Retaining Bracket	PC/ABS
Jar Retainer Insert (Reusable Jar only)	NBR
Battery Door	PC/ABS
Anti-slip Feet strip	Santoprene
Suction Control Touch Panel	PC
Reusable Jar Lid	PC
Reusable Jar only	PC
Sealing Ring for Lid	Neoprene
Float Housing only	PC
Float Body Assembly	PC
Float Valve only	Silicone
O Ring for Float Housing	Nitrile
Patient & Filter Tubing	Silicone
Suction Catheter Connector	Styrene-Butadiene
Filter Disk	Styrene-Butadiene
Screws	Steel

13 Disposal Guide lines

Not for general waste. At the end of life cycle, the PSP is to be disposed of in accordance with the European Directive on the safe disposal of Electrical / Electronic Products and as such shall be handed over to the applicable collection centre for the recycling of electrical / electronic equipment.
All items to be disposed of should first be decontaminated to reduce the risk of contamination.

Alternatively you should contact Oxylitre to arrange for the collection of the equipment.

14 Symbol Definition



Direct current (DC)

Alternating current (AC)

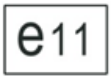
Class II equipment

MR UNSAFE

Type BF applied part

Rating of the degree of protection against intrusive implements and the protection of the environment.

The product has been designed to comply with the safety and design requirements of the European Directives for Medical Devices including Council Directive 92/43/EEC



The product complies with the requirements of the relevant Safety European Automotive Directives for use in Ambulances and other Medical Vehicles

Follow instructions for use.

Indicates: “Caution”

Waste Electrical & Electronic Equipment (WEEE) compliance (Environmental Agency Producer Registration Number: WEE/AJ0509VR).
Please contact Oxylitre for details of obligated waste collection.

Do not reuse.

Warning electricity.

Manufacturer

Date of Manufacture

Fragile

Keep dry

Temperature limit

The Oxylitre PSP Series Portable Petite Elite Suction unit complies and/or has been approved to the requirements of:

a.	BS EN ISO 10079-1	b.	BS EN 60601-1
c.	BS EN 1789[1]	d.	BS EN 60601-1-2
e.	Council Directive 2006/28/EC	f.	Council Directive 92/43/EEC
g.	VCA Approved (Automotive)	h.	GMDN 47366

15 Fault Diagnosis

Fault Found	Possible Cause	Corrective Action
Suction Unit does not operate when the on/off button is pressed and LED's do not illuminate (without mains lead connected)	• Faulty switch on Display Board	• Contact Supplier. Possible emergency override by pressing the 500+/Max Vac button. Then control vacuum in the usual way. **Be advised* it may not be possible to switch off the unit. In which case it will continue to run until the battery is fully discharged.
	• Internal Battery fully discharged and/or faulty	• Connect Mains Lead to recharge Battery. If Battery does not recharge, operate off mains supply in emergency situation and *Contact Supplier*
	• Internal Cable fault.	• Contact Supplier
Suction Unit does not operate when the on/off button is pressed and LED's do not illuminate (with mains lead connected)	• Faulty Switch on Display Board	• Contact Supplier
	• Internal Circuit or Cable fault	• Contact Supplier
	• Fuse Blown on Mains Lead Plug or Mains Lead faulty	• Replace fuse or mains Lead
Suction Unit does not operate when the on/off button is pressed and LED's do not illuminate (With or without mains lead connected).	• Internal Battery Disconnected.	• Contact Supplier
	• Internal Pump and Motor Assembly disconnected or faulty	• Contact Supplier
LED's do all operate when on/off button is pressed (with or without mains lead connected) but no suction	• Internal Pump and Motor Assembly disconnected or faulty	• Contact Supplier
Suction Unit operates on battery but does not work off mains (mains lead and fuse OK).	• Faulty Power Board	• Contact Supplier
Vacuum level will select and run but motor stops running when aspirating	• Possible blockage	• The unit is designed to stop running when the tubing is blocked, the jar is full, if fluid aspirated is highly dense or if solids are found. Empty or replace jar, clean tubing and replace filter as necessary. Check shut-off valve in jar assembly is not in shut-off position and moves freely.

Suction Unit PULSATES when the on/off button is pressed (With Mains Lead connected)	• Internal Battery Disconnected	• Contact Supplier
When 500+ mmHg or "Max Vac" is selected (Highest Level of vacuum) and patient tubing occluded the actual achieved vacuum and flow is poor. Note: This will cause the pre-test (section 4.1.4) to be invalid i.e. the pump will not stop as indicated.	• Leakage in the vacuum system caused faulty components • Filter blocked • Liner System faulty	• Ensure that all components have been correctly fitted. Inspect the Jar Lid, Filter and Tubing and change where applicable and or readjust tubing connections • Filters are to be replaced if wetted or discoloured and/or contaminated. Compare to new unused filter to confirm status. • If fitted with a disposable Liner check the Liner System & Filter (if used). Use new Liner.
	• Damaged Tubing or disconnected	• Check any kinks or damaged to tubing and change where necessary
	• Pump Assembly worn and/or damaged	• Contact Supplier
Unusual noise coming from inside the unit when running	• Possible mechanical or electrical fault	• Contact Supplier
When pressing the Vacuum Control Buttons the unit does not respond/or the Vacuum Indicator LED's behaves erratically	• Faulty PC Board	• Contact Supplier
The unit is not performing well on Battery.	• Battery in poor condition or faulty	• Ensure that unit has been fully recharged (i.e. for 2¼ hours). If still poor performance – Contact Supplier.

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