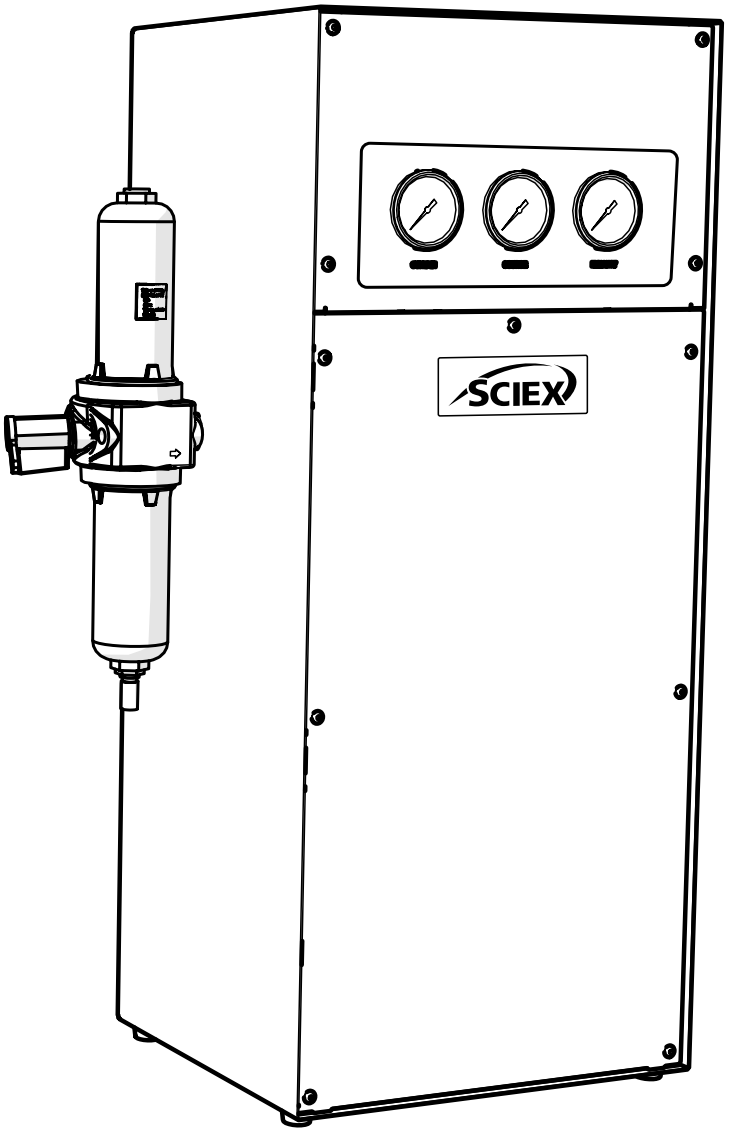
SCIEX Gas Generator N38

Operator Guide



SCIEX Gas Generator N38 Operator Guide RUO-IDV-05-14029-B December 2022

Contents

Change History

Rev	Comment	Name	Date
A	Initial Release	L. Couttie	01/06/2022
B	Manufacturer Info Update	L. Couttie	06/12/2022

How to use this Manual

This manual is intended for end users and has been written as a reference document where you can skip to the relevant information.

Users can refer to the contents page to find the relevant information.

Review each of the following sections carefully.

Thank you for selecting SCIEX to meet your gas generation needs, and should you require any further assistance or support do not hesitate to contact SCIEX.

Safety Notices

The warnings detailed within this manual refer to the most likely potential hazards, but by definition cannot be all inclusive. If the user employs an operating procedure, item of equipment or a method of working which is not specifically recommended by SCIEX, the user must ensure that the equipment will not be damaged or become hazardous to persons or property.

Symbols

This manual uses the following symbols to highlight specific areas important to the safe and proper use of the generator.

 WARNING	A WARNING notice denotes a hazard. It calls attention to an operating procedure, process or similar, which if not correctly performed or adhered to, could cause personal injury or in the worst case death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood or met.
 CAUTION	A CAUTION notice denotes a hazard. It calls attention to an operating procedure, process or similar, which if not correctly performed or adhered to, could cause damage to the generator or the application. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood or met.
	Caution, risk of electric shock. Ensure power to the generator has been removed before proceeding.
	Symbol denotes details of the products manufacturer.

