



90-0135-AAA OVG-4 Sub-Unit Installation Instructions

Issue/Version	Date	Author	Details
AAA	01/06/10	Graham Newell	Original

Overview

This document describes how to install additional OVG-4 sub-units into an existing GEN-SYS system.

Table of contents

Section 1 - Note on safety.....	1
Section 2 - Materials and tools.....	2
Section 3 - Disconnecting power from the GEN-SYS rack.....	3
Section 4 - Removing an OVG-4 sub-unit.....	4
Section 5 - Installing additional Gas lines.....	7
Section 6 - Installing additional Exhaust lines.....	8
Section 7 - Installing additional 24v DC Power cables.....	9
Section 8 - Installing additional OVG-4 sub-units.....	11

Section 1 - Note on safety



Customers are expected to make their own assessment of COSHH / chemical safety before following this procedure. Customers should also consider undertaking a risk assessment before attempting procedures described in this document.

Always physically disconnect Inlet Air, Exhaust and DC power from the rear of the GEN-SYS rack before following this procedure (section 3 of this guide explains how to do this).

Always ensure sub-units are switched off before removing them from the GEN-SYS rack.

Always allow OVG-4 sub-units to cool before removing them from the GEN-SYS rack.

Section 2 - Materials and tools

If a customer purchases additional OVG-4 sub-units they are supplied with appropriate gas line, exhaust and 24V DC power cables (see images below).

Tools required:

- 1x 5/8" spanner
- 1x 7/16" spanner
- 1x 9/16" spanner
- Philips screwdriver, No. 1



Figure 1 - Gas lines with quick connects



Figure 2 - DC power leads

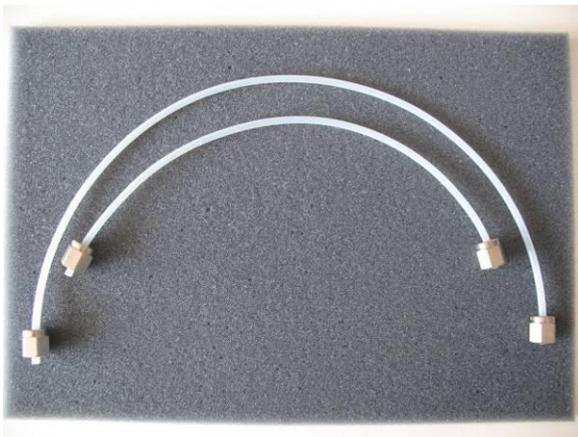


Figure 3 - Exhaust lines

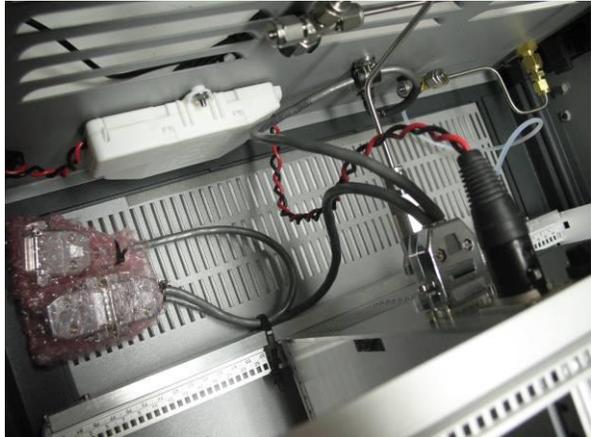


Figure 4 - RS485 cables as supplied

Section 3 - Disconnecting power from the GEN-SYS rack

This section describes how to disconnect the GEN-SYS rack from air, exhaust and power services.



Warning: Inlet gas line pressure must be vented before following this procedure.

- 1) Vent the gas supply line that provides pressure to the GEN-SYS system. Do not proceed unless pressure has been vented from this line.
- 2) Using a 9/16" spanner disconnect the inlet gas line from the rear of the GEN-SYS system.
- 3) If in use, using a 9/16" spanner disconnect the exhaust line from the rear of the GEN-SYS system
- 4) The DC power connection is unscrewed by hand.

