KBIOSYSTEMS
porvair

Ultravap® LEVANTE

Sample Concentrator

User Manual

KBF167-10049-000 Version 2.0-25

8090-10049-000

Read these instructions thoroughly before using this product. keep these instructions in a safe place for future reference.

Document Information

Copyright

Publication and Purpose

Published by Kbiosystems Ltd on 28th July 2025; version 2.0-25

This document provides installation and operating instructions for the Ultravap Levante.

All possible care has been taken in the preparation of this user manual, but Kbiosystems Ltd., its agents and distributors accept no liability for any inaccuracies that may be found. This user guide reflects the state of the product at the publication date above, but further enhancements while in service may mean that the user guide does not precisely reflect your system.

Kbiosystems Ltd. reserves the right to make changes without notice both to this user guide and the products which it describes.

Symbols and Notices Used

Important information has been highlighted throughout this document using the following symbols:

Warning	See relevant section	Take note of this information
		

Important safety information in the safety section below has been highlighted using the following symbols:

Caution: Finger entrapment / injury	Caution: Injury / product damage	Warning: Electrical death / serious injury
		

Caution: Hot area / injury	Caution: Protective Conductor Terminal	Safety Instruction: Wear appropriate gloves
		

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Contents

1. Safety Information

Ensure that the information and instructions provided in this section have been reviewed prior to unpacking, installing or operating the product.

1.1 Intended Use

The Ultravap Levante has been developed to be a compact, standalone blow down sample concentrator, to allow evaporation of solvents, from microplates in minutes, rather than hours.

1.2 Statutory Obligations

Installation and maintenance must comply with all relevant local laws and regulations ('statutory obligations').

Statutory obligations always override manufacturer documentation.

It is the responsibility of the customer to conduct a Health & Safety risk assessment prior to installing and operating this product.

This product should not be operated by children or persons with reduced physical, sensory, or mental capabilities. Where necessary, such persons should be given supervision by a qualified person responsible for their safety.

Do not position the unit where it may violate Fire or Health and Safety regulations (e.g., block fire exits or stairwells, etc.).

1.3 Electrical Safety

Warning: Electrical Death / Serious Injury (Risk of 115 -230 Nominal Volt Alternating Current (VAC) Electric Shock)

Only qualified, competent, and approved persons may undertake installations, repairs, or relocations of this product.

Only approved, supplied mains cord set must be used with this instrument. If an extension lead is required, then it must be earthed correctly.

Ensure that the building electrical system is compliant with Safety Regulations.

For indoor use only in a well-ventilated area.

Do not allow children or any other unqualified or unapproved persons to install, repair, clean, relocate, or otherwise interfere or tamper with the product.

Do not immerse the unit or its peripherals in liquid.

Do not install outdoors, near explosive gases, hot works, or where there is a danger of freezing.

Do not connect to incompatible power sources or use any fuse other than that specified.

1.4 Installation Safety

Caution: Injury / Product Damage (Product Weighs at Least 15 Kilograms)

Use appropriate lifting and carrying equipment – including Personal Protective Equipment (PPE) – for installation and movement of the product.

Install on a suitable, stable bench with sufficient space to avoid the unit falling or vibrating during operation.

1.5 Operational Safety

Caution: Finger entrapment / Injury (Fingers May be Caught In Plate Carrier)

When instrument is running, ensure that fingers or other appendages are clear from being caught.

Do not place fingers, other appendages, or any other items into openings not intended for them.

Safety: Wear Appropriate Gloves (Ensure Appropriate Gloves are Worn)

Chemically resistant gloves must be worn when handling samples.

Protective gloves must be worn when installing or moving the unit.

Do not attempt to touch chemicals, or other potentially hazardous substances without the use of appropriate gloves.

Supplement gloves with other appropriate PPE where necessary (e.g., eye protection, etc.).

Safety: Using Solvents and Potentially Hazardous Chemicals (Ensure Proper Training and Care is Taken When Handling/Disposing of Solvents or Chemicals)

Do not use with damaged or defective plates.

Use in a well-ventilated environment, use a fume hood if necessary.

Sample waste used in the process should be disposed of using approved waste disposal procedures.

Ensure gas supply is within pressure limits.

SAVE THESE INSTRUCTIONS

2. Overview

2.1 Ultravap Levante

This instrument eliminates the traditional “bottleneck” of solvent evaporation prior to analysis or reconstitution in buffer. It has been designed to be used with ANSI/SBS format well plates. All evaporator heads are easily interchangeable. The instrument will accommodate either 96 or 384 well plates, with straight needles, or spiralled needles (which offer improved drying efficiency [96 plate only]).

The Ultravap Levante flows heated gas (typically nitrogen) into a plate’s wells. The platform containing the well plates, is programmable in elevation to suit well plate dimensions and dry-down protocol.

The instrument has been configured to be simple to install, operate and maintain. Installation requires connection to a gas supply of nitrogen or clean dry air and a suitable electrical supply. Safe operation is ensured as the CE marked unit fits into fume cupboards or may be integrated into a dedicated fume extraction unit.

- Benchtop evaporator
- Compressed air or nitrogen compatible
- Interchangeable needle head design
- 115 -230 nominal VAC power compatible
- Built in safety features
- Simple to use touch screen
- Easy to clean and maintain

2.2 Parts Supplied

All items listed below are provided upon purchase. All may also be purchased separately from Kbiosystems.

Part No.	Part Name	Part Code	Quantity
1	Ultravap Levante	250-10049	1
2	Levante/Mistral Toolkit (Hex keys, touch screen stylus, screwdriver)	150-10045-004	1
3	Communication Lead	5050-10311	1
4	Mains IEC Lead UK	5058-10030	1
5	Mains IEC Lead USA	5058-10031	1
6	Mains IEC Lead EU	5058-10032	1
7	Levante/Mistral Box & Packaging	3038-10052	1
8	Spare Fuse	5050-10010	2
9	User Guide	8090-10049-000	1

Table 1: Ultravap Levante Parts Supplied

2.3 Technical Specifications

Item	Specification	Notes
Model	Ultravap Levante	See section above for part code
Dimensions	180 x 450 x 480 mm	Width x Depth x Height in millimetres
Unit Weight	15.7 kg	
Gas Input	8 mm Inlet	
Power Supply	115 to 230 VAC 50/60 Hz	
Fuse Rating	2 x 5 Amp Anti-Surge (T5AH 250V)	
Protection	IP40	Resists dust / objects over 12 mm in size
Humidity Range	10 to 80%	Non-condensing
Ambient Temperature	15 to 40˚C (59 to 104°F)	
Input Gas	Nitrogen (recommended) Compressed Air	Clean, dry supply
Gas Supply Pressure	4 to 7 Bar (58 to 100 PSI)	Performance may vary at lower input pressures
Flow	100 L/min	

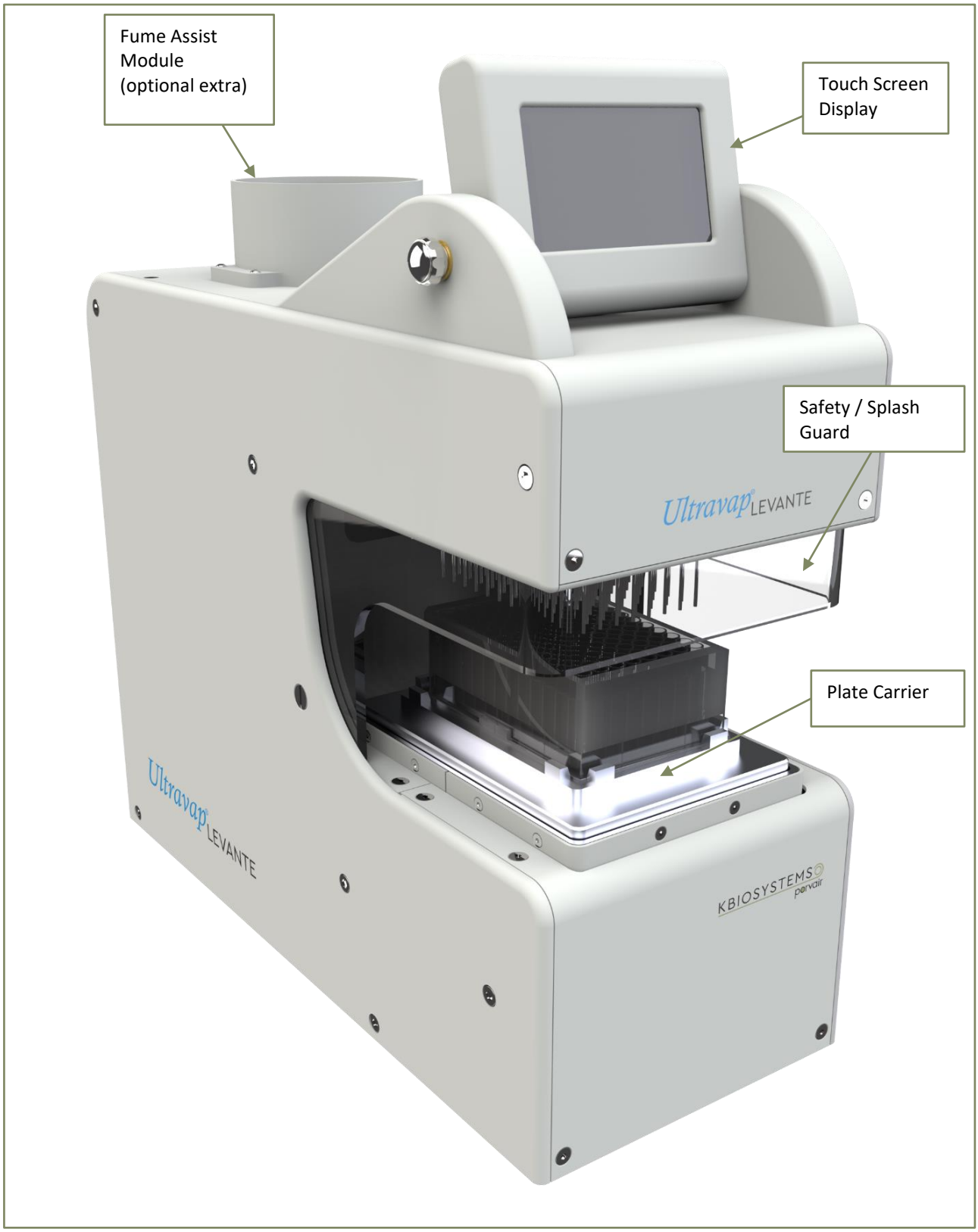
Table 2: Ultravap Levante Technical Specifications

Gas Supply Information

A suitable clean, dry, regulated gas supply should be connected to the instrument using 8 mm tubing. Use of a filter / separator in addition to supply regulator is strongly recommended. Typical gases suitable for use with the Ultravap Levante are nitrogen and compressed air.