Safety Notice to Users


WARNING

These instructions must be read thoroughly and understood before installation and operation of your SCIEX Gas Generator. Use of the generator in a manner not specified by SCIEX MAY impair the SAFETY provided by the equipment.


WARNING

When handling, operating or carrying out any maintenance, personnel must employ safe engineering practices and observe all relevant local health and safety requirements and regulations. The attention of UK users is drawn to the Health and Safety at Work Act 1974, and the Institute of Electrical Engineers regulations.


WARNING

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Technical Specification

Environment

	SCIEX Gas Generator N38
Minimum Operating Ambient Temperature	5°C (41°F)
Maximum Operating Ambient Temperature	30°C (86°F)
Maximum Altitude	2000 m
Maximum Relative Humidity	70% Non-Condensing
Minimum Storage Temperature*	-20°C (-4°F)
Maximum Storage Temperature*	60°C (140°F)

*NOTE – When taken out of storage the Generator should be allowed to acclimatize at room temperature for a minimum of 3 hours before operation.

Inlet Conditions

Min/Max Air Inlet Pressure	8.3-10 bar / 120-145 psi
Minimum Air Inlet Flow (l/min)	240 L/min

Generator Outlets

Curtain Maximum Flow^	38 L/min @ 4.48 bar (1.34 cfm @ 65 psi)
Source Maximum Flow^	52 L/min @ 6.89 bar (1.84 cfm @ 100 psi)
Exhaust Maximum Flow^	50 L/min @ 4.13 bar (1.77 cfm @ 60 psi)
Particles	<0.01µm
Phthalates	NONE
Suspended Liquids	NONE
Gas Outlets	3 × ¼" BSPP
Drain Outlet	1 × ¼" BSPP
Pressure Gauges	3

^NOTE – These performance characteristics are valid only when paired with an approved SCIEX application. Refer to current application matrix for a list of supported products.

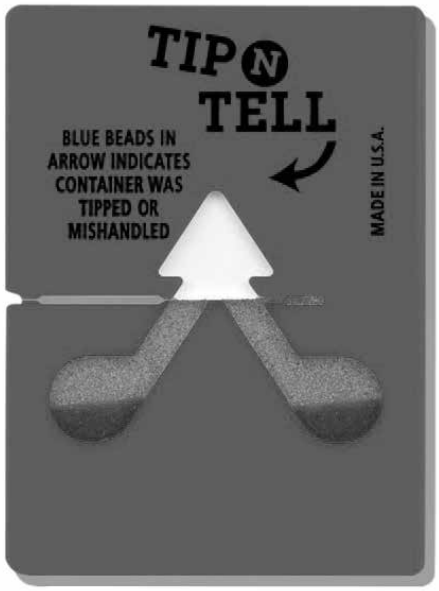
General

Dimensions cm (inches) W × D × H	42.8 × 25 × 73 (16.8 × 9.8 × 28.7)
Generator Weight Kg (lbs)	18 (39.6)
Shipping Weight Kg (lbs)	21.5 (47.3)

Unpacking

Although SCIEX takes every precaution with safe transit and packaging, it is advisable to fully inspect the unit for any sign of transit damage.

Check ‘SHOCKWATCH’ and ‘TIP-N-TELL’ labels for signs of rough handling prior to unpacking.



Any damage should be reported immediately to the carrier and SCIEX.

Follow the unpacking instructions posted on the side of the crate. It will require two people to remove the unit from the shipping crate and to manoeuvre the generator to the desired location.

Save the product packaging for storage or future shipment of the generator.

Note: Included with the generator is a “Fittings Kit” containing mains power leads for UK, EU & US and also all the required fittings and warranty registration card. Be careful not to discard these with the packaging.

Fittings Kit Contents

Supplied in the Fittings Kit are all the fittings required to connect the generator to the application. The contents of the Fittings Kit are as follows:

1. 1/4” PTFE Tubing × 3m × 3
2. 5/16″ PTFE Tubing × 3m × 1
3. 1/4” Compression Fitting × 3
4. 5/16” Compression Fitting × 1
5. Flow Control Silencer × 3
6. No. 8 Wall Plug × 4
7. No. 8 Screw × 4

All of the generators output ports are located on the output panel at the side of the unit.

