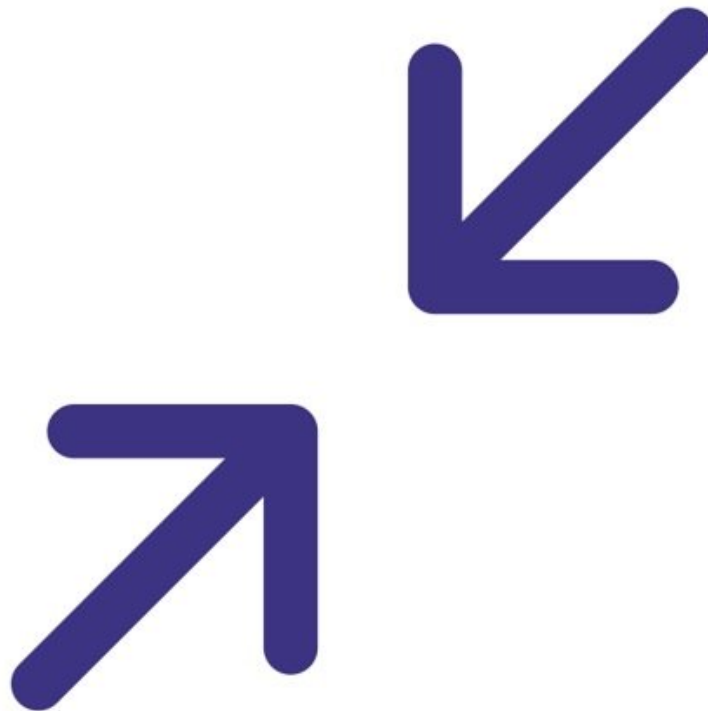




# Calibration - Gas span

How to perform a Span Calibration with your Aeroqual Ranger.

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## INTRODUCTION

RGR CALKIT can be used to calibrate all Aeroqual sensor heads except ammonia, perchloroethylene, ozone and dust.

Gas calibration using the RGR CALKIT should always be completed in a location with adequate ventilation.



### TOOLS:

- [Gas regulator](#) (1)
- [Calgaz gas cylinders](#) (1)
- [1/8" I.D. Tubing - PVDF](#) (1)



### PARTS:

- [RGR CALKIT Calibration Accessory](#) (1)

## Step 1 — Connect tubing to calibration accessory



**i** The calibration accessory has barbed fittings that are intended to fit with 1/8" ID tubing.

**!** Care should be taken in selecting a tubing material that is appropriate for the type of gas that you will be using to calibrate the sensor head.

- PVDF tubing is appropriate for most gases but the tubing datasheet should be consulted for a full list.

**i** Either side of the calibration accessory can be designated the inlet or the outlet.

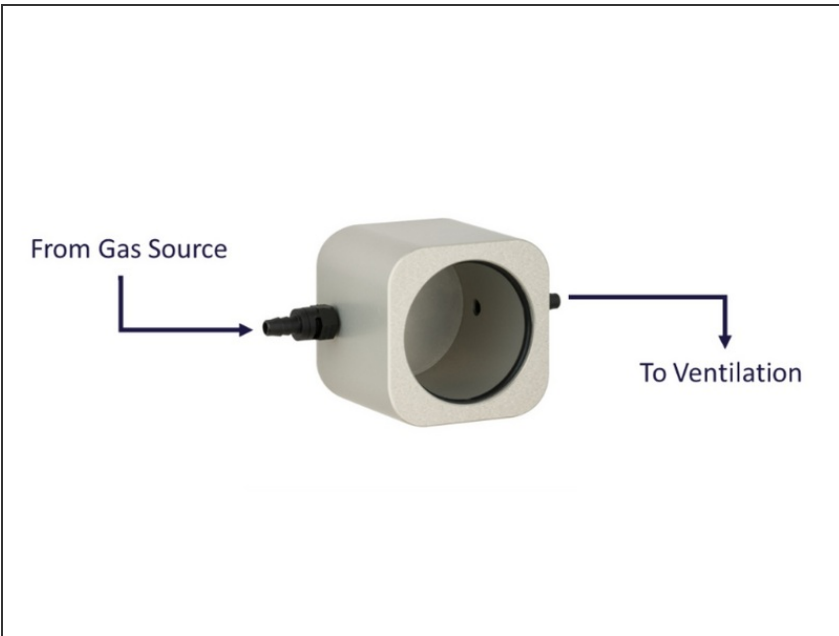
**!** Not all gas that enters through the inlet exits through the calibration accessory outlet; be advised that some gas exits through the sensor head exhaust. Depending on your calibration gas of choice and concentration levels, you may need to perform this calibration under a fume hood.

## Step 2 — Attach regulator to gas source



- Make sure the valve on your flow gas regulator is fully off.
- Screw the gas regulator onto your gas cylinder. When the regulator is correctly fitted, the pressure indicator will show the cylinder pressure.
- Always point the cylinder and regulator away from yourself and others when attaching or removing a pressure regulator.
- Secure the cylinder so it can't be knocked over while the regulator is attached.

## Step 3 — Connect tubing to gas source and ventilation



- Connect tubing to gas source and ventilation.
- Either side of the calibration accessory can be designated the inlet or the outlet

## Step 4 — Attach the calibration accessory to the sensor head while the head is plugged into the Ranger



- Attach the sensor head to Ranger
- Turn Ranger On
- Attach the calibration accessory to the sensor head

## Step 5 — Gently turn the valve on the regulator and begin to flow gas at >1L/min



- Check the cylinder pressure to ensure there's enough gas to perform the calibration (10% of full pressure should be enough).
- Gently turn the regulator valve anticlockwise and flow the target gas at >1L/min until the reading stabilizes (about 10 minutes).

## Step 6 — Wait for the gas reading to stabilize

12:47   
NO<sub>2</sub>  
ppm

   85%

0.117

Location 01

May 17/23

- Wait for the gas reading to stabilize on the display of the Ranger

## Step 7 — Navigate to Span Calibration

### Settings

Sensors	All Healthy
Logging	On >
Wi-Fi	>
AQI	On >
Units	>
Alarms	0 Enabled >
Calibrate	>
System	>
Language	English
About	>

### Settings: Calibrate

Re-Zero the Sensor...

Fan Speed (200-400) 297

Span Calibration >

New gain = current gain x (span concentration / sensor reading)

- Press and hold the **LEFT** arrow key to enter the Settings menu
- Navigate down and selectm 'Calibrate' and then 'Span Calibration'
- Enter the span adjustment menu and calculate the required gain using the formula

## Step 8 — Adjust the gain value in the Span Calibration menu

### Settings: Span Calibration

NO<sub>2</sub> 1.300 ↑↓

NO<sub>2</sub> : 0.141 ppm

- Adjust the gain value in the Span Calibration menu to match your calculated value
- Press enter
- Wait for the next sensor reading, which will have the new gain applied
- ⓘ The value is not applied until you press enter
- ⓘ The new gain value will be applied on the next measurement cycle; the value displayed at the bottom may take 1-2 minutes to update
- Confirm the new reading matches your expected value.
- Exit the span calibration menu.

## Step 9 — Pack up



- Turn off the gas regulator.
- Pack up.

## Step 10 — Span moves with gas sensor head



- i** If you remove the gas sensor head from any Ranger base, and attach it to a different Ranger base, the Span will be retained

For further support, visit [Span calibration](#), [How to test your sensor head](#), [Sensors - VOC](#), or contact [Technical Support](#).