



## 90-0322-AAA OHG Sub-Unit Installation Instructions

Issue/Version	Date	Author	Details
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### Overview

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

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## 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, and 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.

## Section 2 - Materials and tools

If a customer purchases an OHG they are supplied with the following items..

00-0006	1	Owlstone Humidity Generator (OHG)
50-0081	1	Quick connect body, Swagelok 1/8"
01-0228	1	Bracket assembly (for holding bottle)
51-0020	6	M3 x 6mm, screws to connect bottle bracket to GEN-SYS rack
01-0160	1	Bottle cap and 2micron diffuser assembly
50-0158	1	Bottle, 500ml, pressure rated
-----	2	Pipe assemblies to connect bottle to OHG
50-0258	2	1/8" Swagelok Nut
50-0282	2	1/8" Swagelok Ferrule
50-0543	1	Dew-Point Hygrometer
-----	1	Pipe assembly to connect output of OHG to Easidew Hygrometer
90-0027	1	Decontamination certificate
-----	1	Michell Instruments User Guide

Tools required:

- 1 x 5/8" spanner
- 2 x 7/16" spanner
- Philips screwdriver, No. 1
- A pair of side cutters

## Section 3 - Overview of procedure

- Disconnect power, air and RS-485 cabling from the GEN-SYS rack, see section 4
- Remove roof panel from rack, see section 5
- Because of the external water bottle the OHG must be mounted in the right-hand position as shown below. If you need to remove an OVG already mounted in this position see section 5



Figure-1: OHG position



The OHG must be located in the right-hand position

- Fit the Quick Connect supplied with the OHG, see section 6
- Prepare the RS-485 cable, see section 7
- Install the OHG, see section 8
- Fit the water bottle holder, see section 9
- Connecting the water bottle, section 10
- Connecting the hygrometer, section 11

## Section 4 - Disconnect power + air 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.

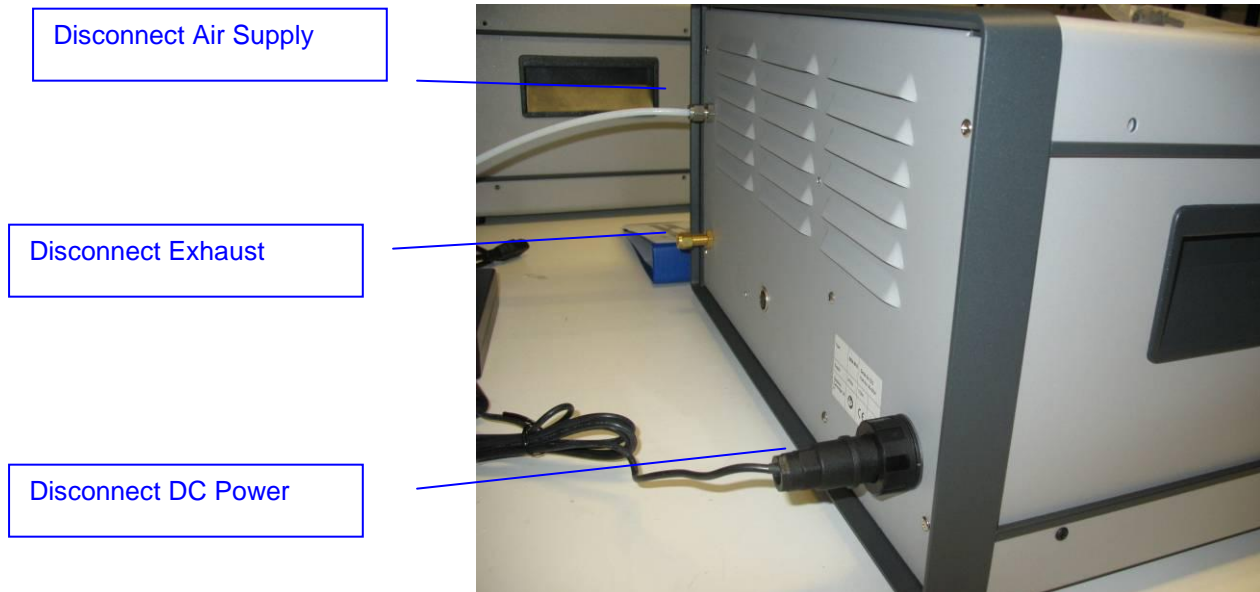


Figure 2: Rear panel of GEN-SYS rack

## Section 5 - Removing an OVG-4 sub-unit (optional step)

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 3: OVG-4 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

