

Trace<sub>2</sub>o

## UV DIGESTER HMUV1825P

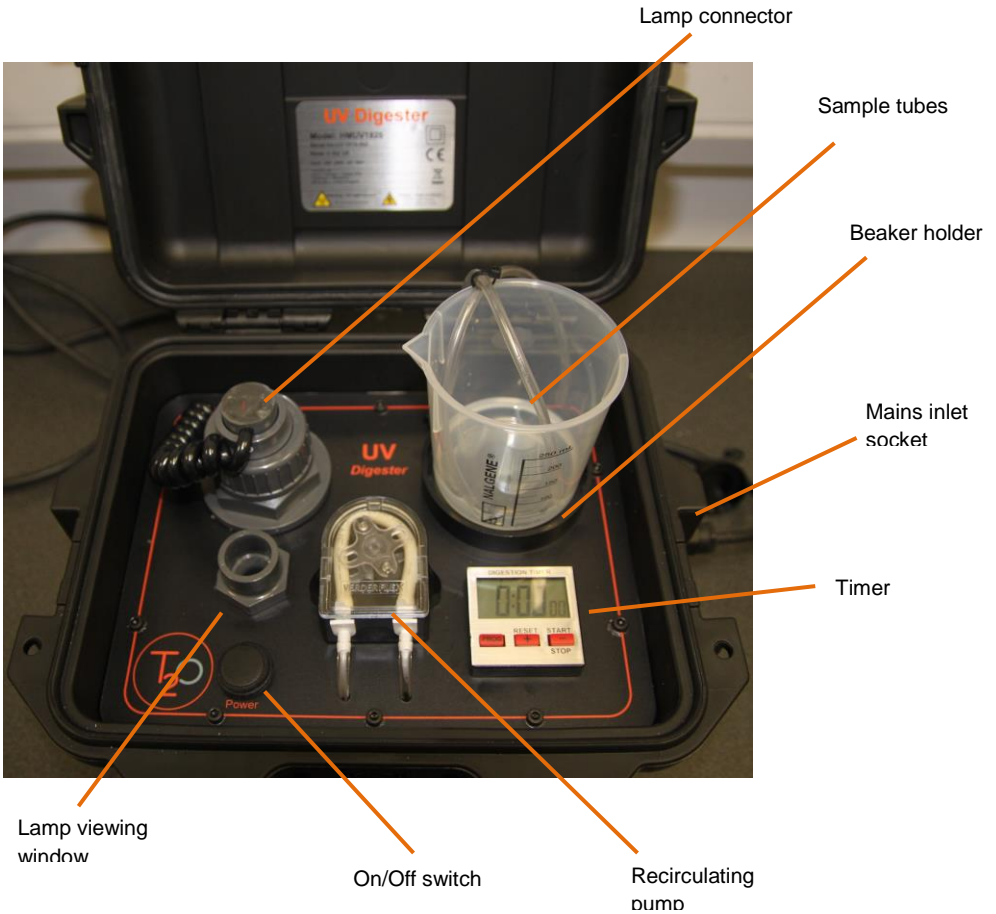
Portable Ultraviolet Heavy Metal Sample Digester



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## 1. KIT CONTENT



## 2. INTRODUCTION

The HMOV1825P is an Ultraviolet digestion system for the digestion of water samples with a high organic content. The process of digestion will break down complex organic compounds into simpler organic compounds and release metal ions bound within the organic material into the water sample. Once digested the Heavy metal content of the samples can be measured using the Trace2o Metalyser range of instrumentation.

### 3. SAFETY INFORMATION

The UV digester uses Ultraviolet light which is harmful to the human eyes.

To prevent exposure the viewing window is manufactured from a high quality UV blocking acrylic and the device is fitted with safety interlock switches such that if an attempt is made to replace the lamp while the unit is switched on it will switch off automatically.

The unit contains no user serviceable parts and as such no attempt should be made to open it. Any attempt to do so will invalidate the warranty. All user serviceable parts are accessible from the outside of the unit.

It is important to note that the system contains a delicate quartz glass component and as such care should be taken not to allow the unit to be subjected to vibration or shock. Should the instrument receive a shock for any reason it should be returned to the dealer for inspection.

## 4. SETTING UP THE UNIT

Remove the unit from its packaging and place lid upwards on a flat surface. Connect the power lead from the power pack to the socket on the right hand side of the unit.



