Quick Start Installation Guide for V-OVG

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Notices

1.1 Contacting Owlstone

Visit the Owlstone website (www.owlstonenanotech.com) for up to date contact details and service support. For general inquires please email info@owlstonenanotech.com

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1.2 Harmful substances

The V-OVG can be used with a wide range of permeation devices many of which could, if they burst, release toxic or harmful quantities of the material they contain.

For this reason it is essential that the user conduct a risk assessment for the substances to be used in the V-OVG and establish safety protocols to cope with the release of such materials both in the normal operation of the unit and in the case of a permeation source bursting and releasing its contents all at once.

These protocols must include suitable installation (e.g. in a fume cupboard, provision of extraction, etc.) and operational procedures to protect the

operator.

Check chemical compatibility: Materials in the flow path include PTFE, Viton, stainless steel, aluminium (aluminium only upstream of permeation oven). Ensure test atmospheres are neither corrosive nor reactive with materials in the flow path. If in doubt please contact an OWLSTONE representative using the contact details provided.

1.3 Installation and Location

The V-OVG rack unit can weigh up to 25 kg.

Please take care in handling to avoid injury.

- Ensure that the rack is placed on a solid, level surface, which is able to support its weight
- Only use the OWLSTONE supplied power supply
- Ensure cabling is routed behind the system, at bench level, posing no risk of tripping. Ensure all cables are detached from the V-OVG before attempting to move the unit
- Do not place in space that is poorly ventilated or confined. Allow at least 50cm clearance from walls and free flow of air around the system
- Do not place near flammable materials
- The V-OVG system will get warm during operation, especially the oven inlets.
- Do not place liquids on or near the V-OVG. Liquid spill may cause instrument failure.
- The V-OVG has not been designed for drop tests; any such test or accidental drop will cause damage to the system.

Overview

This document is a quick guide to help with installation of the V-OVG. This document is only a supplement to the V-OVG User Manual, which must be read before using the instrument.

Sources of Further Information

The V-OVG User Manual, as well as more information on the GEN-SYS modular vapour generation system and permeation sources, is available at our support website:

http://owlstone.zendesk.com/home

For help with any further questions or problems, please contact Owlstone directly on our support address:

support@owlstone.zendesk.com

Tools Required

- 7/16” spanner
- 9/16” spanner

Note on Unpacking

The following materials are supplied with the V-OVG system:

- External power supply, power lead
- ¼” Swagelok fittings
- Sample Wafer Device, PDMS membranes
- User Manual, Decontamination Certificate

Owlstone recommend all original packaging materials are retained for future use.

Installation

1. Locate the instrument

V-OVG is designed to generate chemical vapours. To limit the user's exposure to these vapours it is strongly recommended that the V-OVG be operated in a fume hood, or well-ventilated space.

Ensure adequate space + air-flow around the unit. Do not use where ambient temperature > 30°C

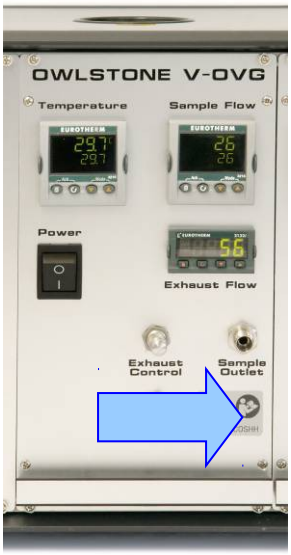
2. Gas line Installation

Remove the nylon cap from the Air Inlet port on the rear of the system.

Connect a clean dry air supply (40 psi) to the stainless steel ¼" inlet situated on the side of the rack unit. It is recommended that ¼" analytical grade stainless steel tubing be used; however refrigeration copper or PTFE tubing may also be used.

Owlstone recommend a venting mechanical toggle valve is fitted to the inlet Air supply. To open the permeation oven the user will need to vent air pressure from the system.

3. Exhaust line Installation



Remove the nylon cap from the Exhaust port on the front of each V-OVG sub-unit supplied with the system.

Connect a 2 meter exhaust line to this port venting into a fume-hood, with a ¼" Swagelok fitting. It is important to note that using longer lengths of exhaust line or an exhaust under negative pressure may affect the exhaust flow exiting each V-OVG.