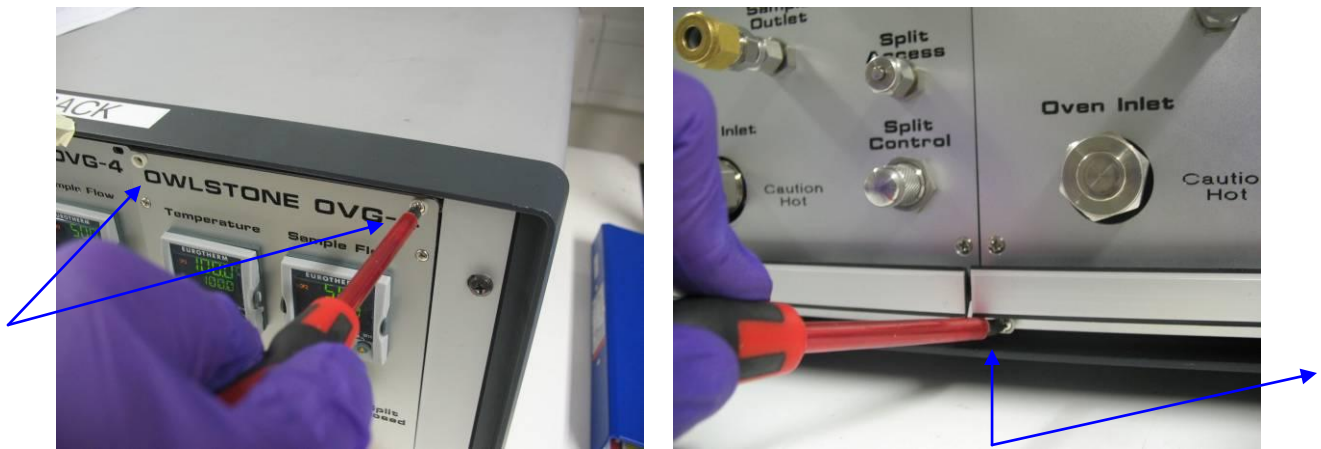


Figure 4: photograph showing the 4x screws used to mount the OVG-4

#### 4) Remove the 'roof' panel from the rack

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

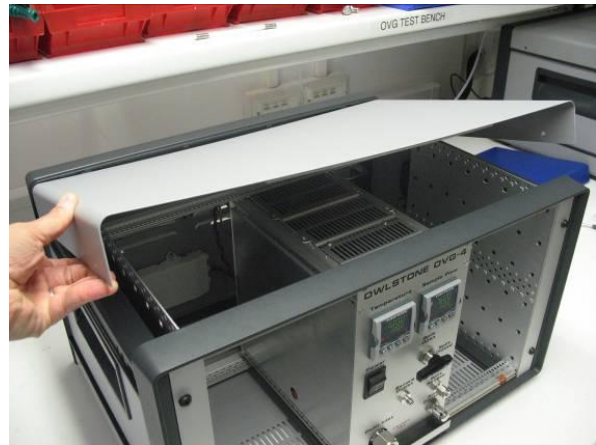


Figure 5: removing the roof panel

#### 5) Disconnect DC power and gas supply

Both DC power and gas supply fittings are removed by hand from the rear of the OVG-4.