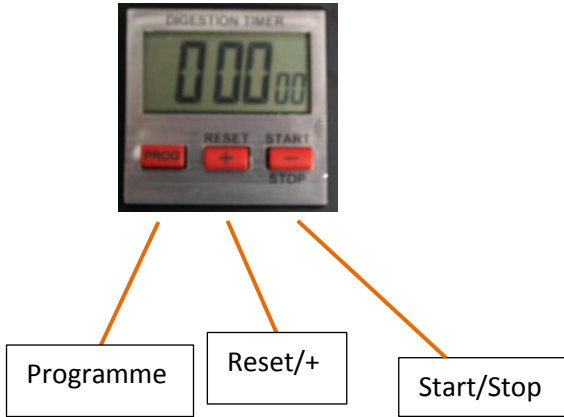
Open the lid of the unit and locate the 'Power' switch

Depress the switch to the on position. The display on the timer will turn on.

Fill the supplied sample beaker with the desired volume of sample and place the beaker in the holder. Place the two sample tubes into the beaker. The system is a re-circulating system so only one beaker is required.

## 5. PROGRAMMING THE DIGESTION TIME

The digester is fitted with a programmable countdown timer. A digestion time up to 10 hours can be programmed although 30 mins to 1 hour is sufficient for most samples.



To set the timer press the 'programme' button. The seconds will flash. To adjust the time press the + and - buttons to adjust the time up or down respectively. Subsequent presses of the 'programme' button will step through from seconds to minutes to hours. Pressing the 'programme' button again will set the time. (If the digits are flashing the timer will not operate).

Once the time is set press the 'start' button. The pump will turn on and the lamp will illuminate. This can be confirmed by looking through the viewing window. The timer will start counting down and an alarm will sound when the cycle has completed. If the logo does not illuminate the bulb will need replacing. (See maintenance section).

After the sample is complete, press reset to set the time back to the pre-programmed time.

Lift the tubes clear of the sample water and start the timer again. Run until the tubes are empty of liquid.

**Note :** Running the pump dry will not harm the system.

## 6. CARE AND MAINTENANCE

### **Routine cleaning.**

To avoid any cross contamination of samples the system should be rinsed through with de-ionised water. Place the inlet tube into a clean beaker filled with 50ml of de-ionised water and the outlet tube into a second beaker. Run the instrument for 5 minutes to flush the tubes.

Once a week it is recommended to run a 0.1M solution of hydrochloric acid through the pipes.

It is not recommended to use acetone or other polar aprotic solvents to clean the UV Digester enclosure, as these can damage the unit. Trace2o recommends the use of mild soap solution for routine cleaning of the enclosure. The use of improper solvents will void the manufacturer's warranty.



## Maintenance

The UV digester requires very little maintenance but periodic replacement of the pump tubing and Lamp may be necessary.

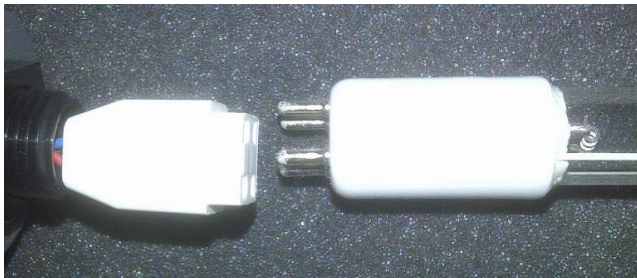
UV Lamp replacement :



Carefully unscrew the locking ring from the top of the lamp connector.



Slowly remove the lamp from the holding by lifting it vertically. Pull the lamp clear of the connector and lay it on the bench.



Grip the white connector and white end of the bulb between thumb and finger of each hand and carefully wiggle the two apart.

To fit a new lamp reverse the process taking care to insert the lamp back into the connector slowly and with no force. If held vertical and lowered carefully the lamp should slide easily back into position.

When refitting the top of the connector align the arrow on the top of the connector with the front of the instrument. If the unit fails to turn on slacken the locking ring and rotate the top of the connector with the arrow on slightly clockwise or anti-clockwise until a click is heard and the display comes on. Lock the top in this position.

## Replacing the pump tubing



Remove the pump cover by inserting a flat screwdriver blade into one of the slots and twisting.

Remove the two sample tubes from the two white inline connectors

Pull the short tube out of the pump housing.

Reverse the process to fit the new tubing. When fitting the tubing first fit the two white connectors into the two slots and then squeeze the tubing around the outside of the rollers.

After fitting the new tubing run the pump for a few seconds to self-align the tube.

## 7. WARRANTY

The HMOV1825 digester is guaranteed for one year from the date of receipt against manufacturing defects on all non-consumable parts. This warranty excludes the lamp and the pump tubing. Damage occurring due to misuse or neglect will render this warranty void.

## 8. SPECIFICATION

Power Supply :	220-240VAC 50/60Hz 20W inlet.
UV Lamp :	185nm/254nm Wavelength, 4 Watt
Sample volume :	50 – 250 ml
Sample type :	Potable, surface and ground water
Intended use:	Digestion of water samples for subsequent detection of Heavy metal content (Not suitable for water disinfection)
Sample pump :	Peristaltic pump – 12ml/min flow rate
Sampling tube :	4mm O/D 2mm ID Tygon tubing.