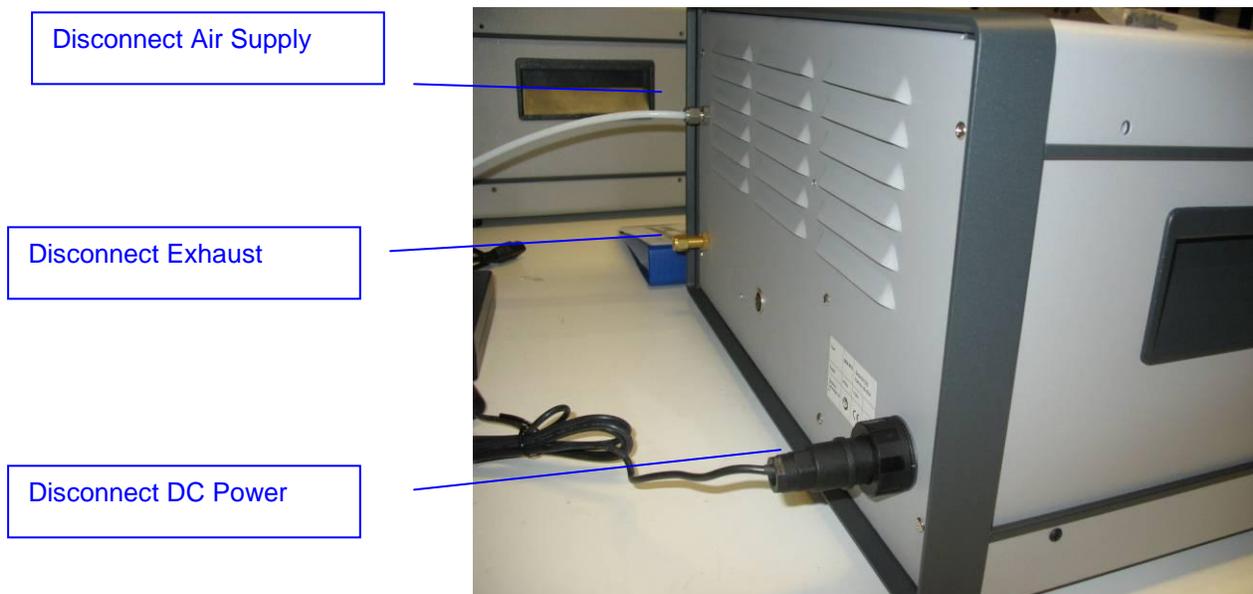


Figure 5 – rear of GEN-SYS rack

Section 4 - Removing an OVG-4 sub-unit

To improve access it is often more convenient to remove any pre-existing OVG-4 sub-units from the GEN-SYS rack. This is not essential and may impact the users COSHH evaluation.



Warning: The user is responsible for considering all chemical safety implications / COSHH before following this procedure.

Always disconnect DC power, exhaust and gas supply from the rear of the GEN-SYS rack before following this procedure.

Always consider chemical safety before following this procedure.

1) Switch off power to the unit

Switch off power to the unit here



Figure 6 – OVG front panel

- 2) Allow the OVG-4 to cool down to room temperature
- 3) Unscrew and remove the 4x screws from the front panel of the OVG-4 as shown below



Figure 7 – photograph showing the 4x screws used to mount the OVG-4

4) Remove the 'roof' panel from the rack

Unscrew the 4x screws shown below. The roof panel can then be lifted off.



Figure 8 - removing the roof panel

5) Disconnect DC power and gas supply

Both DC power and gas supply are removed by hand.

The DC power connector is removed by pulling gently. The gas supply QC is removed by sliding the tapered end of the quick-connect towards the rear of the OVG-4