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

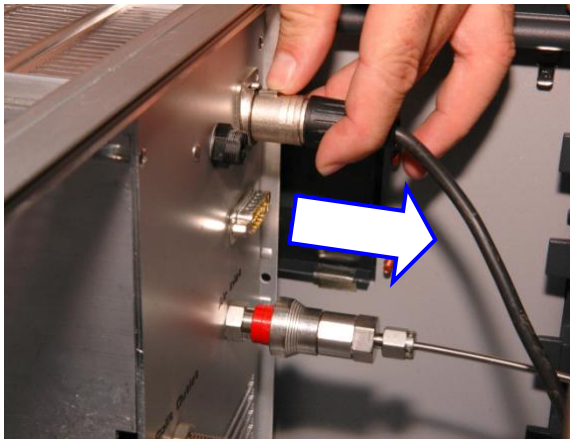


Figure 6: Disconnect DC power cable

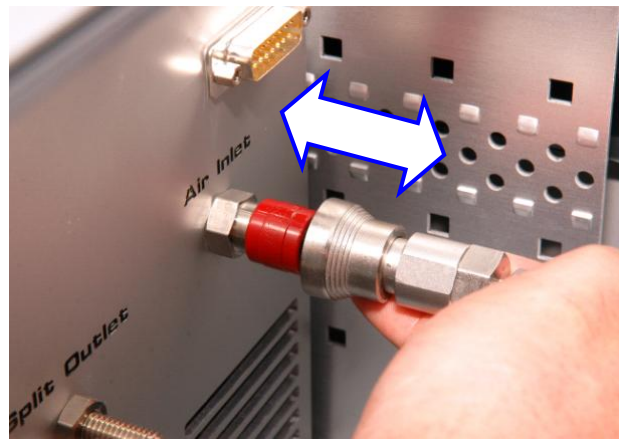
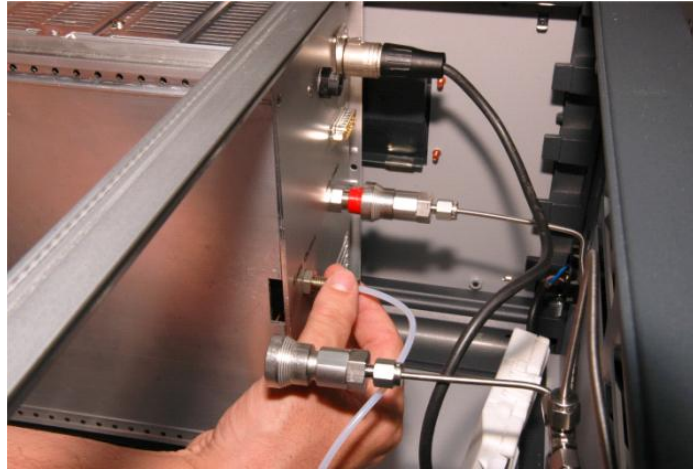


Figure 7: Disconnect gas line 'quick-connect'



**6) Disconnect the exhaust line**

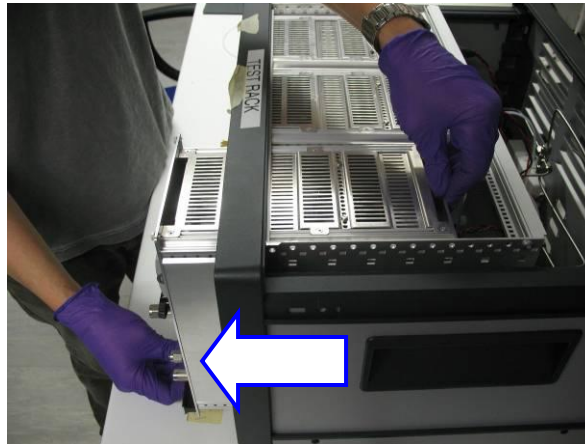
Using a 7/16" spanner unscrew the 1/8" Swagelok fitting on the rear of the OVG-4.



*Figure 8: 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 9: Removing an OVG-4 from the GEN-SYS rack*

## Section 6 - Installing a Quick Connect in GEN-SYS



**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

A Swagelok Quick Connect is supplied with your OHG (Owlstone p/n 50-0081).

Two 7/16" and a 5/8" spanner are required for this procedure.