For samples that are easily oxidised it is strongly recommended that nitrogen is used. The gas can be supplied from cylinders/bottles, via in-house systems, local compressor (air) or from a gas generator (nitrogen).

2.4 Product Introduction



3. Delivery, Installation, & Repacking

Ensure that the information and instructions provided in section **1. Safety Information** have been reviewed prior to unpacking, installing, or operating the product.

3.1 Delivery

The unit is supplied in a re-usable crate and a transit bracket (where applicable) that must be retained in case the unit requires return (e.g. for servicing).

Where unpacking the unit after delivery:

- Inspect the unit and its parts for any damage that may have occurred during shipping.
- Use appropriate Personal Protection Equipment (PPE) and tools to safely remove the unit from its crate. **Do not damage or discard the crate or packaging provided.**
- Ensure that all components listed in section **2.2 Parts Supplied** have been provided.
- Ensure that all packing foam and ties are removed from the unit and its components.
- Store the re-usable crate and foam in a safe place.

3.2 Installation

Do not move the unit whilst in use. Install the unit on stable bench to avoid vibration during operation. Allow space for access to the plate carriage.

Where installing or moving the unit to a suitable location:

- Place the unit on a suitable and stable bench to avoid the unit falling or vibrating during operation.
- Use appropriate Personal Protective Equipment (PPE) during lifting or carrying equipment to install or move the unit.
- Allow sufficient space for loading / unloading of plates to the plate carrier.
- A pneumatic supply must be available nearby in a suitable environment (see section **2.3 Technical Specifications**).

3.3 Repacking

The unit is a precision instrument and MUST be properly repackaged for shipping. A failure to do so may result in unit damage during transit.

Where repacking the unit for return (e.g., if damaged or for servicing by Kbiosystems):

- Repack the unit in the same re-usable crate, foam, and transit bracket (if applicable) provided upon its original delivery.
- Ensure the unit has been repacked in the same way it was originally delivered.
- Where the original packaging has been lost or damaged, contact Kbiosystems via the details provided (see section **8. Warranty**) above before shipping.
- Ensure that all relevant parts have been repackaged prior to sealing and shipping.

4. Configuration

Ensure that the information and instructions provided in section **1. Safety Information** have been reviewed prior to unpacking, installing, or operating the product.

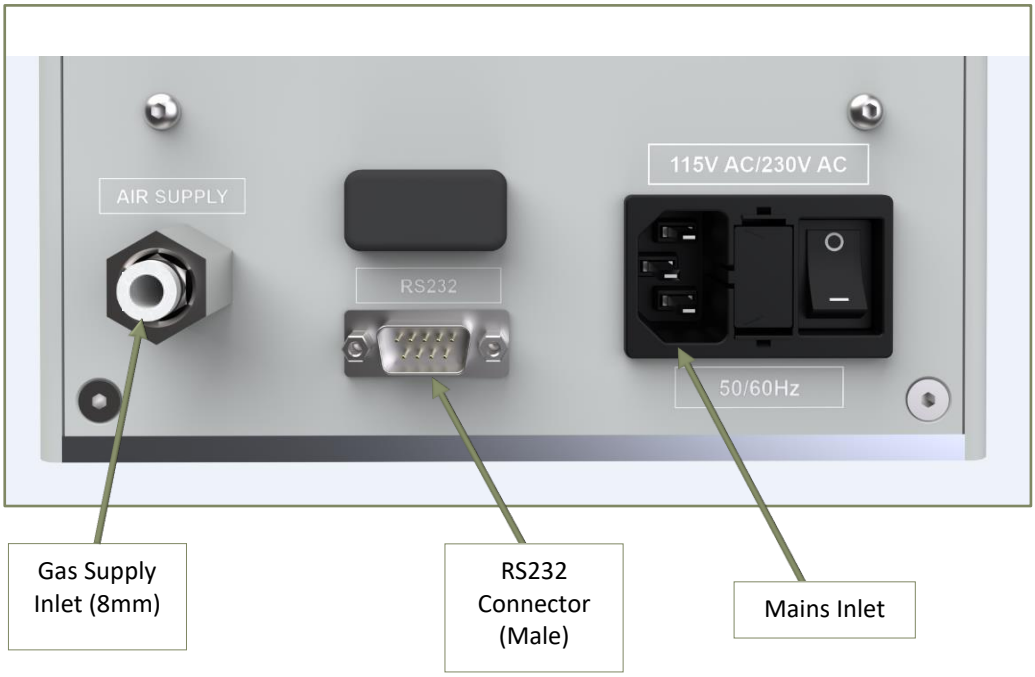
4.1 Connecting the Gas and Power Supply

Connecting the Gas Supply

Check that the gas supply is within the system requirements.

The gas supply should be connected to the universal connector female 8mm (internal diameter) on the rear of the unit. The connecting tube is a one-touch connection.

Gas pressure should not exceed 7 bar (100 PSI). Exceeding this pressure may damage the unit.



Connecting the Power Supply

The Ultravap Levante utilises a standard Euro inlet, which is fused and switched prior to inserting the connector. Check that the correct voltage is being applied.

4.2 Removing the Safety Guard

The Ultravap Levante features a safety guard this can be removed for replacing or fitting a needle head and cleaning purposes. This can be done by taking out the screw either side with the flat head screwdriver provided.

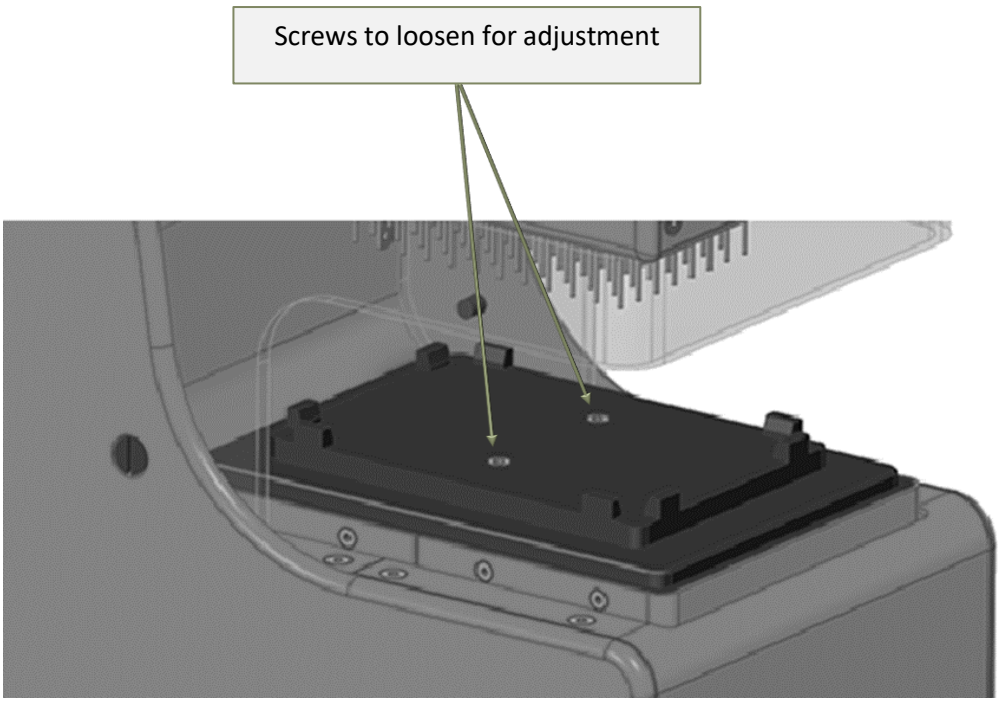
Ensure to fit the safety guard again before using the machine to prevent potential pinch points between the plate carrier and the needles and for splash protection.

4.3 Adjusting the Plate Carrier

The Ultravap Levante is compatible with various plate types. This is achieved by utilising an interchangeable head design. The appropriate manifold and gasket will need to be installed prior to running the machine.

The Ultravap Levante has an adjustable plate carrier, which can be moved for microplate location. They are set up to fit a standard SBS 96 well plate. Adjustment is carried out by loosening the location screws, positioning the plate, and re-tightening the screws.

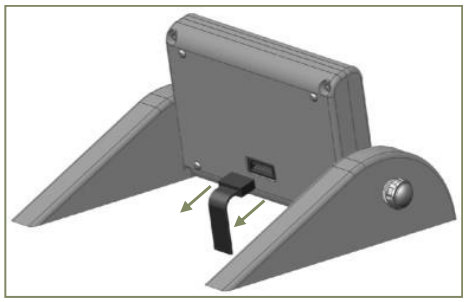
Check that the needles are centrally located above each well. If the plate is not located properly, move the carrier to correctly align the plate.



4.4 Rotating the Screen

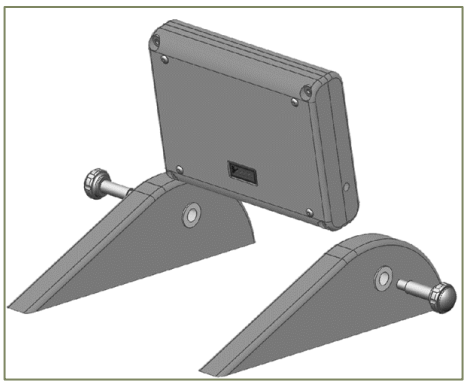
Another feature of the Ultravap Levante is that the display can be turned around to face backwards; this can be done to assist the operator during the integration

To turn the screen around follow these steps:

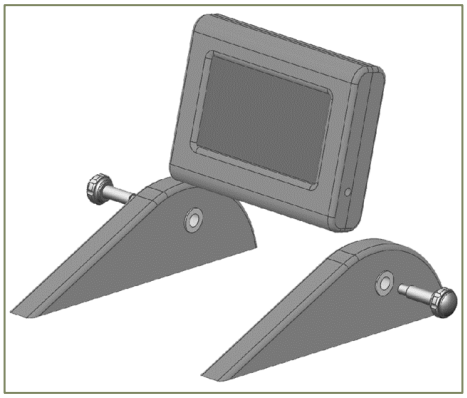


Disconnect the mains power cable from the instrument.

Unplug the black connector from the back of the screen bezel

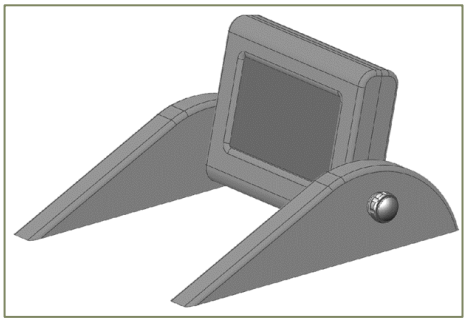


Loosen and remove both of the screen knobs



Turn the screen bezel around to face the opposite way

Put the screen knobs back in and tighten up enough to support the screen bezel



Plug the black connector back in to the screen bezel.