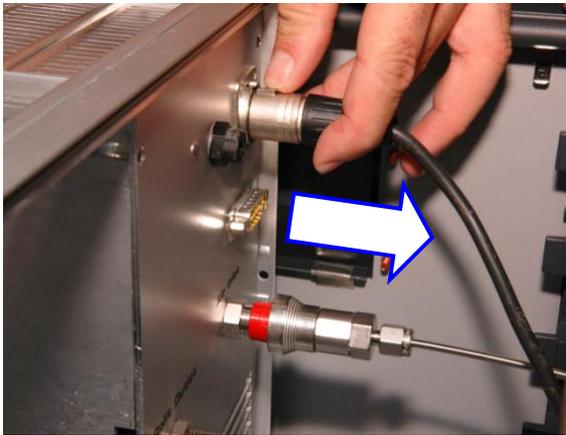


Figure 9 – disconnect DC power cable

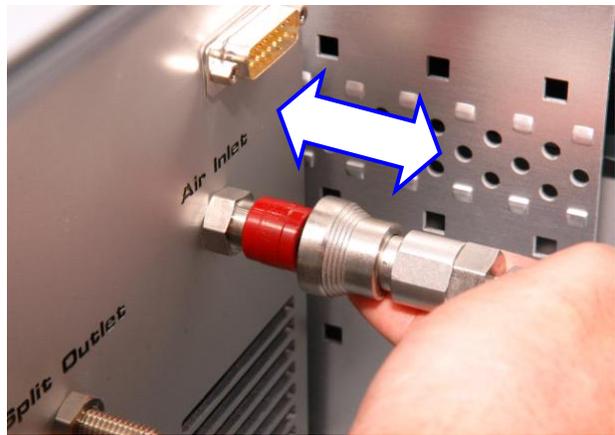


Figure 10 – disconnect gas line 'quick-connect'

6) Disconnect the exhaust line

Using a 7/16" spanner unscrew the 1/8" Swagelok fitting on the rear of the OVG-4.

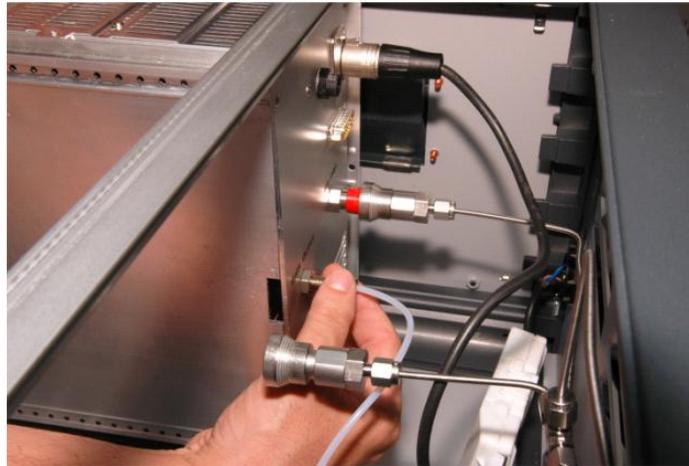


Figure 11 – disconnecting the exhaust

7) Carefully remove the OVG-4 from the rack

Use both hands to carefully slide the OVG-4 out of the GEN-SYS rack.



Figure 12 – removing an OVG-4 from the GEN-SYS rack

Section 5 - Installing additional Gas lines



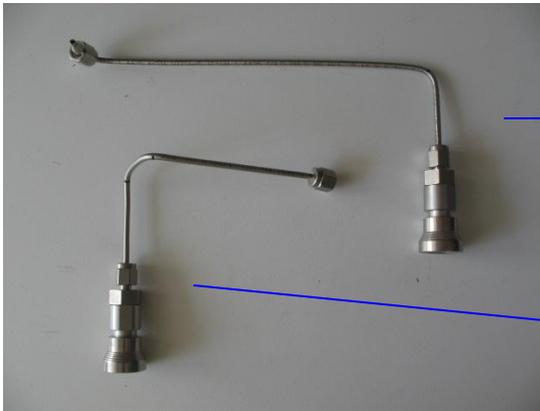
Warning: Swagelok fittings will leak if fitted incorrectly. Owlstone will not take any responsibility for incorrect fitting of Swagelok fittings by the end user.

The user must undertake a risk assessment before following this procedure. The user is responsible for assessing chemical safety, COSHH and other risk implications.

If the user requires the GEN-SYS system to be leak tight it must be tested after assembly. Please contact Owlstone for technical support regarding leak testing.

1) Prepare materials

One or two quick connect assemblies are supplied with additional OVG-4 sub-units purchased from Owlstone. Pipe lengths suit either the left-hand or the right-hand position within the GEN-SYS rack.



The longer pipe assembly is intended for OVG-4 sub-units fitting in the right-hand side of the GEN-SYS rack

The shorter pipe assembly is intended for OVG-4 sub-units fitting in the left-hand side of the GEN-SYS rack

Figure 13 – additional quick connect assemblies

2) Remove Swagelok caps and install quick connects

Remove the 2x Swagelok caps before installing the new quick connects.