Installation

Generator Environment

The generator should be situated in a well ventilated environment, with at least a 75mm (3”) air gap all around it and should be positioned such that it can be easily disconnected from the mains supply if required. If this is not convenient then the unit can be sited elsewhere; however, consideration should be made of the lengths of pipe runs as pressure drops can result from extended runs of pipe.

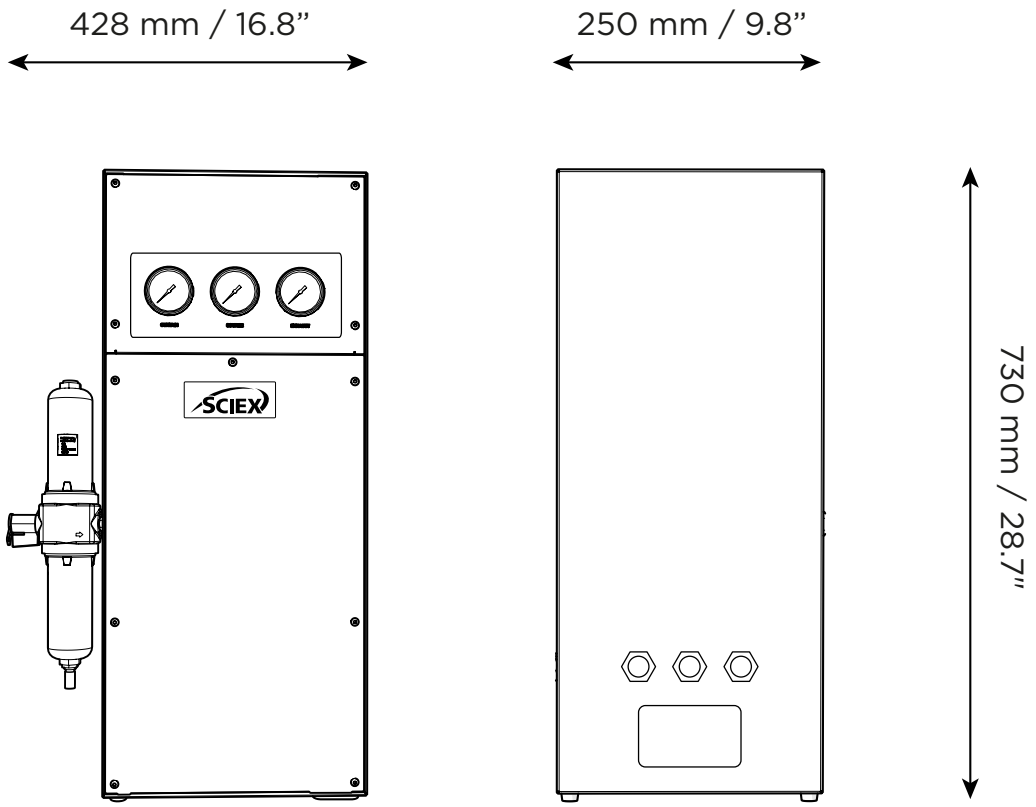
Performance of the generator is affected by ambient conditions. Note should also be taken to the proximity of Air Conditioning outlets. These can sometimes give rise to “pockets” of air with high relative humidity. Operation of the unit within such a pocket could adversely affect its performance. Consideration should also be given to the air flow around the unit. It is recommended that an air gap of 75mm (3”) should be maintained down both sides and at the rear of the unit. Refer to the drawing on the following page for the general dimensions of the unit.

Minimum Operating Ambient Temperature: 5 °C (41 °F)

Maximum Operating Ambient Temperature: 30 °C (86 °F)