4.5 Fitting / Changing the Needle Head

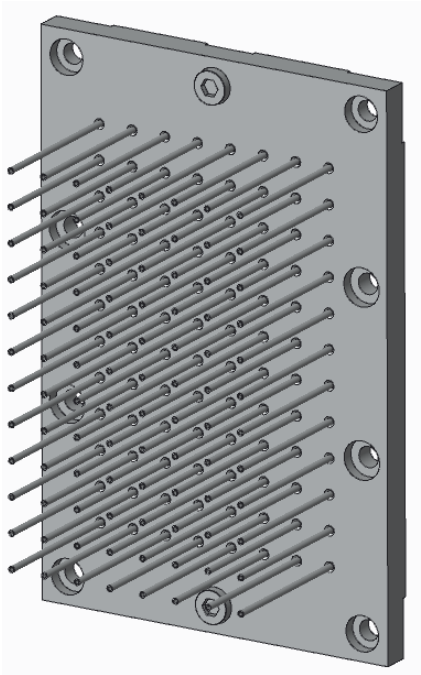
Needle heads are sold separately.

Checking the Needle Head

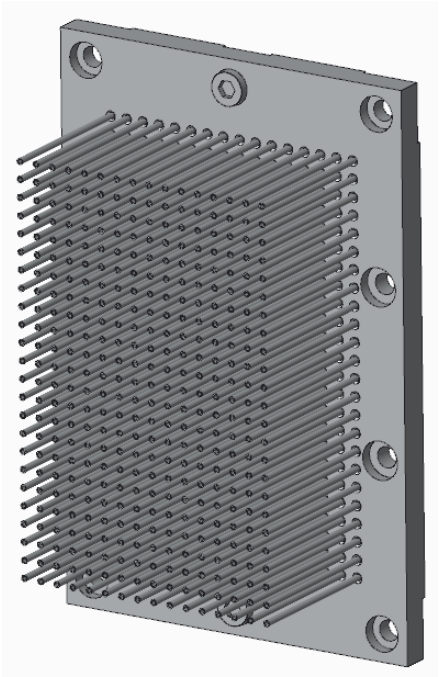
When unpacking your needle head, check visually, that no obvious damage has occurred during shipping.

- Next visually inspect the needle array for correct pitch (distance between pins).
- 96 well pitch is 9 mm
- 384 well pitch is 4.5 mm

This can be checked by offering up a standard 96/384 well plate.



96 well needle head



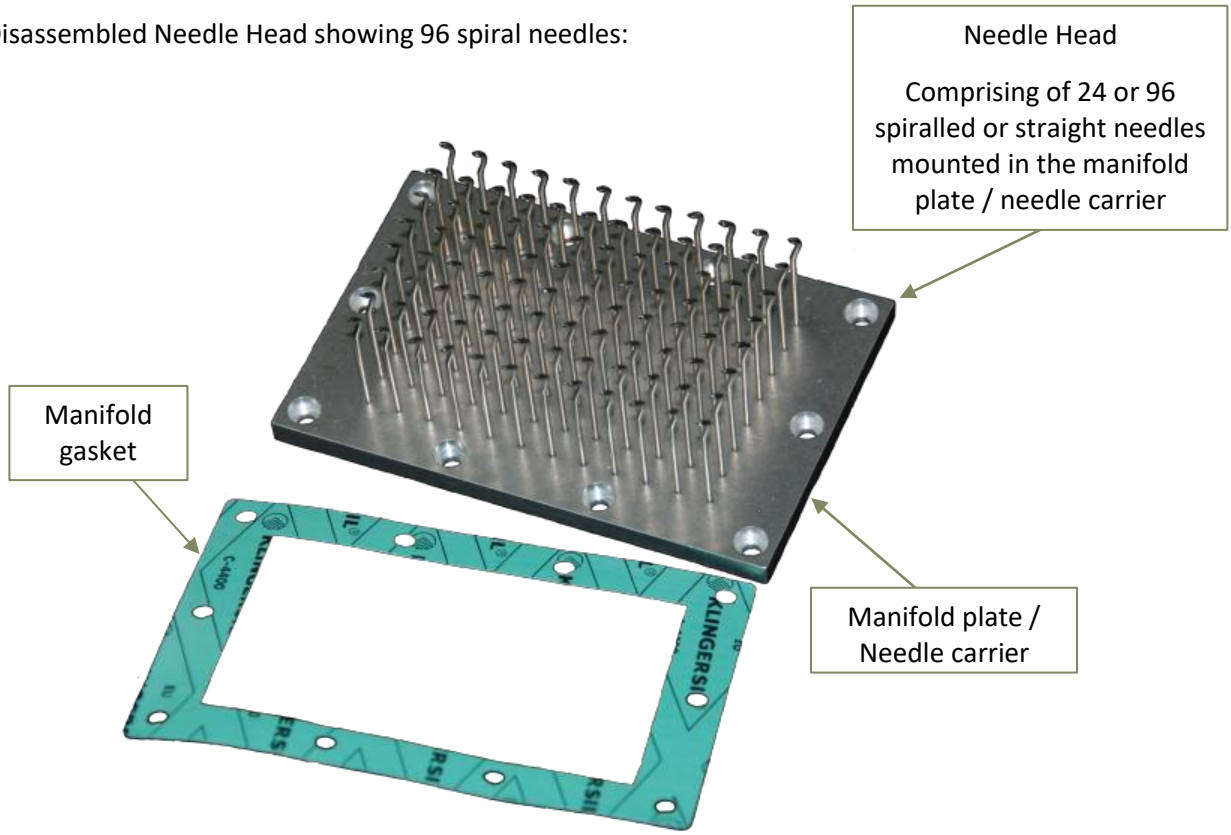
384 well needle head

Fitting the Gasket

When fitting the needle head ensure to fit the manifold gasket supplied between the needle head and the manifold, this is to ensure a good seal.

Note: It does not matter which way round the gasket goes.

Disassembled Needle Head showing 96 spiral needles:



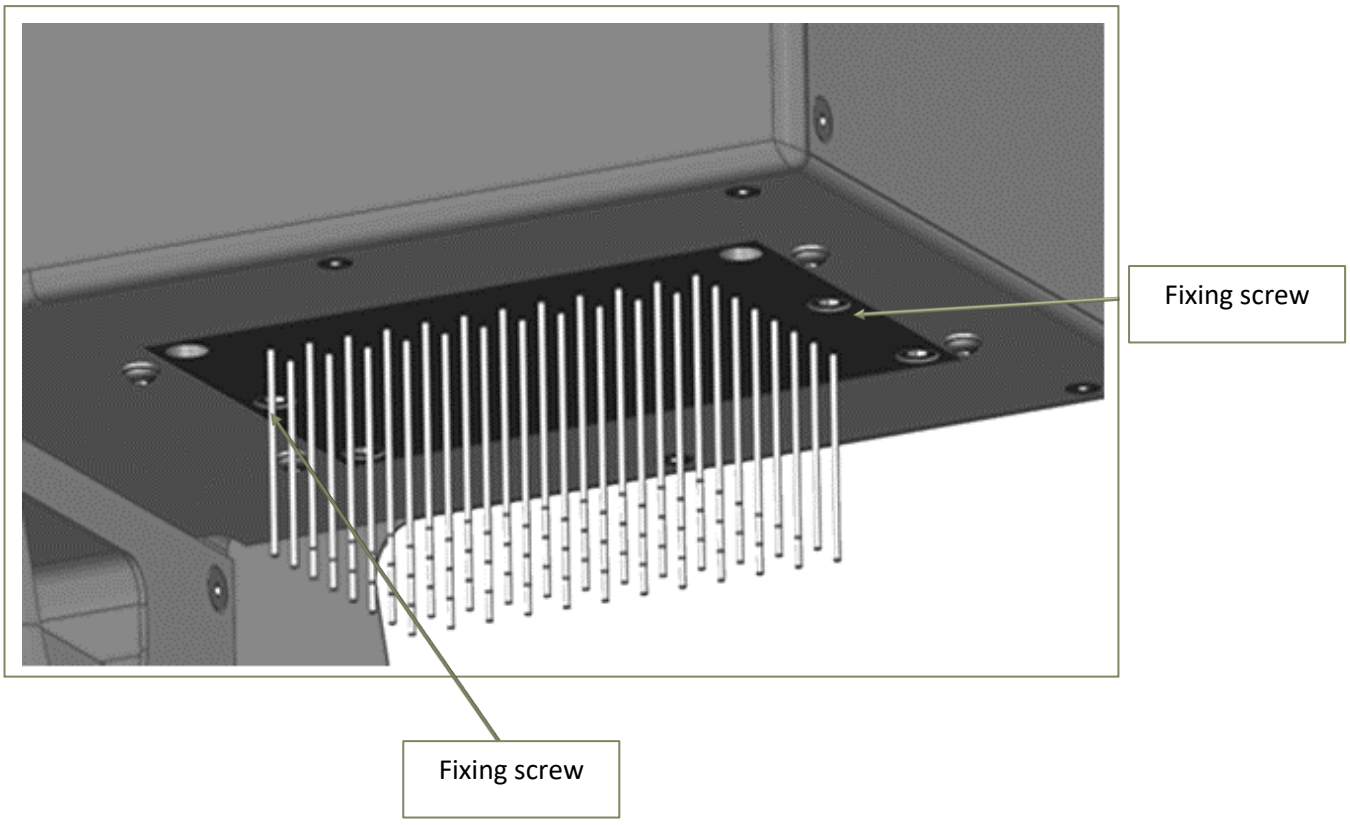
Affixing the Needle Head

Before removing / changing the needle head, disconnect the unit from any electrical supplies and gas. Also ensure Ultravap Levante has cooled down sufficiently if used.

- Remove the safety guard.
- To remove the needle head, remove the two fixing screws, using the hex key provided. Turning the unit on its side may make this process easier (ensure it is placed on a suitable surface and a cloth is used if necessary for protection).

To ensure the needle head is removed smoothly, loosen a small amount on each screw until the needle head is free.

- Carefully remove the needle head, avoid bending or damaging needles.
- Inspect gasket for tears and replace if needed.
- When replacing the needle head, great care must be taken to ensure that the gasket is present and fitted correctly. For ease of fitting, the needle head will fit either way round.