Swagelok fittings must be tightened by hand before turning an additional 1x quarter turn using a 7/16" spanner. Do not over-tighten.

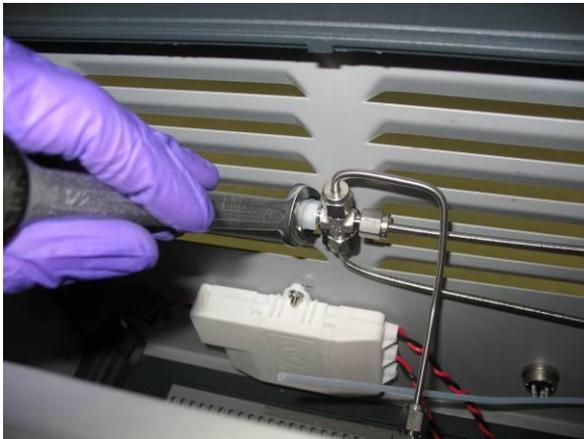


Figure 14 – removing the caps



Figure 15 – installing the new quick connect.

Section 6 - Installing additional Exhaust lines



Warning: Swagelok fittings will leak if fitted incorrectly. Owlstone will not take any responsibility for incorrect fitting of Swagelok fittings by the end user.

The user must undertake a risk assessment before following this procedure. The user is responsible for assessing chemical safety, COSHH and other risk implications.

If the user requires the GEN-SYS system to be leak tight it must be tested after assembly. Please contact Owlstone for technical support regarding leak testing.

1) Prepare materials

Additional OVG-4 sub-units purchased from Owlstone are supplied with a short exhaust line that facilitates connection between the rear of the OVG-4 sub-unit and the GEN-SYS rack.

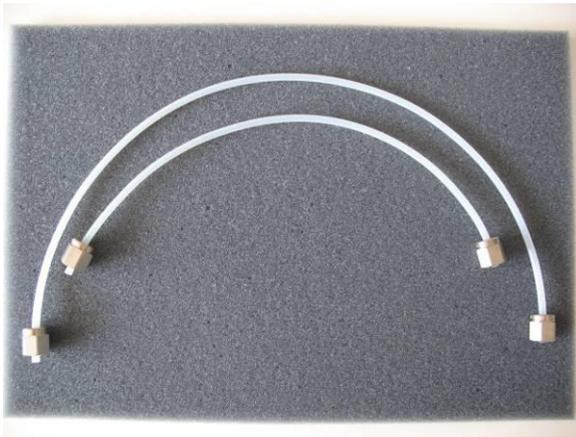


Figure 16 – additional exhaust lines

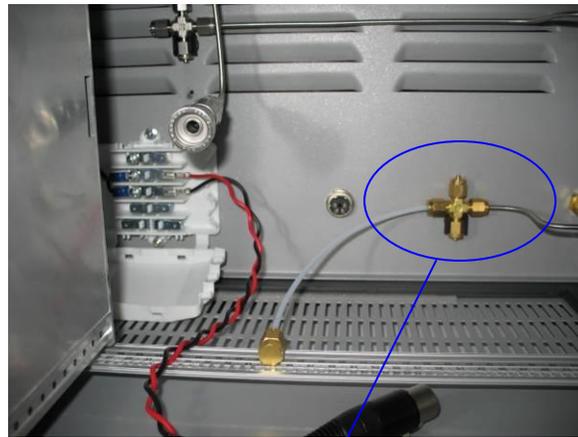


Figure 17 – existing exhaust line

2) Remove Swagelok caps and install exhaust lines

Remove the 2x Swagelok caps before installing the new exhaust lines.

Swagelok fittings must be tightened by hand before turning an additional 1x quarter turn using a 7/16" spanner. Do not over-tighten.



Figure 18 – removing the caps



Figure 19 – installing the new exhaust lines

Section 7 - Installing additional 24v DC Power cables



Warning: incorrect installation of the 24v DC leads described in this procedure may result in damage to the OVG-4 power supply.