Generator Overview

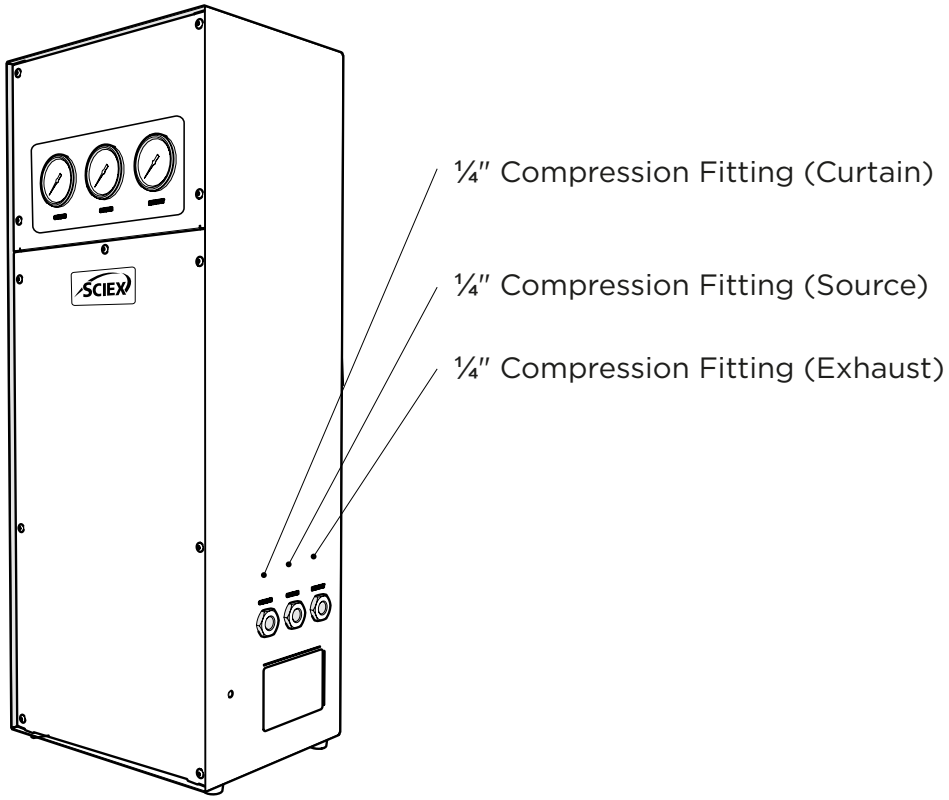
General Dimensions



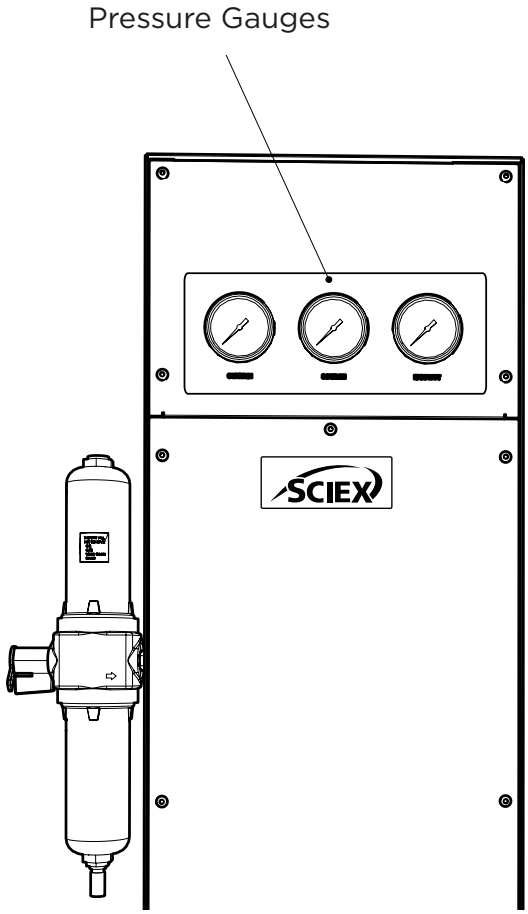
WARNING

The generator must always be placed on a flat, level surface. Failure to do so will affect the performance of the generator.

Unit Connections



Unit Controls



Air Connection

SCIEX Gas Generator N38 should be connected to a clean, dry, OIL - FREE source of compressed air. A minimum inlet pressure of 120 psig (8.3 barg) is required. Any doubts as to the suitability of your compressed air supply should be referred to SCIEX or any of their authorised partners.

The generator has a Breathing Air Filter with ¼" BSPT connection to the left side of the unit. The Compressed Air supply should be connected here. This filter will drain moisture and is equipped with an automatic drain. The drain should be led to a convenient place. There are 3-off ¼" BSPT Female bulkhead connections to the right of the unit. Fittings are provided to connect these ports to the gas connections of the Mass Spectrometer.

LC/MS with 3-off Connections

Connect the 3-off gas ports at the right side of the generator to their respective ports on the Mass Spectrometer using the 3-off ¼" BSPT x ¼" Swagelok fittings. Use ¼" tubing throughout.