Figure 10: Quick connect

### 2) Remove Swagelok cap, fit Quick Connect

Remove the Swagelok cap using the two 7/16" spanners before installing the quick connect. Swagelok fittings must be tightened by hand before turning an additional 1x half turn using a 7/16" spanner.

*Do not over-tighten.*

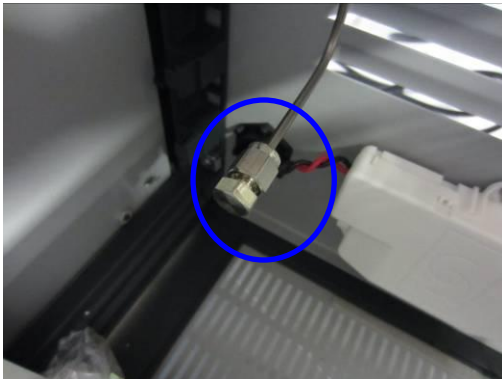


Figure 11: Remove the cap

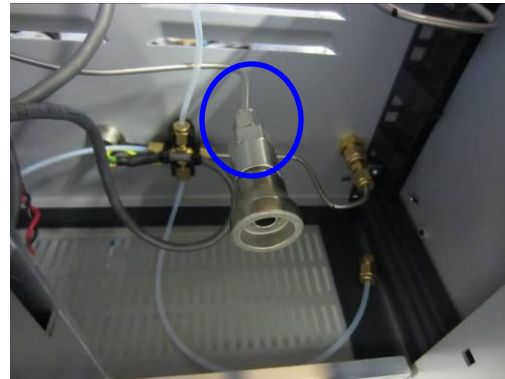


Figure 12: Install the quick connect



## Section 7 - Preparing the RS-485 cable

If the user needs RS-485 communication capability then cabling needs to be prepared as shown below

Firstly, un-wrap & un-strap the spare cables.

Next remove the “bridge” or “plug” to leave the 15-way connector ready to connect to the OHG.

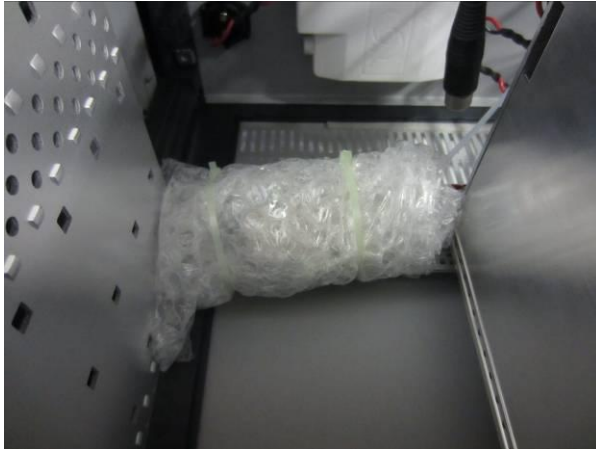


Figure 13: RS-485 cables as supplied

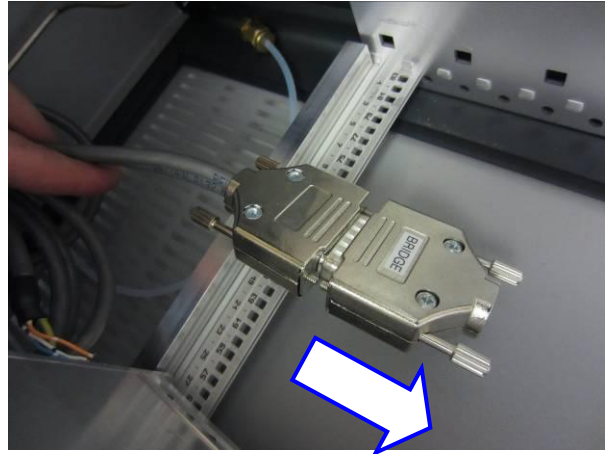


Figure 14: Remove “bridge” or “plug”