1) Disconnect power from the GEN-SYS rack

Ensure that power is disconnected from the rear of the GEN-SYS rack (refer to page 3)

2) Open the 24v junction box

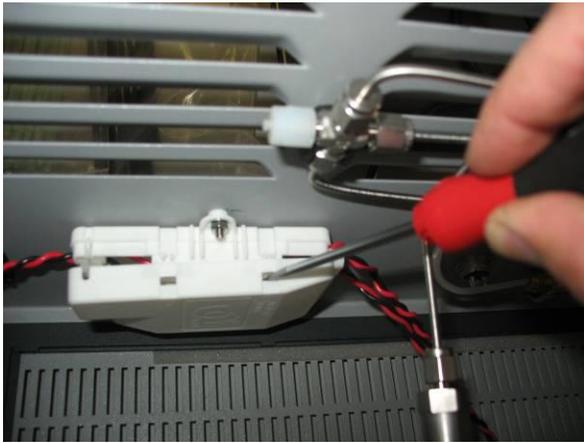


Figure 20 – opening the terminal box



Figure 21 – terminal box with 1x DC power cable

3) Connect the additional 24v DC leads

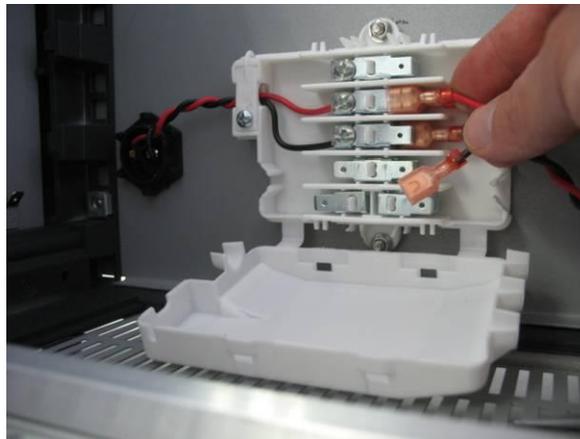


Figure 22 – fitting a second DC cable

4) Close the 24v junction box

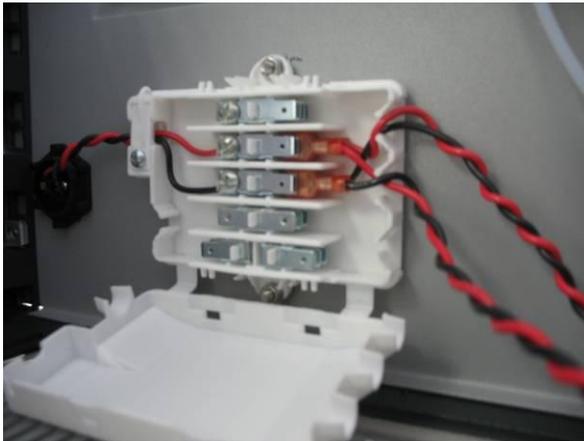


Figure 23 – two DC cables fitted



Figure 24 – closing the terminal box

The photograph below illustrates how the rack should now look.

You are now ready to install your OVG-4 sub-units.

3x Air inlet quick

3x Exhaust outlets

3x DC power 'pig tails'