Commissioning

Before the Generator is connected to the application, the Generator should be operated in isolation (i.e. not connected to the application) for thirty minutes. This is to ensure any impurities present are purged from the system. Failure to do this may harm the application.

With the Generator installed (as per the Installation Guide), connect compressed air to the unit and open the air supply to the Unit. Connect Flow Control Silencers 02-1096 to the Outlet connections to allow the generator to vent to atmosphere until the unit is stabilised. The Generator has been pre-set in the factory to give the specified output pressure in line with known requirements. Once the Membranes reach the design pressures the Generator will stabilise and produce Nitrogen. Maximum purity will be achieved after approximately 30 minutes. The silencers can then be removed and the generator can then be re-connected to the application. This process is described in detail in the Installation Guide.

The design of the generator is such that it can deliver up to the supplies specified in the Technical Specifications. Should the demand for gasses be less than the rated output flow at any time, the demand will be determined by the consuming equipment. In circumstances of no demand, the Generator remains operational and will provide Nitrogen immediately as demand resumes.

Connecting to the application

Once the initial purge run of 30 minutes has completed, the generator is ready to be connected to the application(s).

Turn off the inlet air and ensure pressure gauges read zero before connecting the generator to the application(s).

Attach the ¼" compression fittings to the outlets of the generator. Using the ¼" tubing supplied, connect the outlets of the generator to the inlets on the application.

If you require more tubing than is supplied refer to the Tubing Lengths section.

Once the tubing is connected to the application, ensure that it is thoroughly checked for being leak-tight. Even the slightest leak in the gas supply between the generator and the application can lead to a reduction in efficiency.

Tubing Lengths

The diameter of the tubing which will be connected to the gas outlets is important and is determined by the length of tubing required. Failure to follow these recommendations could lead to pressure between generator and application.

< 10 meters:	Use ¼"/$\frac{3}{16}$" (¼" O/D, $\frac{3}{16}$" I/D) P.T.F.E. tubing.
> 10 - 40 meters:	Use $\frac{3}{8}$"/ $\frac{5}{16}$" ($\frac{3}{8}$" O/D, $\frac{5}{16}$" I/D). Tubing and fittings not supplied in the fittings kit.
> 40 metres:	Contact SCIEX with the relevant distance and we will calculate the flow resistance and the tubing size required.

A combination of ¼"/$\frac{3}{16}$" and $\frac{3}{8}$"/$\frac{5}{16}$" tubing may be used to ensure that there is no large diameter tubing within the lab (i.e. for the first 20 meters from the generator use $\frac{3}{8}$"/$\frac{5}{16}$" and the final 10 meters to the application use ¼"/$\frac{3}{16}$" tubing). Keep the connections and bends to a minimum.

Service Requirements

Service Schedule

Purchase Interval	Component	Visit
12 Months	Annual Maintenance Kit*	Contact your SCIEX service representative to arrange for the annual maintenance to be completed.

* Quote your generator serial number when ordering your Maintenance Kit to ensure selection of the appropriate kit for your generator.

Note: To be serviced by manufacturer.

Cleaning

Clean the outside of the generator only using warm soapy water and a clean damp cloth. Ensure all excess fluid is thoroughly removed from the cloth prior to use.

Cleaning should only be undertaken with the power switched off and the power cord removed from the rear of the generator.

Under no circumstances should any solvents or abrasive cleaning solutions be used as these can contain fumes that could be harmful to the generator.

Care should be taken with Leak Detections Liquids.

Troubleshooting

Problem	Possible Solution
The mass spec is reporting low pressure.	• Check pressure gauges are showing normal pressure. • Contact your Technical Assistance Centre.

Contact us

To find software product documentation, refer to the release notes or software installation guide that comes with the software.

To find hardware product documentation, refer to the Customer Reference DVD that comes with the system or component.

The latest versions of the documentation are available on the SCIEX website, at **sciex.com/customer-documents**.

Note: To request a free, printed version of this document, contact **sciex.com/contact-us**.

For warranty information visit **sciex.com/warranty.**

SCIEX Support

SCIEX and its representatives maintain a staff of fully-trained service and technical specialists located throughout the world. They can answer questions about the system or any technical issues that might arise. For more information, visit the SCIEX website at sciex.com or contact us in one of the following ways:

- **sciex.com/contact-us**
- **sciex.com/request-support**

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