4. Connect the External Power Supply

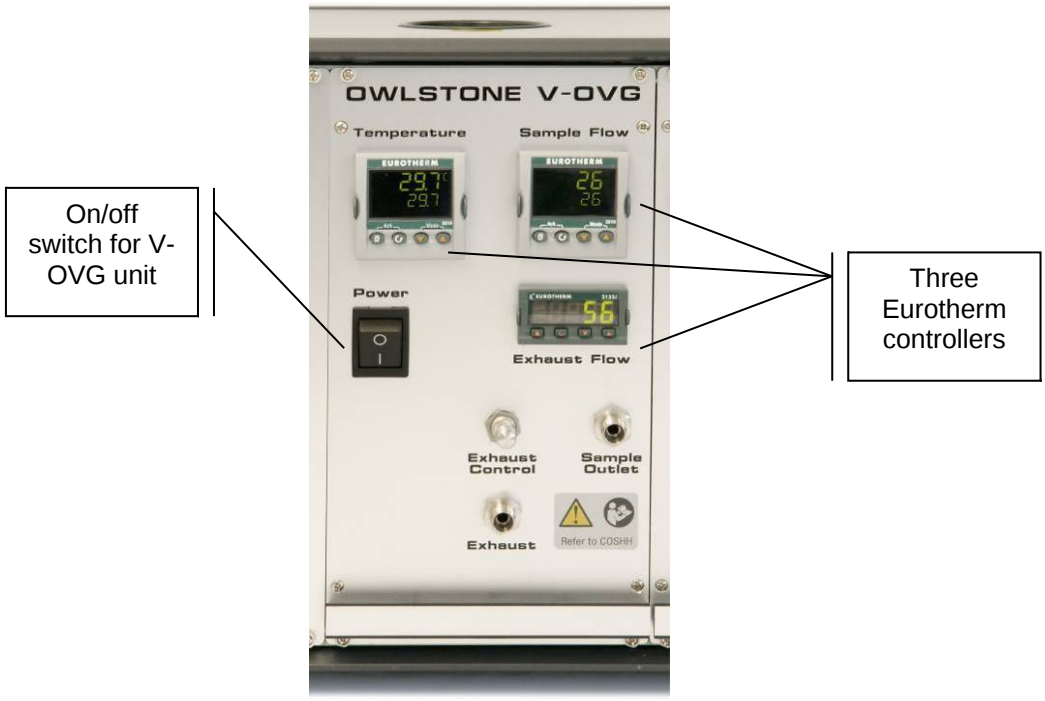
Connect the power supply to the side of the V-OVG Rack Unit and plug to your mains power supply. Ensure that the mains plug is accessible during operation.

5. Remove caps from all Sample Outlet ports

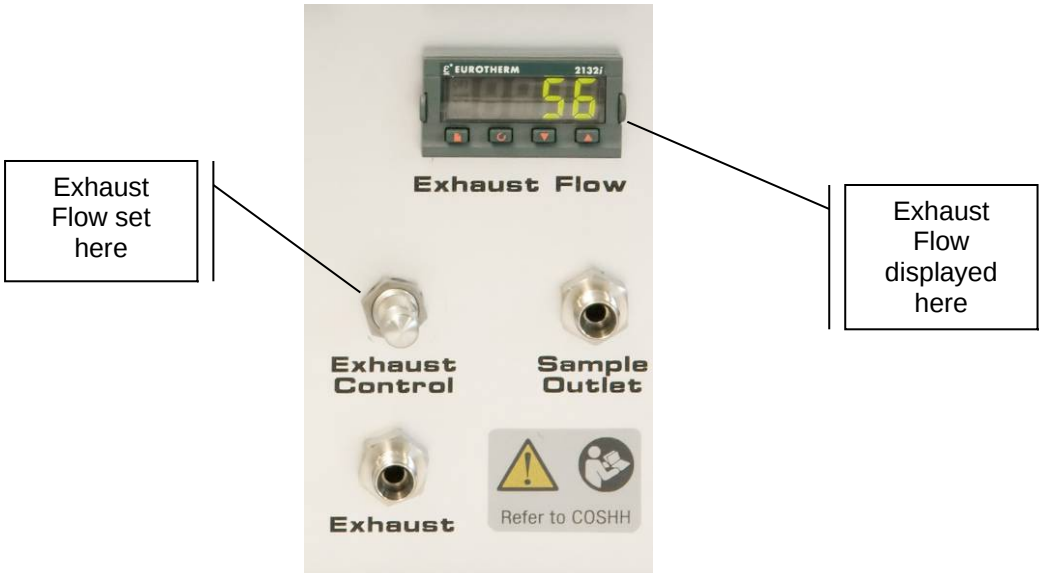
To preserve the cleanliness of the flow path Owlstone ship the V-OVG system with Sample Outlet ports capped. These caps should be removed before use.