## 9. POWER PACK

### IMPORTANT INFORMATION FOR YOUR SAFETY

**DO NOT SHORT CIRCUIT OR TAMPER WITH THIS UNIT. ALWAYS OBSERVE CORRECT POLARITY AND SYSTEM VOLTAGE WHEN CONNECTING.**

Failure to do so may lead to a HAZARDOUS situation, damage the pack or equipment and may invalidate the warranty. Remove personal items such as rings, bracelets and watches when working with batteries.

### WARNING

Before initial use, the 230V AC portable power pack **must** be put on charge overnight (16Hrs). Failure to do so may reduce the life of the product and invalidate the warranty.

### DESCRIPTION

This 100W Portable Power Unit provides a versatile and complete power solution that is safe and easy to use. The power unit is fitted with one, high performance, 12V 12Ah lead-acid battery. It gives one output available on the outside of the unit, that is capable of powering loads up to 100W overall (depending on temperature of operation). Also incorporated is a 'low voltage disconnect' system, which prevents damage to the batteries due to over discharge.

### OPERATION

**BEFORE OPERATING THIS EQUIPMENT READ ALL OPERATING INSTRUCTIONS THOROUGHLY**

#### FOR 230V AC OUTPUT:

1. Ensure the unit is turned 'OFF'
2. Connect an AC output lead to the '230V AC OUTPUT' output
3. Connect the lead assembly to the equipment
4. Press the 'ON' button of the unit (internally)
5. The 'SYSTEM POWER' LED should illuminate

In this state, the battery voltage is continually monitored. When the battery voltage falls below approximately 10.6V, the 230V AC output will turn off to protect the batteries from becoming over discharged

## CHARGING

**THE LID MUST BE FULLY OPEN AND WELL VENTILATED WHEN CHARGING THE PORTABLE POWER UNIT. FAILURE TO DO SO COULD RESULT IN FIRE AND/OR EXPLOSION.**

### TO CHARGE FROM A 230V AC MAINS POWER SUPPLY:

1. Turn off the unit and disconnect the output lead
2. Connect the mains input lead supplied with unit (IEC320-C14) to the '230V AC INPUT' inlet
3. Connect the charger to a mains supply, and switch on

### CHECKING STATE OF CHARGE

The state of charge is best checked 2 hours after any discharge or recharge.

1. Turn off all loads
2. Press the 'ON' button of the unit (internally) The 'SYSTEM POWER' LED should illuminate
3. Press the 'Push to Test' button
4. The LEDs will illuminate to indicate the approximate state of charge of the battery

## STORAGE

To optimize performance and service life, it is recommended that the Portable Power Pack is fully charged before and during extended periods of storage, commonly referred to as a "refresh charge". Please refer to the recommendations listed in the table below:

Temperature	Shelf Life
0°C (32°F) to 20°C (68°F)	12 months
21°C (70°F) to 30°C (86°F)	9 months
31°C (88°F) to 40°C (104°F)	5 months
41°C (106°F) to 50°C (122°F)	2.5 months

Table above shows the normal storage time or shelf life at various ambient temperatures

Lead-acid batteries self-discharge more rapidly in higher temperatures, therefore it is not recommended that the batteries are stored above 30°C and should never be stored above 50°C.

## Technical Specifications for Power Pack

<p><b>GENERAL:</b>  Operating temperature  Storage temperature  Battery storage  Transportation</p> <p>Power source</p> <p>State of Charge Indication  Power Indicator</p>	<p>0°C to +50°C  -10°C to +50°C*  12 months at or below 20°C  Approved for transportation as non-spillable under the IATA transportation regulations</p> <p>1 x 12V 12Ah Sealed Lead Acid battery via 230Vac Inverter</p> <p>3 colour display with push to test button  1 visual indicator</p>
<p><b>MECHANICAL:</b>  Housing  Protection  Dimensions  Weight</p>	<p>Ruggedised case  Rated IP67 waterproof when closed  300(L) x 255(W) x 196(H) mm  3 Kgs</p>
<p><b>STANDARD CHARGER:</b>  Built-in</p>	<p><b>AC Mains Input (Mains Charging)</b>  Input range 90-250VAC, 50-60 Hz,  Input connector type IEC socket  Output current 1.5A max  Mains lead stored within pack, UK</p>
<p><b>OUTPUT:</b>  Output socket</p>	<p>1 x circular 3-pole connector, (Bulgin – PX0765/S)  10A max continuous. (Mating Bulgin – PX0731/P)</p>
<p><b>SAFETY:</b></p>	<p>Fitted with a low voltage disconnect to prevent the battery being over discharged.  The output is protected by a 10A thermal resettable fuse.</p>

*\*Refer to storage information*

*Trace2O reserves the right to change specification without notice*



## NOTES



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