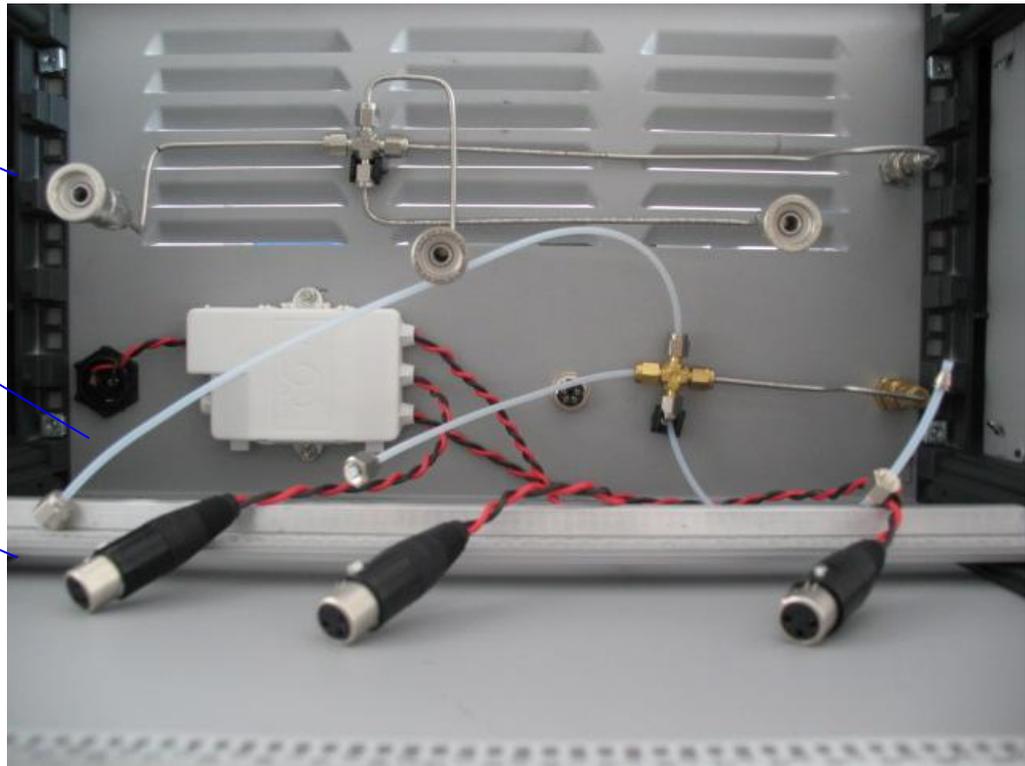


Figure 25

Section 8 - Installing additional OVG-4 sub-units

Installing the OVG-4 sub-unit follows the procedure described in section 4 in reverse.

1) Mount the OVG-4 sub-unit in the GEN-SYS rack

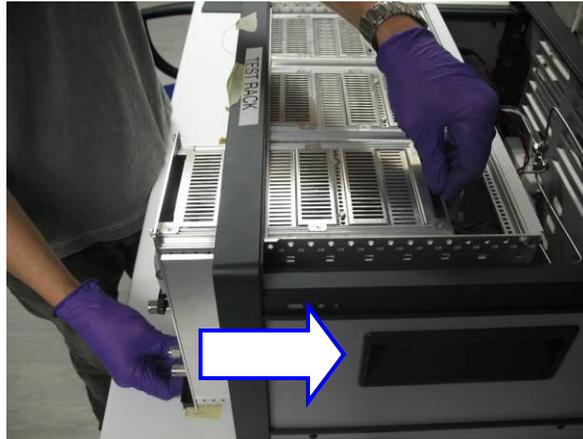


Figure 26 – mounting an OVG-4 sub-unit

2) Connect quick connect to the rear of the OVG-4 as shown below.

Pushing the valve firmly until a click is heard.

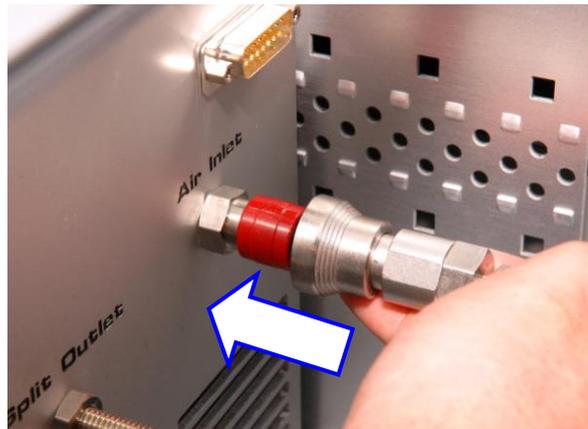


Figure 27 - Connect Quick Connect Valve

3) Connect DC power cable

Connect the DC power cable to the power socket on the rear of the OVG-4 as shown below.

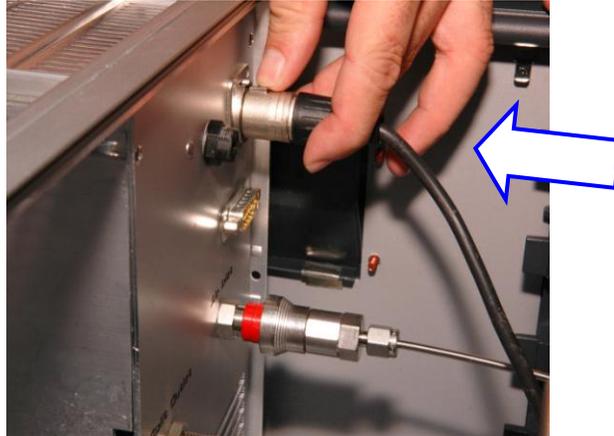


Figure 281 - Plug power cable into socket

4) Connect the exhaust line

Finally attach the PTFE exhaust line to the split outlet.