5. Operation

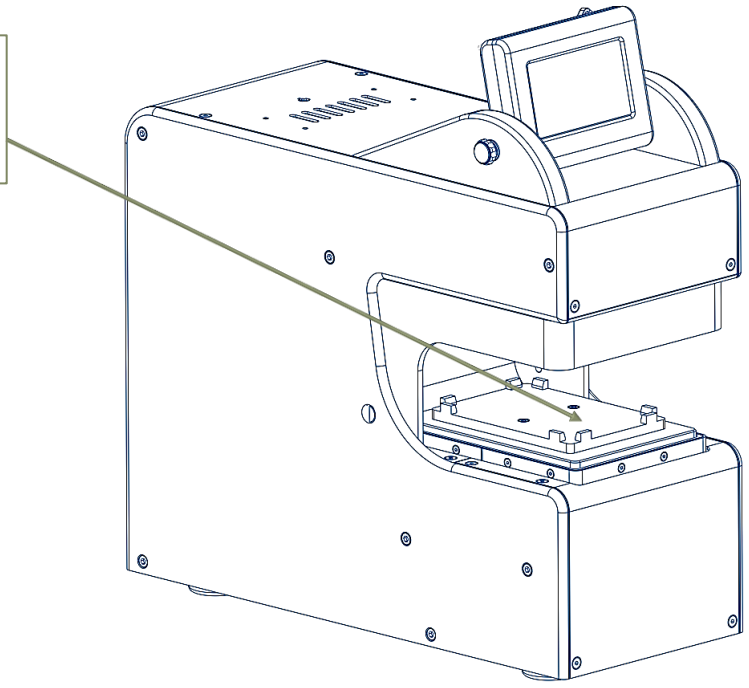
Ensure that the information and instructions provided in section **1. Safety Information** have been reviewed prior to unpacking, installing, or operating the product. This includes secure placement of the unit on a suitable and stable workbench, as well as use of appropriate PPE.

5.1 Starting Up

Once the unit has been powered up the loading screen below will appear, whilst this screen is displayed the system will home the carrier (if it is not in the home position already).

Loading Screen

Ultravap Levante in the home position (carrier down)

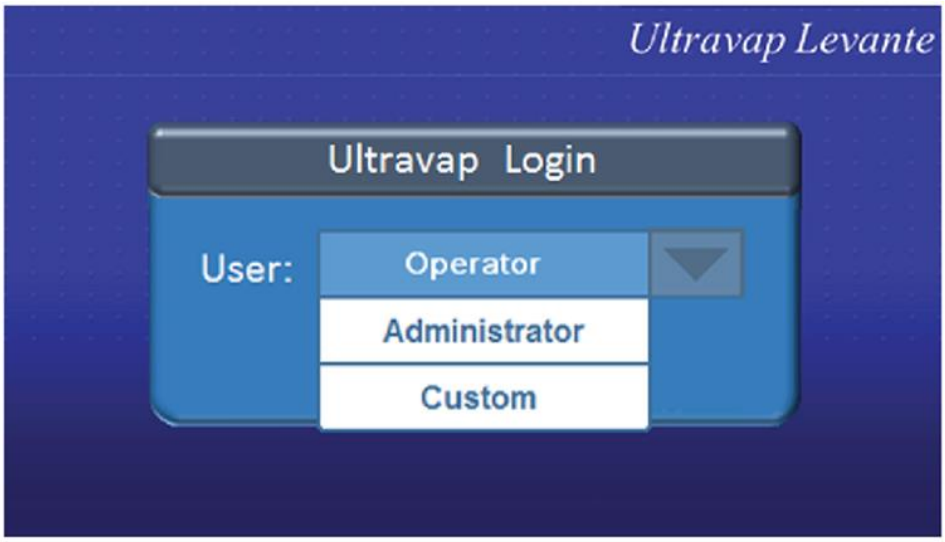


5.2 User Login

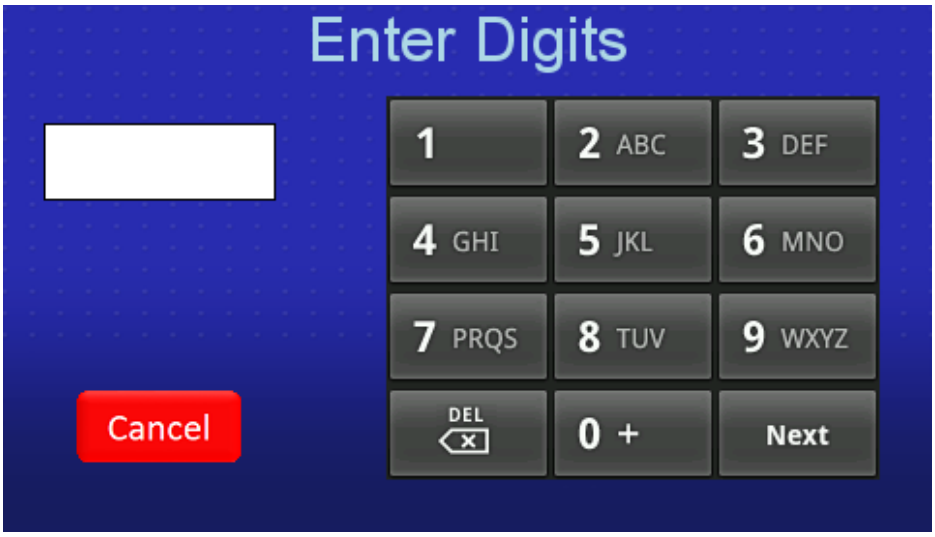
- To start using your Ultravap Levante select Administrator from the drop-down menu
- The keypad will then be prompted
- Enter the PIN number: **5972**
- Press next to continue

Note: The Operator is the default login user and does not need a PIN to log in. The Operator has limited functionality; primarily used for solely running methods.

Login Screen



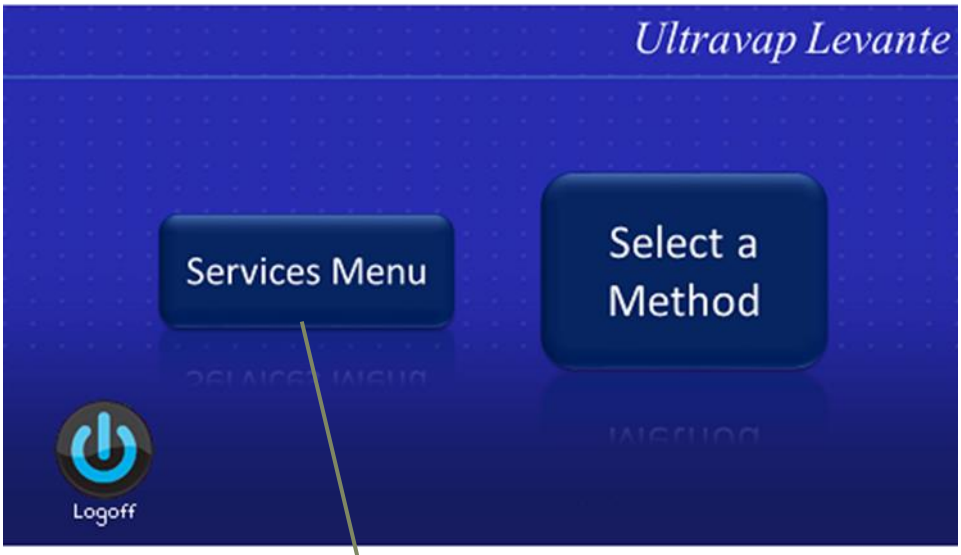
Keypad



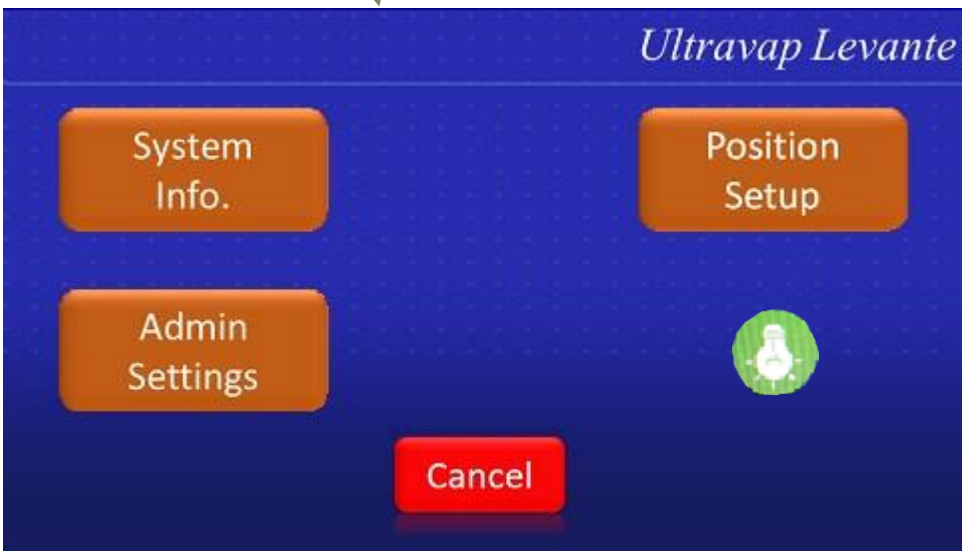
5.3 Main Menu

This is the Ultravap Levante main menu. From here a method can be selected to begin running a cycle or the services menu can be accessed.

Main Menu



Services Menu



The Admin Settings and Position Setup are only accessible by an Administrator.

5.4 System Information

This screen displays the Ultravap Levante's unique system information including serial number (which can also be found on the back of the unit).

System Information

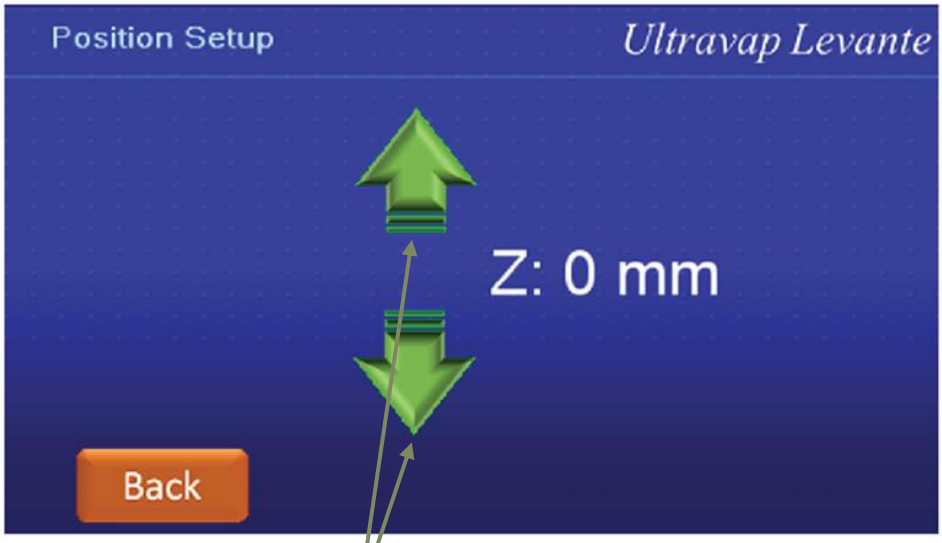
When set to on, this option will turn the system's extraction fan off after 10 minutes of operation after a cycle has completed. Otherwise, the fan will remain on at all times. – *Extraction fan is an optional extra.*

Toggle ECO Mode

5.5 Setup Position

The Ultravap Levante carrier can be moved manually by small increments (0.25mm) to check if the required sample lines up with the needles. To adjust the plate carrier, see Adjustments.