6. Switch the power supply on

Following application of mains power the user must switch on each V-OVG sub-unit. At this point the LED displays of the three Eurotherm controllers will light up.



6. Open the Exhaust Flow Valve



To prevent a potentially dangerous build up of vapour in the permeation oven it is essential that a small Exhaust Flow is set before incubating your first permeation source.

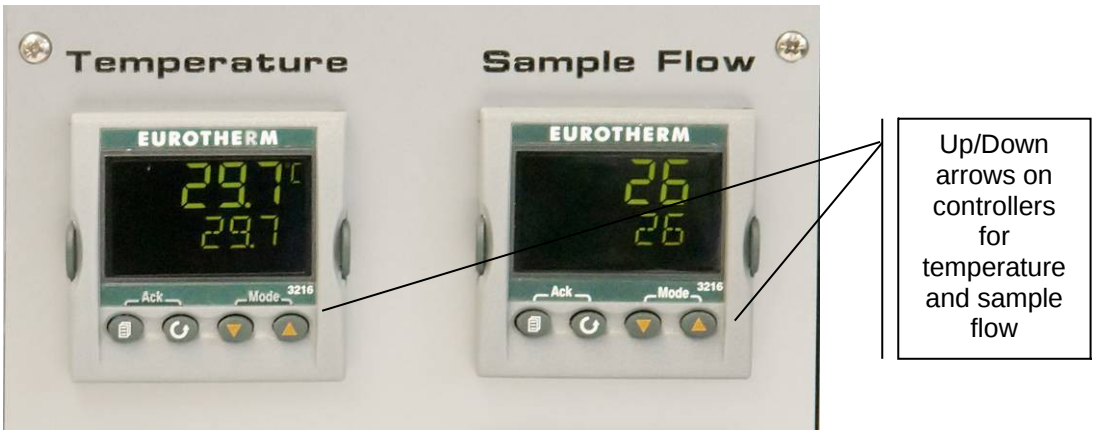
Owlstone recommend at least 100 ml min-1 split flow at all times.

Please note that the minimum exhaust flow is around 30ml min-1.

The needle valve controlling the exhaust flow is designed not to close fully. When it is in its closed position there will still be an exhaust flow of ~30 ml min-1. This prevents vapour building up in the oven and back diffusion into upstream gas lines.

Do not attempt to force the needle valve shut as this will damage the thread and the seal. Do not cap off the exhaust outlet.

7. Set permeation temperature



Using the Up-Down arrows on the temperature controller set your intended incubation temperature. Before loading your first permeation source it is sensible to wait for the oven temperature to stabilize at the set-point.

8. Set Sample Flow

Using the Up-Down arrows on the flow controller set your intended sample flow rate.

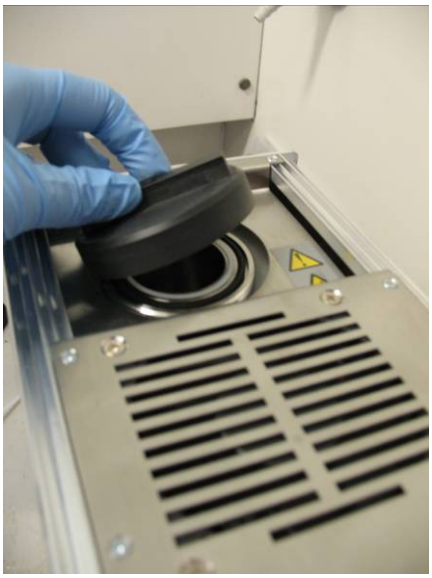
Note: The total flow across the permeation source is the sum of the sample flow and exhaust flow.

9. Check Oven Temperature and Sample Outlet flow

Before incubating a new permeation source it is good practice to check both the oven temperature and the Sample Outlet flow.

To do this you will need a calibrated temperature probe and flow meter. Detailed procedures are included in the **Calibration** and **User Maintenance** sections of the V-OVG User Manual.

10. Inserting a permeation source



To insert a permeation source into the oven, first disconnect the air supply to the V-OVG and wait for the unit to depressurise. (Sample and Exhaust Flows should read 0 ml min^{-1}). Unscrew the black lid of the oven, located on the top surface of the V-OVG.