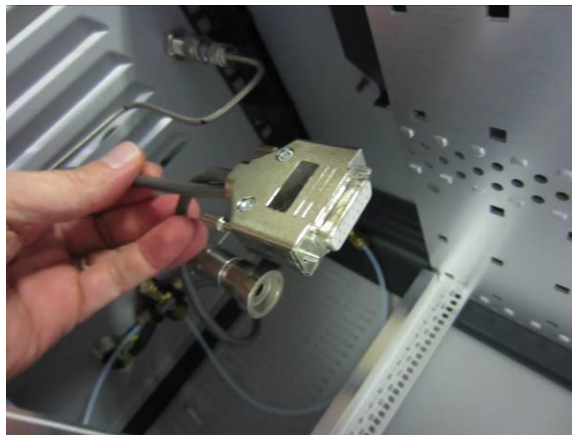


Figure 15: Cable ready to connect to the OHG

## Section 8 - Installing the OHG

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

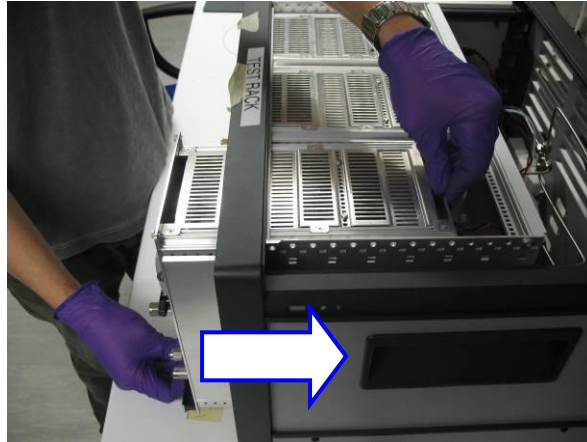


Figure 16: Mounting an OVG-4 sub-unit

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

Pushing the valve firmly until a click is heard.

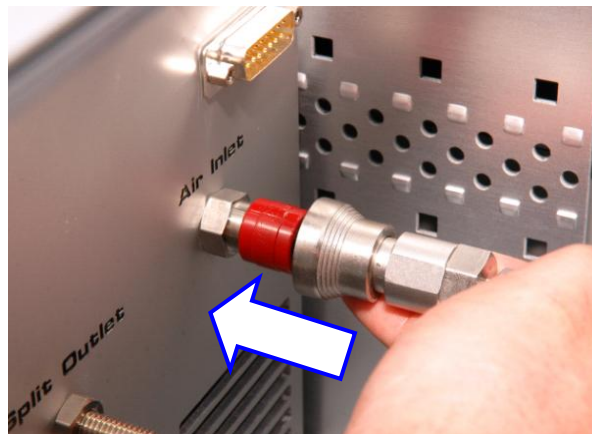
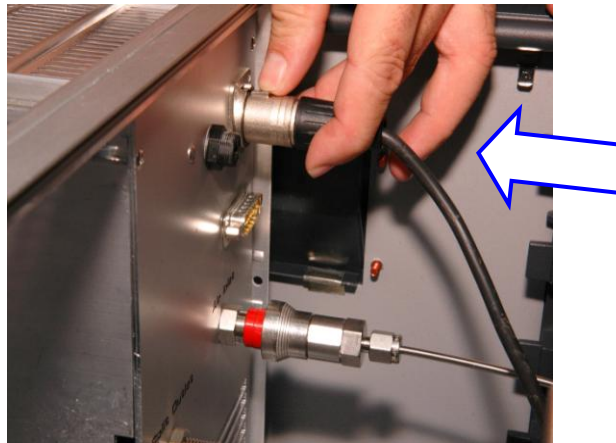