Position Setup Screen



Direction of Movement Up/Down

Setup Position – Carrier Limits

The maximum travel for the z-axis (up/down) is 55 mm.

Please note that spiral needles are longer than straight needles, so this must be accommodated when loading samples.

Plate carrier in the furthest up position

(55 mm)

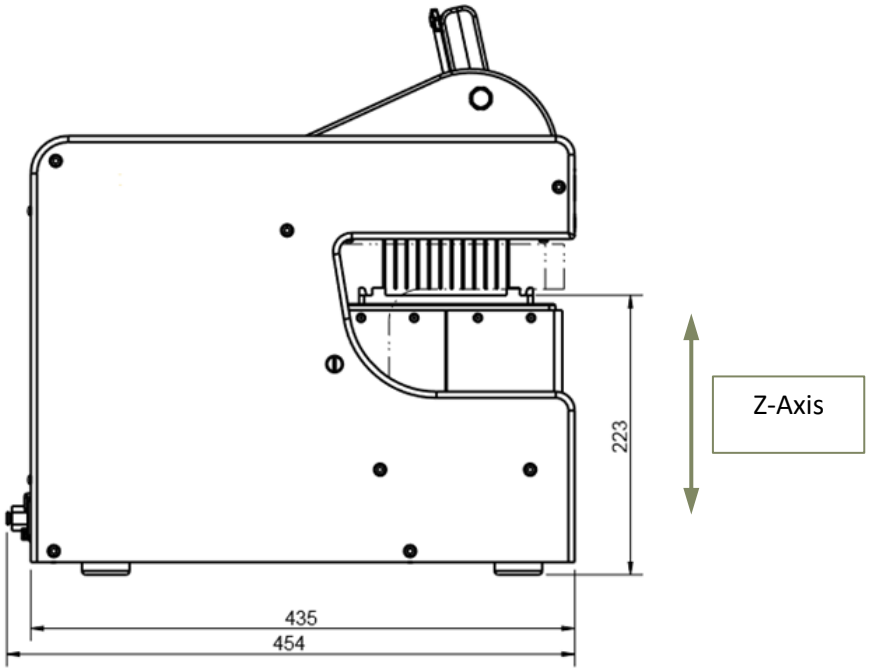
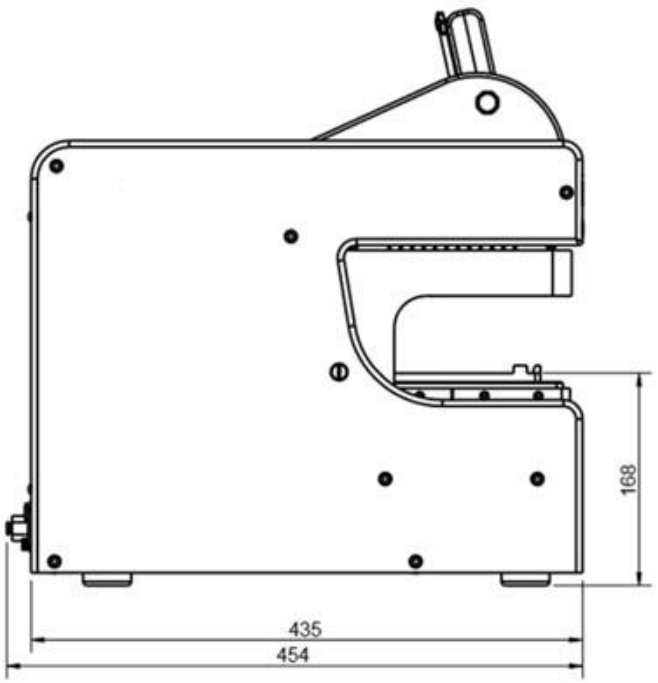


Plate carrier in the home position

(0 mm)



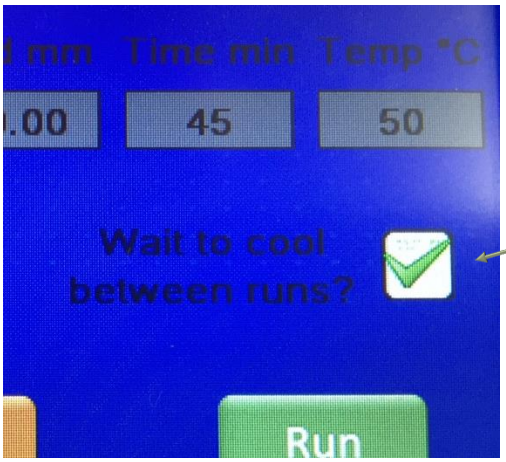
5.6 Running a Method

After selecting the Select a Method option in the main menu, the Ultravap Levante will display 10 customisable methods. These methods will be saved in the system, even after powering down. Press on the chosen method followed by “Select” to customise the cycle.

Method Selection

Once a method has been selected, it can then be edited. The start and end positions, cycle time and temperature of gas can all be changed for each stage. To change the values, simply press in the desired box and enter the required value.

Only the Administrator can edit values in the methods.



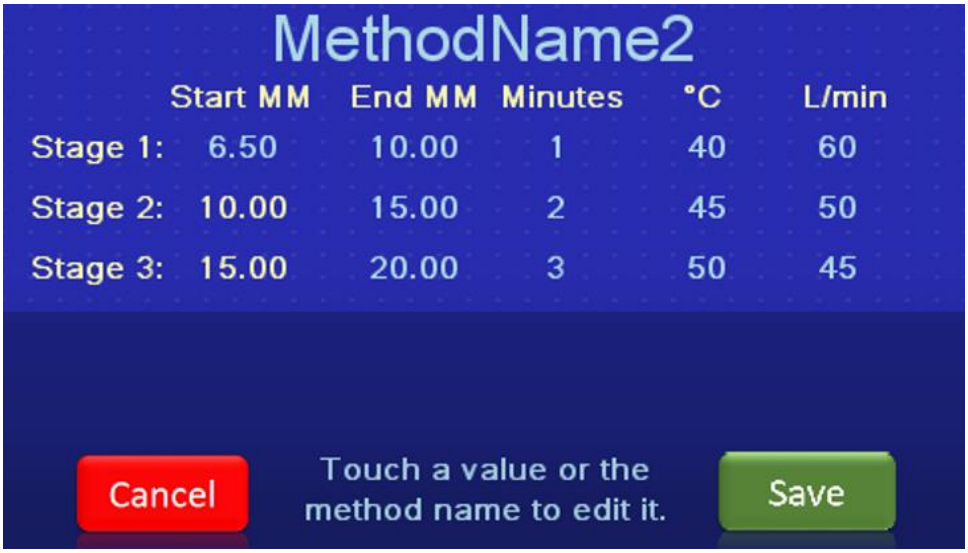
This tick box allows the unit to wait for temperature

The Ultravap Levante features three different changeable stages for running a method, this can be used to blend a program gradually over time. However, these can be removed for a simpler run by changing the time in minutes to zero on a stage.

Each stage can be different for temperature and flow; if the temperature is set lower than the previous stage it will need to cool to the desired temperature before continuing the method. The Ultravap Levante does this by continuing to blow gas with the heater temporarily off and the shuttle will be moved to home position (down) so it does not interfere with the sample. If the temperature is set higher than the previous stage; it will continue to run the method whilst increasing the temperature.

The Ultravap Levante will generally reach required temperatures faster when running on higher flow.

Method Summary



To edit the options for the start / end positions click on the text then the up / down arrows to change the values followed by the save button.

The Ultravap Levante will move the shuttle to the selected height whilst it is being changed.

Method Editing

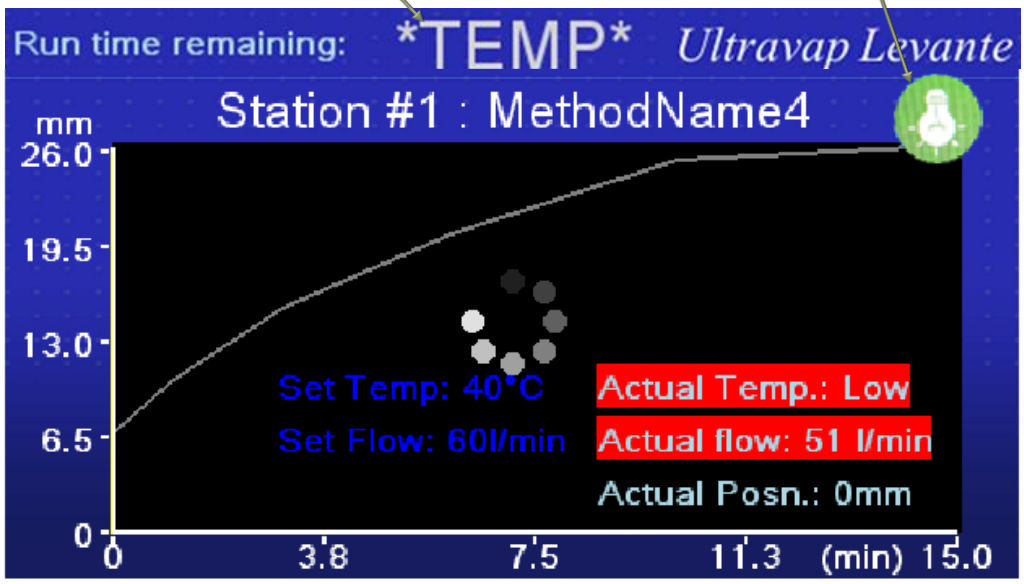
This screen is displayed during a cycle, notice when initially running a cycle the instrument will need to reach the required temperature. This screen shows the set temperature at 40°C, and the flow set to 60 litres per minute.

The instrument may take a few minutes to reach required temperature, especially high temperatures from cold.