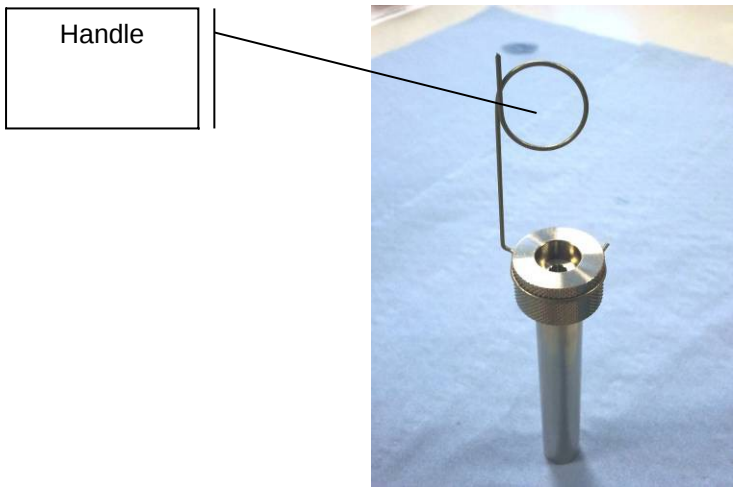
Insert the permeation source into the central well of the oven and re-screw the lid.

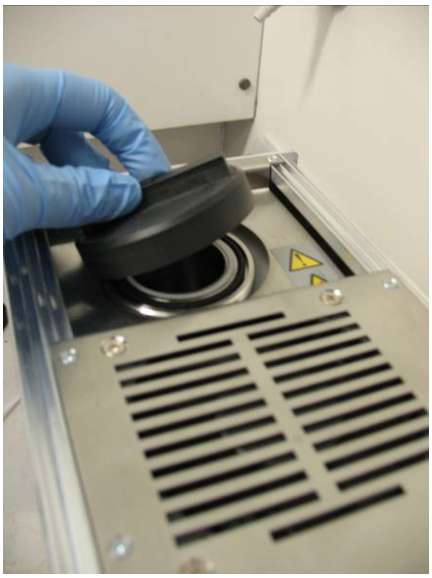
Do not attempt to force the black lid of the oven open. This will damage the thread and the seal. The V-OVG must be depressurised before opening the oven.

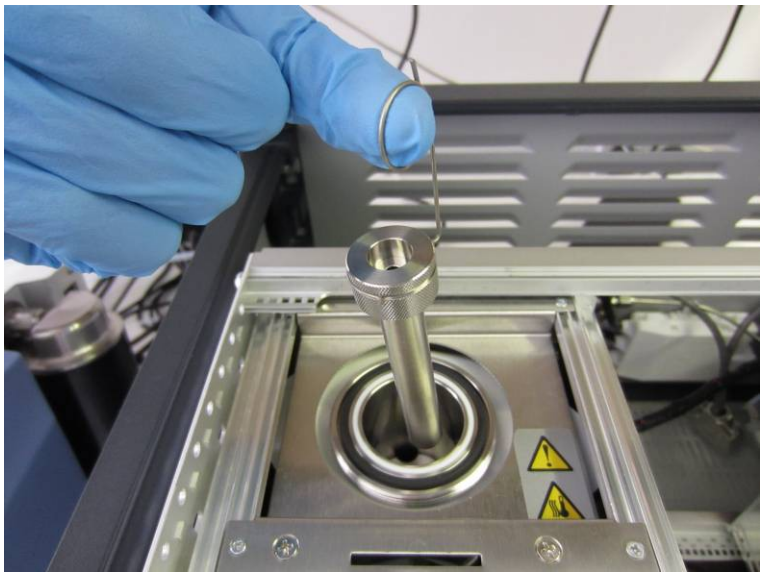
Important: It is recommended that each new device loaded into the permeation oven is allowed a 2 day incubation period before use.

When the OVG-4 is incubating a chemical permeation source and sampling is not required, always have the exhaust flow open. This will ensure that a gas flow constantly passes over the permeation source and is routed to the exhaust port.

11. Inserting a Wafer Device







To insert a wafer device into the oven, first disconnect the air supply to the V-OVG and wait for the unit to depressurise. (Sample and Exhaust Flows should read 0 ml min^{-1}). Unscrew the black lid of the oven, located on the top surface of the V-OVG.

Insert the wafer device into the central well of the oven and re-screw the lid.

Do not attempt to force the black lid of the oven open. This will damage the thread and the seal. The V-OVG must be depressurised before opening the oven.

Important: It is recommended that each new device loaded into the permeation oven is allowed a 2 day incubation period before use.

When the OVG-4 is incubating a chemical permeation source and sampling is not required, always have the exhaust flow open. This will ensure that a gas flow constantly passes over the permeation source and is routed to the exhaust port.