Figure 17: Connect Quick Connect Valve

### 3) Connect DC power cable

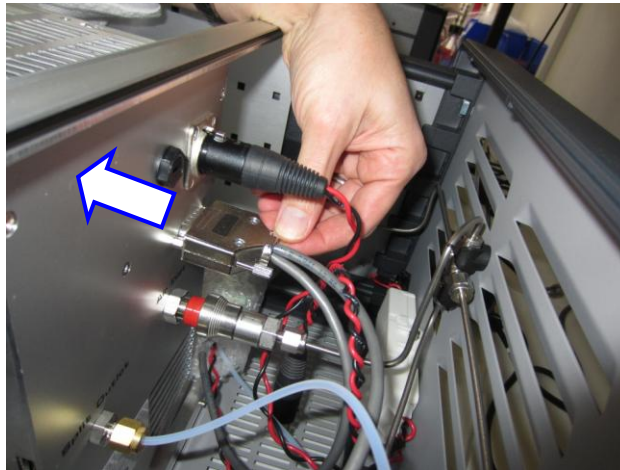
Connect the DC power cable to the power socket on the rear of the OVG-4 as shown below.



*Figure 18: Plug power cable into socket*

### 4) Connect the RS485 cable

Connect the RS-485 connector to the rear of the OHG as shown below, tighten the two screws.



*Figure 19: Fitting the RS-485 connector*

### 5) Replace the roof panel

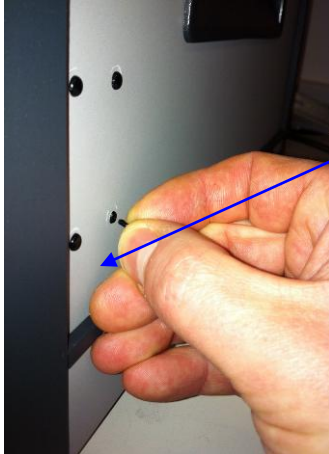
Replace the roof panel and tighten the 4x screws. See section 5.4

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

Refer to Section 4.

## Section 9 - Fit the water bottle bracket assembly

The black rivets on the right hand side of the rack need to be removed before the bottle bracket assembly can be attached to the rack. They can easily be removed by hand.



Remove the 4x rivets

Figure 20: rivets

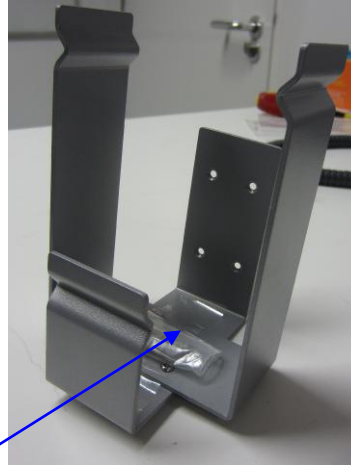


Figure 21: Screws required to fasten the bracket

Using a screwdriver and the screws provided fasten the bracket.



Figure 22: fixing the bracket

The bracket is now secured to the rack.

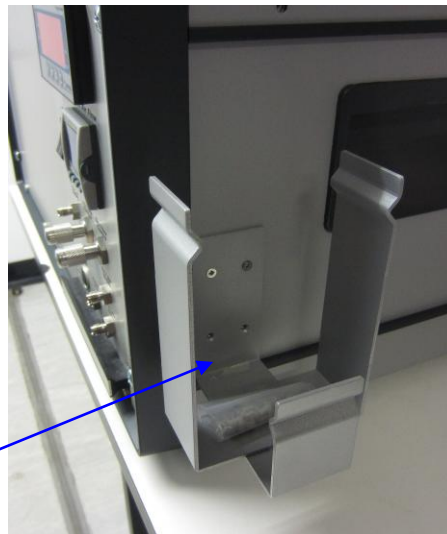


Figure 23: the bracket is attached!



## Section 10 - Connecting the water bottle

The first step is to connect the two stainless steel pipe assemblies to the top of the bottle.

The two pipes will only fit one way around as shown below. The Swagelok female miniature quick connects have a 'collar' which is pulled in order to insert the male stub fitting.

Once you have connected the two pipe assemblies to the top of the bottle you simply connect the other end of each pipe assembly to the OHG using a 7/16" spanner.