TEMP to indicate instrument heating / cooling to required temperature

Toggle light switch to activate LED strip above plate carrier

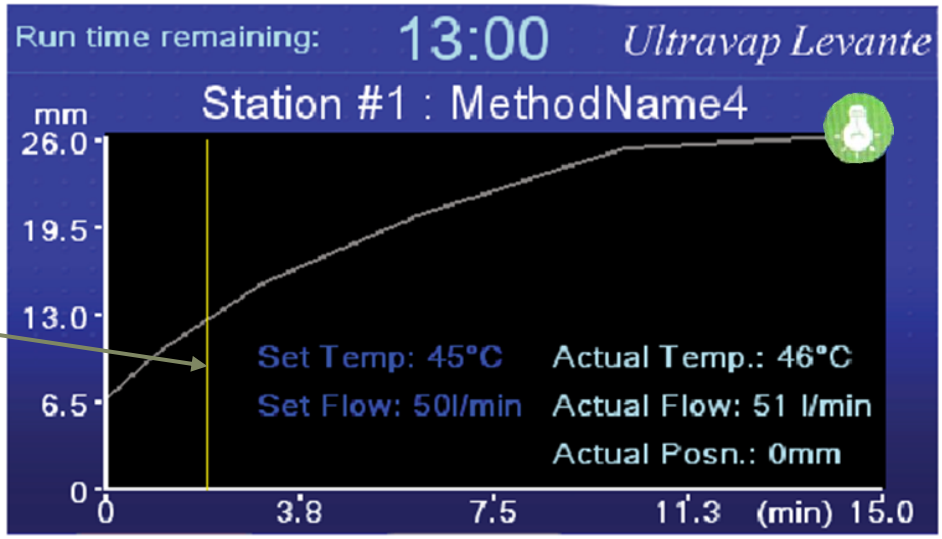
Method Running



Once the instrument has reached the required temperature, it will begin to run the set method. The screen will display a real-time graph to represent the distance the carrier is moving (mm) over the time (min). A yellow bar represents the current position.

Method Running

Current position



Once the instrument has finished running a method, the screen will indicate the evaporation is complete and the carrier will lower.

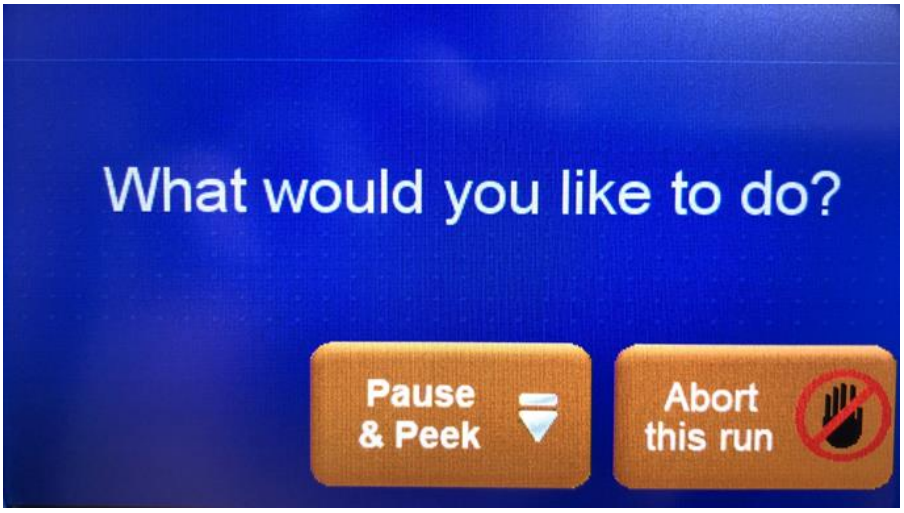
The instrument may take a few minutes to reach required temperature, especially high temperatures from cold.

Method Complete

5.7 Pause & Peek

While the Ultravap Levante is running, there is a feature that enables the user to pause the current method and lower the carrier. To use this; simply tap the centre of the screen and this menu will appear:

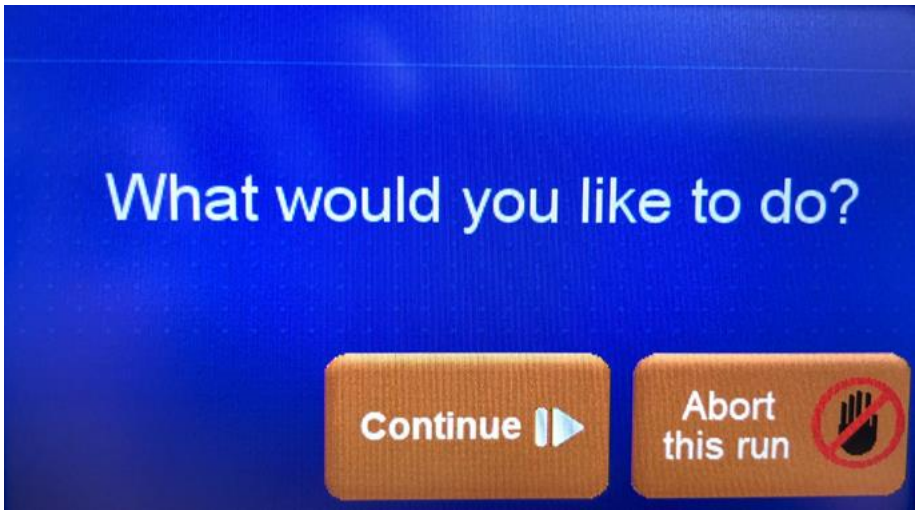
Pause & Peek



This will then lower the carrier so that the user has easy access to the plate or tubes. If the user selects "Continue" the method will resume where it left off.

If no selections are made; the method will go in to an automatic shut down after 10 minutes. This will then leave the carrier in the lowered position until the user aborts the run.

Continue

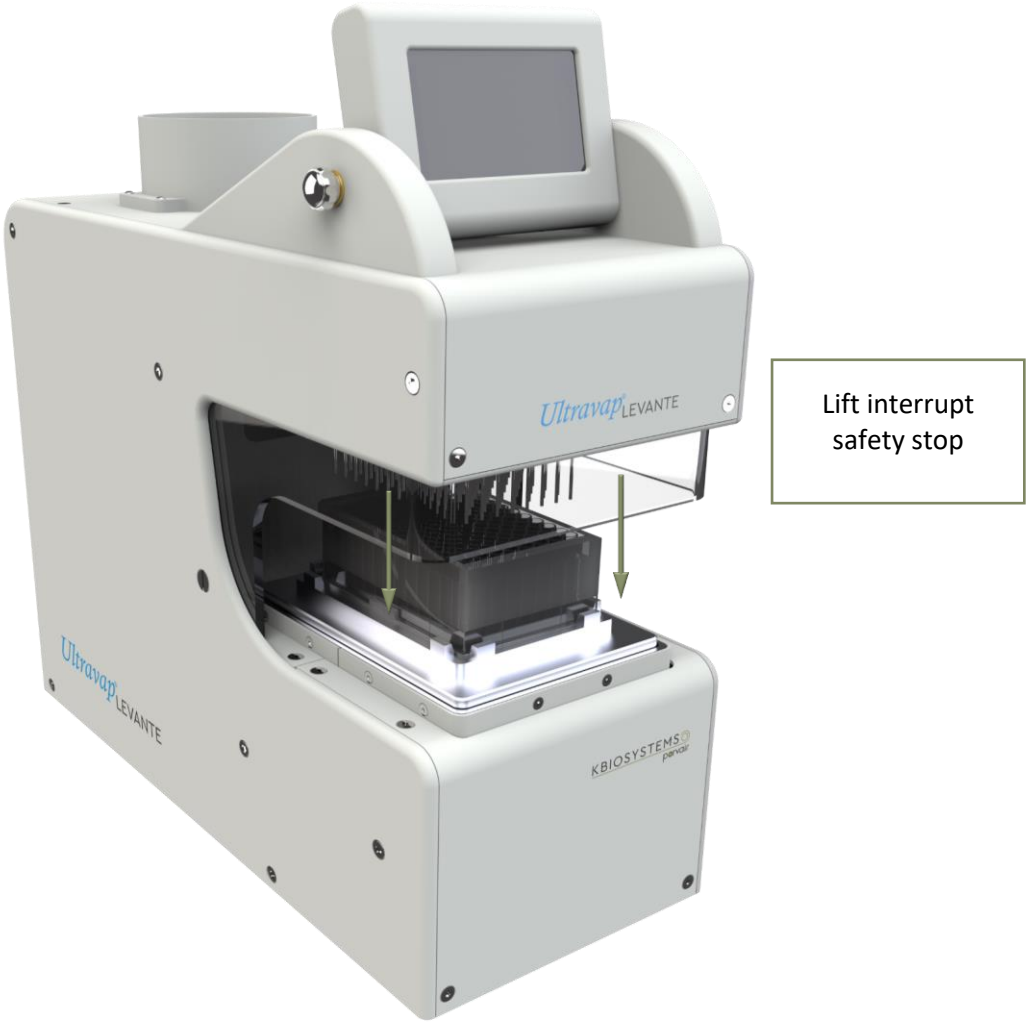


5.8 Error Messages

Safety Stops

The Ultravap Levante is fitted with interrupt safety stops on the z-axis (up/down).

The plate carrier is spring loaded on switches, so that if there is any conflicting objects or collisions the springs will compress and activate the safety switches, thus preventing any further movement until the error message is closed.



If at any time any obstructions occur, the corresponding error message will appear:

Error Clearing

As soon as an obstruction occurs and an error message appears, the instrument will stop all movement. Once the user has cleared the error, by pressing the clear button, the carrier will then move to the home position (down).

Low Flow

Whilst running a method, if there is low gas supply for a prolonged period of time or the supply is cut; a low flow error message will be displayed. The method running will be cancelled until the gas supply is above 20 litres per minute, the method will also need to be restarted.

5.9 Factory Reset

How to Reset Ultravap Levante

The Ultravap Levante can be reset to its factory settings, the methods and positions stored will have to be re-programmed. This feature can help to eliminate any re-occurring bugs that may be in the software.

All calibration settings will be lost after a factory reset.

6. Remote Communication Protocol

Remote Communications Setup

The Ultravap Levante can be configured for remote computer operation using the following commands. Connection between the Ultravap Levante and the host PC is via a correctly configured RS232 cable.