The Swagelok 1/8" nut must be tightened by hand before applying an additional 1/4 turn using a 7/16" spanner.

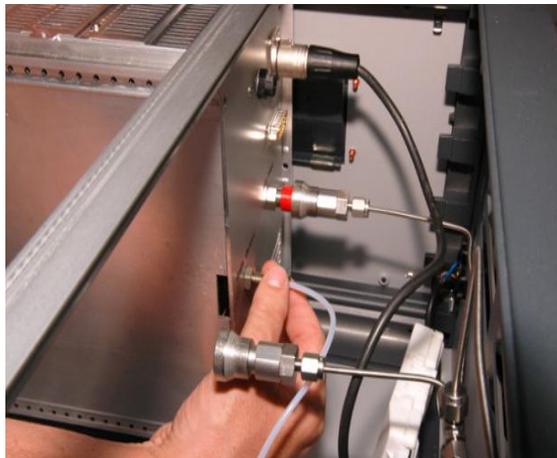


Figure 292 - Attach PTFE exhaust line to split outlet

5) Connect the RS485 cable

*** If your system is not fitted with RS485 communication capability then you can ignore this step ***

Figure 30 shows a GEN-SYS system fitted with only 1x OVG-4 sub-unit. The 2x unused RS485 cables along with the terminating connector are strapped to the base of the OVG.

To fit additional sub-units the RS485 connectors must be fitted to the back of each OVG as shown below in figure 31. The terminating connector is not required if 3x sub-units are fitted into the GEN-SYS rack.

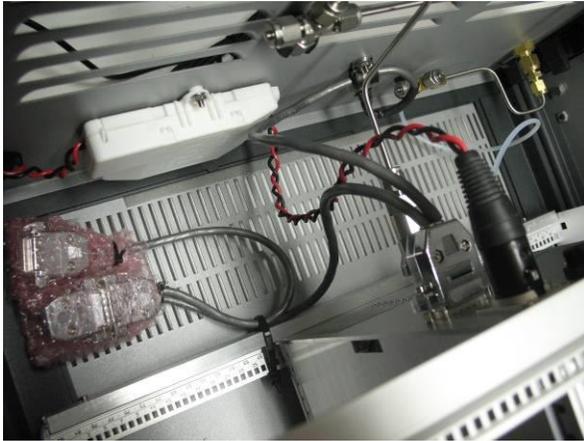


Figure 303 –RS485 system with single sub-unit

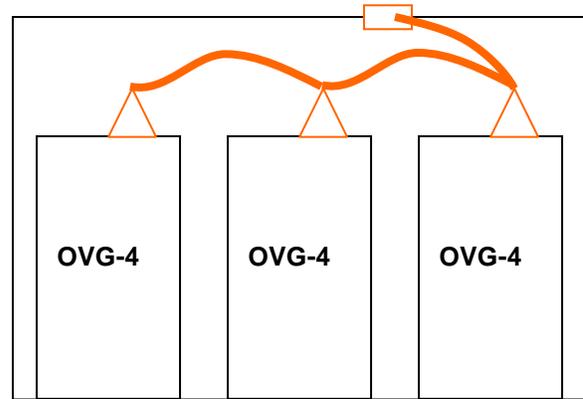


Figure 31 – RS485 cable in orange

6) Replace the roof panel

Replace the roof panel and tighten the 4x screws. See section 4.

7) Re-connect DC power, Air, Exhaust to the rear of the GEN-SYS system

Refer to Section 3.

8) RS485 addressing

Eurotherm controllers must each have a unique address on the RS485 bus. This address is configured through the front panel of the Eurotherm (ref: Eurotherm user manual).

Owlstone will always configure Eurotherm controllers supplied in a system with unique addresses. If a single sub-unit is supplied then the addresses will be 1 and 2.

If the user adds further OVG -4 sub-units then each Eurotherm controller must be configured with a unique address.