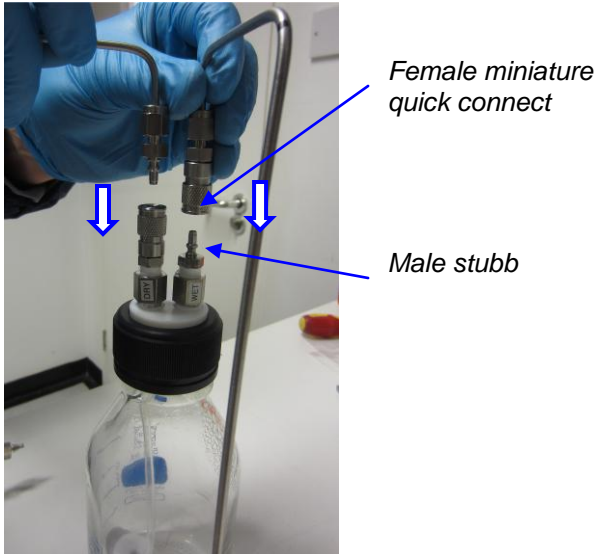


Figure 24: attached the bottle

Connect tubing from the connector on the top of the bottle marked **DRY** to the outlet port on the OHG marked **Dry Air Outlet**.

Connect tubing from the connector on the top of the bottle marked **WET** to the inlet port on the OHG marked **Wet Air Inlet**.

**\*\* WARNING \*\***

**If these two pipes are inadvertently connected the wrong way around you may drive water into the OHG and hygrometer!**



Figure 25: attaching the pipes



Figure 26: attaching the pipes

## Section 11 - Connecting the hygrometer

A short length of stainless steel tube is supplied to allow the user to connect the hygrometer to the **Wet Air Outlet** as described below.

Depending on user requirements you may choose to fit the hygrometer elsewhere in your pneumatic circuit.

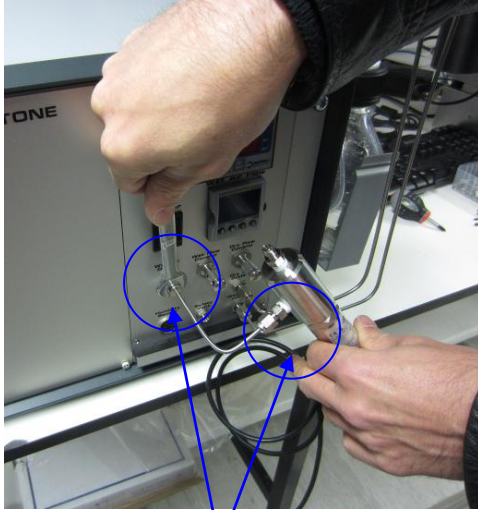


Figure 27: attaching the hygrometer

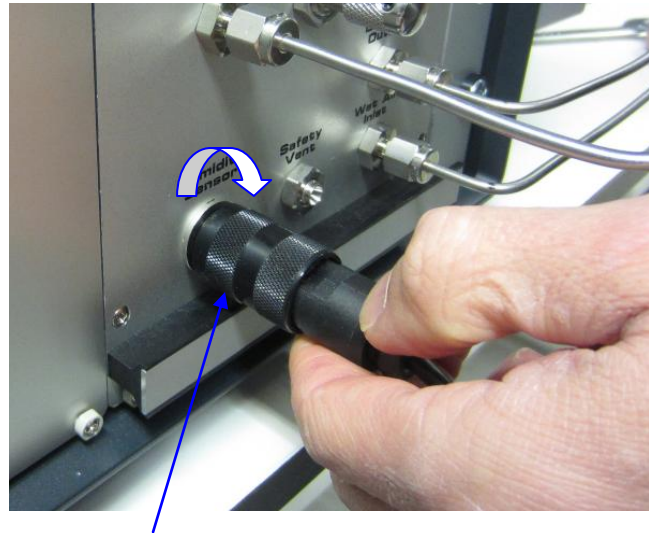


Figure 28: attaching the connector

1/8" Swagelok tube fittings should be tightened "finger tight + a further half a turn" using a 7/16" spanner.

Locate the sensor connector into the *Humidity Sensor* socket at the front of the OHG. Turn 'collar' clockwise until resistance is felt.



Figure 29: finished!