Serial Port Set-up

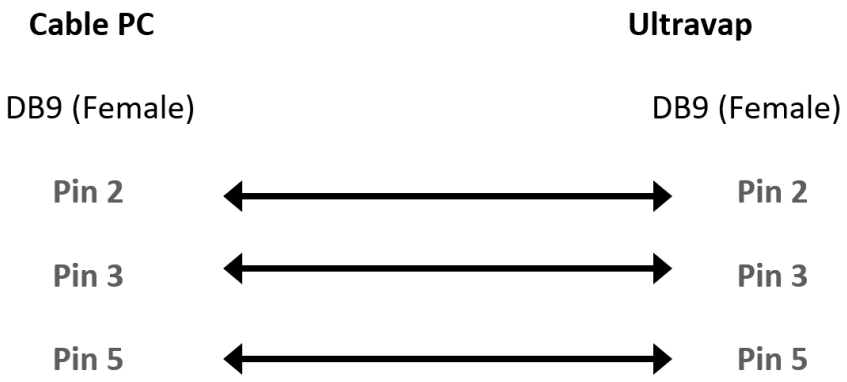
Baud Rate: 9600 Data

Bits: 8

Parity: none

Stop Bits: 1

Handshaking: none



Message Response Time

The Ultravap Levante responds to each message with 100 milliseconds.

System Initialisation

The system automatically initialises on power up

While initialising the system status is reported as „busy" (status bit 0 is set to 1)

Status Message

PC sends: ?<cr>

Ultravap Levante replies: <status byte><cr>

<cr> = Carriage return

The status byte is a hexadecimal value represented in ASCII, i.e. the characters „FF" means 0xFF hex.

bit values:

bit 0 busy

bit 1 error

Begin Evaporation Command

PC sends: R<cr>

Ultravap Levante replies: ok<cr> if the evaporation operation has commenced

or err<cr> if it unable to start the operation

The Ultravap Levante will not start the evaporation if the following conditions exist:

bit 0 busy

bit 1 error

Error Message

PC sends: E<cr>

Ultravap Levante replies: ##<cr>

where ## is a decimal value represented in ASCII i.e. the characters „01" means error 1

Error numbers:

1	No or Low Gas	Gas supply is cut off / restricted
3	Obstruction	Platform movement is obstructed
4	Home	Platform fails to reach home position
6	Thermocouple	Thermocouple failure

Setting Evaporation Parameters

In addition to the standard parameters in the form

P%=###<cr> and P%<cr>

The following parameters are possible in the form

P%%=###<cr> and P%%<cr>

Parameter	Description	Units	Limits
01	*Gas Temperature 1	˚C	1 to 80
02	*Gas Temperature 2	˚C	1 to 80
03	*Gas Temperature 3	˚C	1 to 80
04	*Gas Temperature 4	˚C	1 to 80
05	*Gas Temperature 5	˚C	1 to 80
06	Distance 1	0.25mm	1 to 220
07	Distance 2	0.25mm	1 to 220
08	Distance 3	0.25mm	1 to 220
09	Distance 4	0.25mm	1 to 220
10	Distance 5	0.25mm	1 to 220
11	Distance 6	0.25mm	1 to 220
12	Time 1	Minutes	1 to 60
13	Time 2	Minutes	1 to 60
14	Time 3	Minutes	1 to 60
15	Time 4	Minutes	1 to 60
16	Time 5	Minutes	1 to 60
17	**Gas flow 1	5L/min	1 to 18
18	**Gas flow 2	5L/min	1 to 18
19	**Gas flow 3	5L/min	1 to 18
20	**Gas flow 4	5L/min	1 to 18
21	**Gas flow 5	5L/min	1 to 18

*For gas temperature the Ultravap has no direct cooling facility, The Ultravap's lowest achievable temperature is ambient.

**For gas flow the low flow error may appear if the flow rate is set to less than 20 L/min also the temperature will not increase if the flow is set to less than 30 L/min.

Reading Evaporation Parameters

PC sends: P%%<cr>

Ultravap replies: ###<cr>

where %% is the parameter number and ### is the parameter value

%% is a single digit decimal number and ### is a 3 digit decimal value represented in ASCII

e.g. To read the current temperature 1 setting

PC sends: P1<cr>

Ultravap replies: 050<cr> if the temperature setting is 50ºC

Extended Commands

PC sends Z<cr> Run is cancelled and platform returns to home position

F<cr> Ultravap replies with set temperature

C<cr> Ultravap replies with current platform position in mm

T<cr> Ultravap moves through run position and moves to home

V<cr> Ultravap replies with time left for current run

A<cr> Ultravap replies with current temperature during run

H<cr> System performs home function

Other Useful Functions

stageXstartpos is in mm

stageXendpos is in mm

stageXtime is in minutes

stageXtemperature is in degrees C

stageXflow is in L/min

Set Remote Method

PC Sends

S!

stage1startpos,stage1endpos,stage1time,stage1temperature,stage1flow,stage2startp
os,stage2endpos,stage2time,stage2temperature,stage2flow,stage3startpos,stage3en
dpos,stage3time,stage3temperature,stage3flow,stage4startpos,stage4endpos,stage4t
ime,stage4temperature,stage4flow,stage5startpos,stage5endpos,stage5time,stage5te
mperature,stage5flow

Where values are same as above.

Query Local Method

PC Sends Mxx?<cr>

Levante replies

Mxx!

methodname,stage1startpos,stage1endpos,stage1time,stage1temperature,stage1flow
,stage2startpos,stage2endpos,stage2time,stage2temperature,stage2flow,stage3startp
os,stage3endpos,stage3time,stage3temperature,stage3flow,stage4startpos,stage4en
dpos,stage4time,stage4temperature,stage4flow,stage5startpos,stage5endpos,stage5t
ime,stage5temperature,stage5flow

Where values are as above plus:

xx is method number 0-14

methodname is ascii string of no more than 15 characters

Set Local Method

PC Sends

Mxx!

methodname,stage1startpos,stage1endpos,stage1time,stage1temperature,stage1flow
,stage2startpos,stage2endpos,stage2time,stage2temperature,stage2flow,stage3startp
os,stage3endpos,stage3time,stage3temperature,stage3flow,stage4startpos,stage4en
dpos,stage4time,stage4temperature,stage4flow,stage5startpos,stage5endpos,stage5t
ime,stage5temperature,stage5flow<cr>

If a command is successful the Levante will reply ok, if not the Levante will reply errr.

7. Maintenance and Troubleshooting

Unit repairs and servicing are to be undertaken only by approved Kbiosystems personnel. Do not use cleaning agents or solvents on the unit.

7.1 Cleaning

- Before using any cleaning or decontamination method, other than that recommended by the manufacturer, users should check with the manufacturer that the proposed method will not damage the unit.
- Always remove the power and pneumatic supplies before cleaning the unit.
- Never turn on power and pneumatic supplies before the unit is fully dry.
- **DO NOT USE ACETONE OR ABRASIVE CLEANERS.**

Cleaning / Examining Needles

It is occasionally necessary to clean or examine the needles. To facilitate either of these operations remove the needle head according to previously noted instructions – *refer to* ***Fitting / Changing the Needle Head***.

To clean contaminated needles, carry out one of the following procedures:

- Autoclave the needle head according to your company's standard protocol.
- Using a 2 ml deep well microplate, immerse the needles fully into the plate, partially filled with a suitable strong solvent. DO NOT use strong alkali solutions since they could damage the aluminium manifold plate. Ensure that the cleaning solution only comes into contact with the needles.
- After a suitable period of time (possibly overnight), remove the needle head from the solvent and examine. If it has been cleaned satisfactorily/decontaminate it with a suitable solvent or de-ionised water. Reinstall the needle head and operate the Ultravap for several minutes until needles are completely dry.

Cleaning the Needle Head

This can be achieved in two ways:

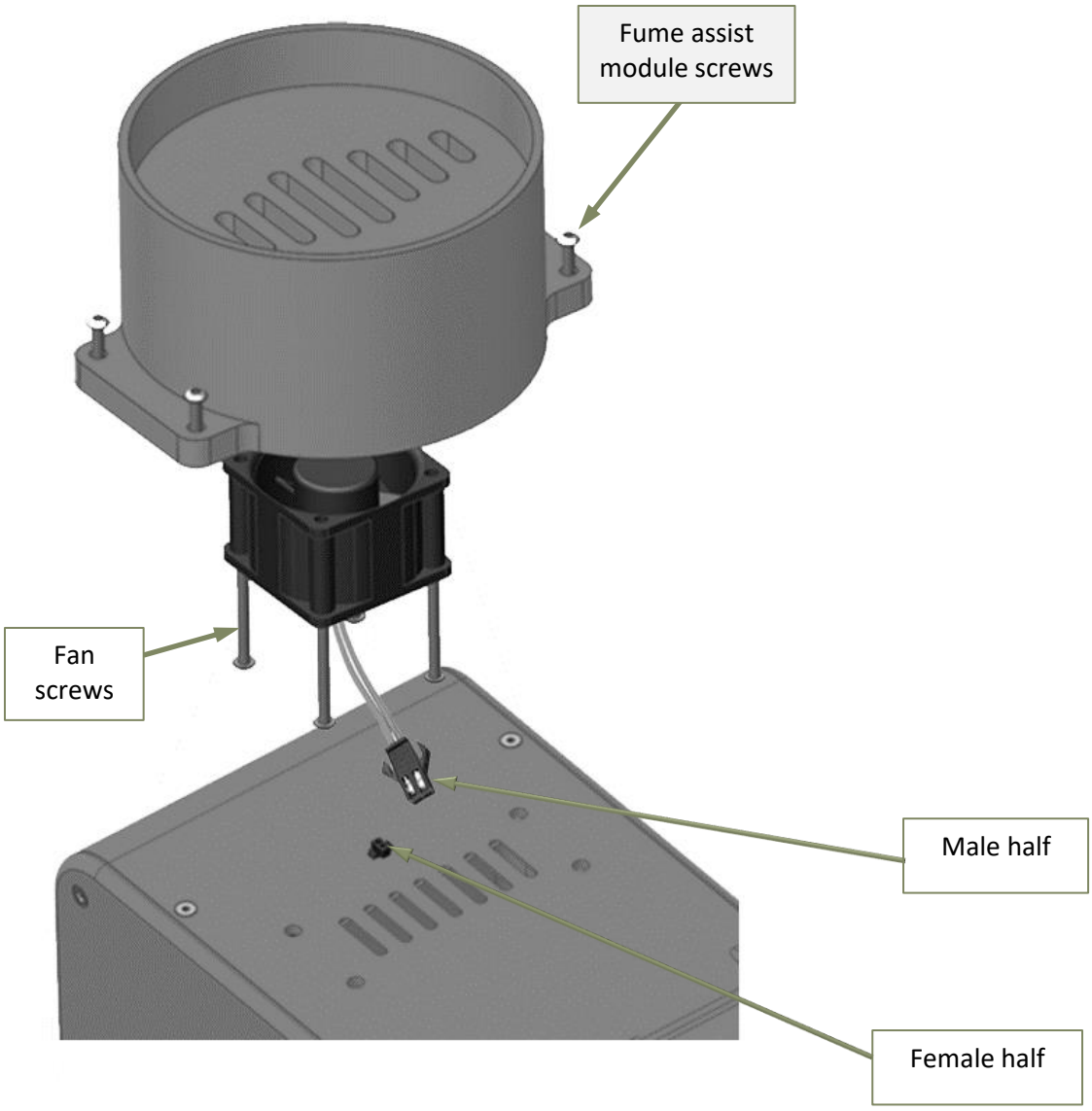
- Remove the needle head and autoclave to your company’s standard protocol.
- Using a 2.0ml deep well micro-plate, immerse the needles fully into the plate, filled with a suitably strong solvent (Nitric acid is commonly used).
- After a suitable period of time, remove the needle head from the plate and operate the Ultravap Levante for several minutes, until the needles are completely dry.

7.2 Installing the Fume Assist Module

The extraction fan is an optional extra for the Ultravap Levante.

To install the fume extractor, follow these steps:

- Connect the male and female hales of the black connectors so that a click is heard.
- Locate the four mounting screws in each of the four holes on the fume extractor hood.
- Tighten each screw gradually before fully tightening any fully. Ensure to take care and not overtighten.



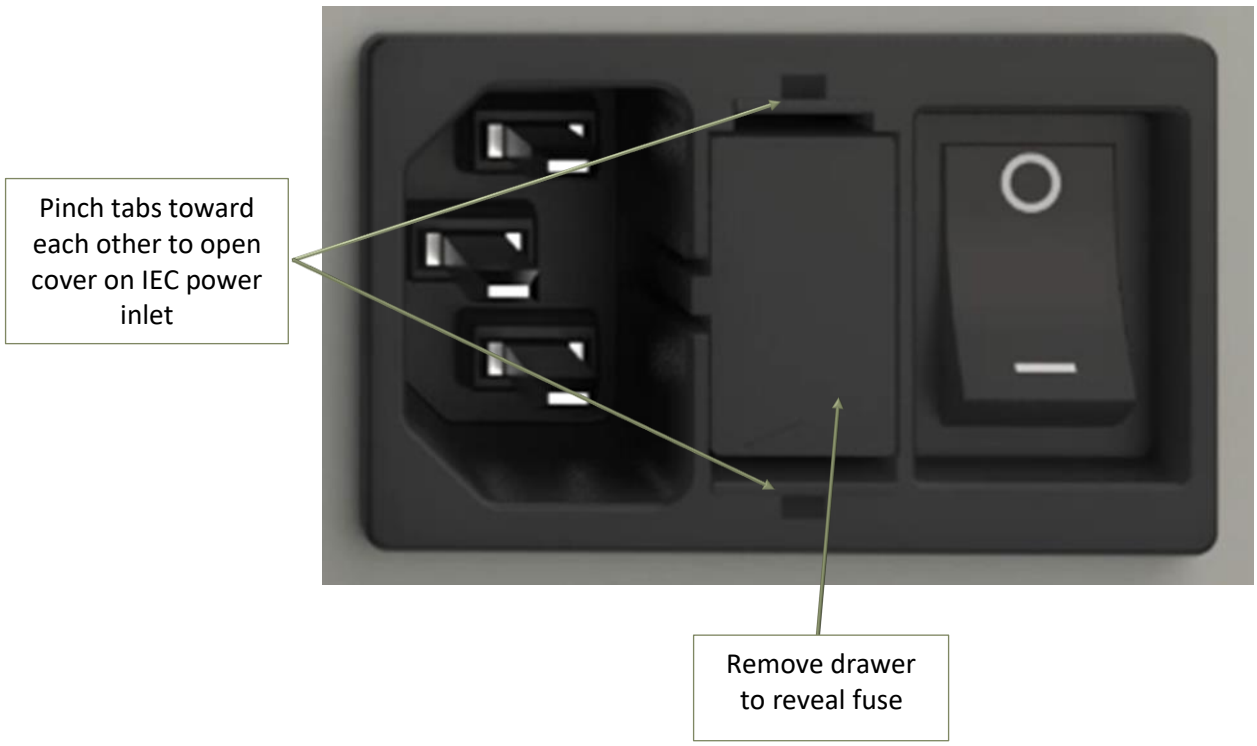
7.3 Changing Mains Protection Fuse

To replace mains protection fuse, in the event of failure, carry out the following procedure:

- Switch off and disconnect from mains power supply.
- Pinch tabs together (can use small flat-bladed screwdriver) to open fuse cover on IEC mains power inlet.
- Replace defective fuse – ensure replacement fuse is of the correct rating – refer to Specifications and System Requirements.
- Close fuse drawer and cover.
- Reconnect to mains power supply, switch on and test.

Only refit the correct type of Fuse. Must be IEC127 approved for use in EC Countries.

Must be C.S.A. or UL listed or recognised for use in Canada or the United States of America.



7.4 Troubleshooting

If problems persist despite following the recommended actions below, then contact Kbiosystems for advice. See section **8. Warranty** for contact information.

Problem	Recommended Action
Nothing happens when the unit is switched on	• Check power to the unit. Check the condition of the fuses.
Flowing gas does not heat	• Check that the inlet gas pressure is greater than 4 Bar (60 psi). Turn the unit off and on again to reset heater.
No gas emits from the needles	• Check that the gas inlet supply is sufficient. Check integrity of head gasket. Check for gas leaks.
Certain wells do not dry down	• Check visually that the needles are not blocked, bent or damaged. Due to the nature of the heated gas, the pins towards the centre of the head plate will generally be slightly warmer.
The instrument continues to emit gas after a method has finished	• Turn the unit on and off to reset the gas regulation.

Table 5: Ultravap Levante Troubleshooting

7.5 Service, Repairs & Spare Parts

Spare parts and optional extras are available from Kbiosystems. See section **8. Warranty** for service and sales contact information.

8. Warranty

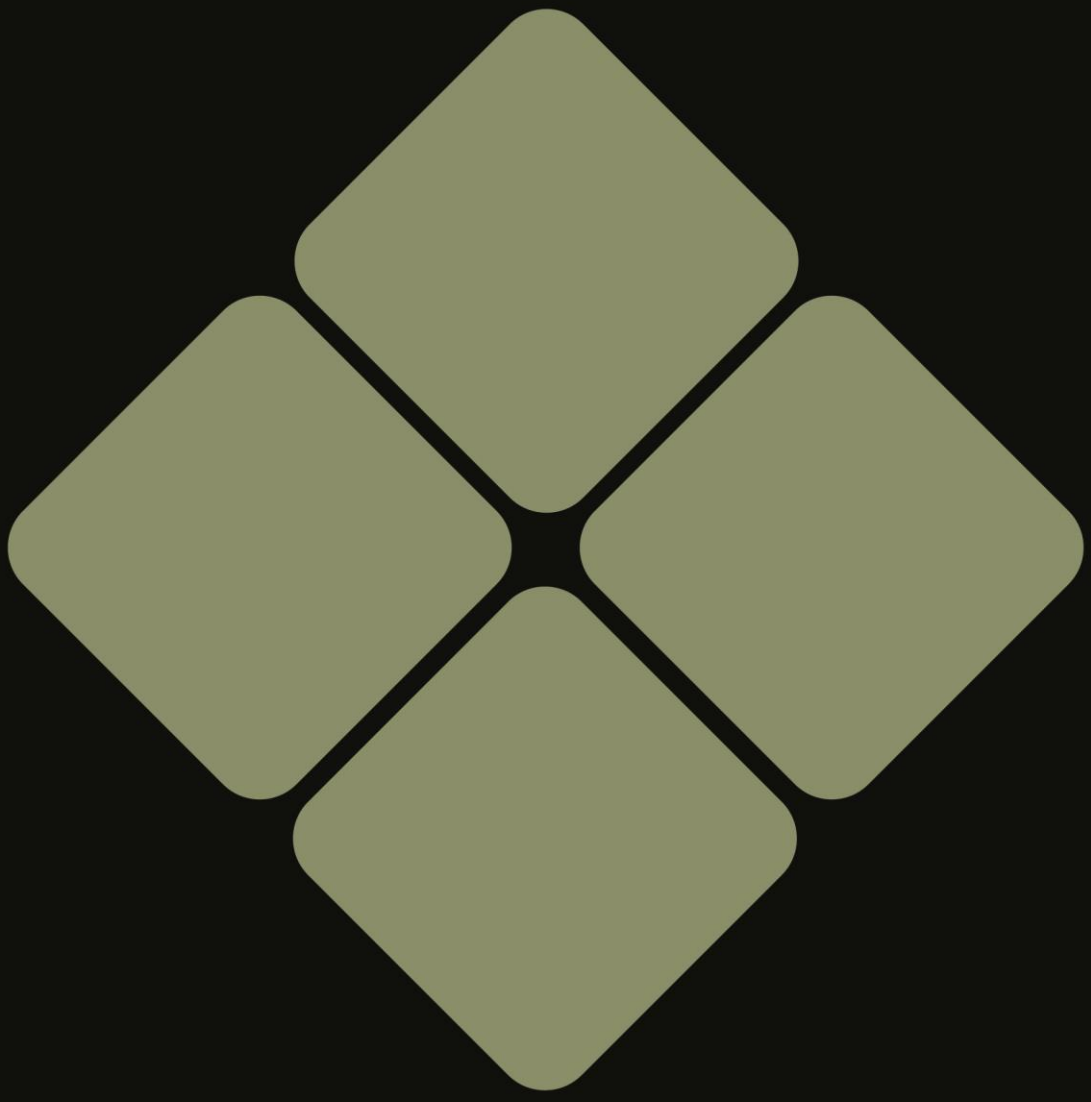
The Ultravap Levante is provided with a 1-year back-to-base warranty as standard. The warranty is applicable from the date of purchase and covers repair or replacement by Kbiosystems if the product is defective or non-functional. Exclusions apply:

- Products purchased second-hand or from unauthorised vendors. Only new products purchased from Kbiosystems are covered.
- Persons not listed as the original purchasers in the order information.
- Damage caused by a failure to follow the instructions provided in section **1. Safety Information.**
- Damage caused by abuse, accident, neglect, or misuse.
- Damage caused by connection to incompatible gas source.
- Damage caused by use of unauthorised (e.g., third party) components or peripherals.
- Unauthorised attempts to repair, modify, or disassemble the product by unqualified or unauthorised persons.

For further information on the warranty and returns procedure, contact Kbiosystems:

Address	Telephone	Email (Sales)	Website
Kbiosystems Ltd. 5-10 Paycocke Close, Basildon, Essex, SS14 3HS	+44 (0)1268 522431	sales@Kbiosystems.com **Email (Service)** service@Kbiosystems.com	www.Kbiosystems.com

KBIOSYSTEMS
porvair



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