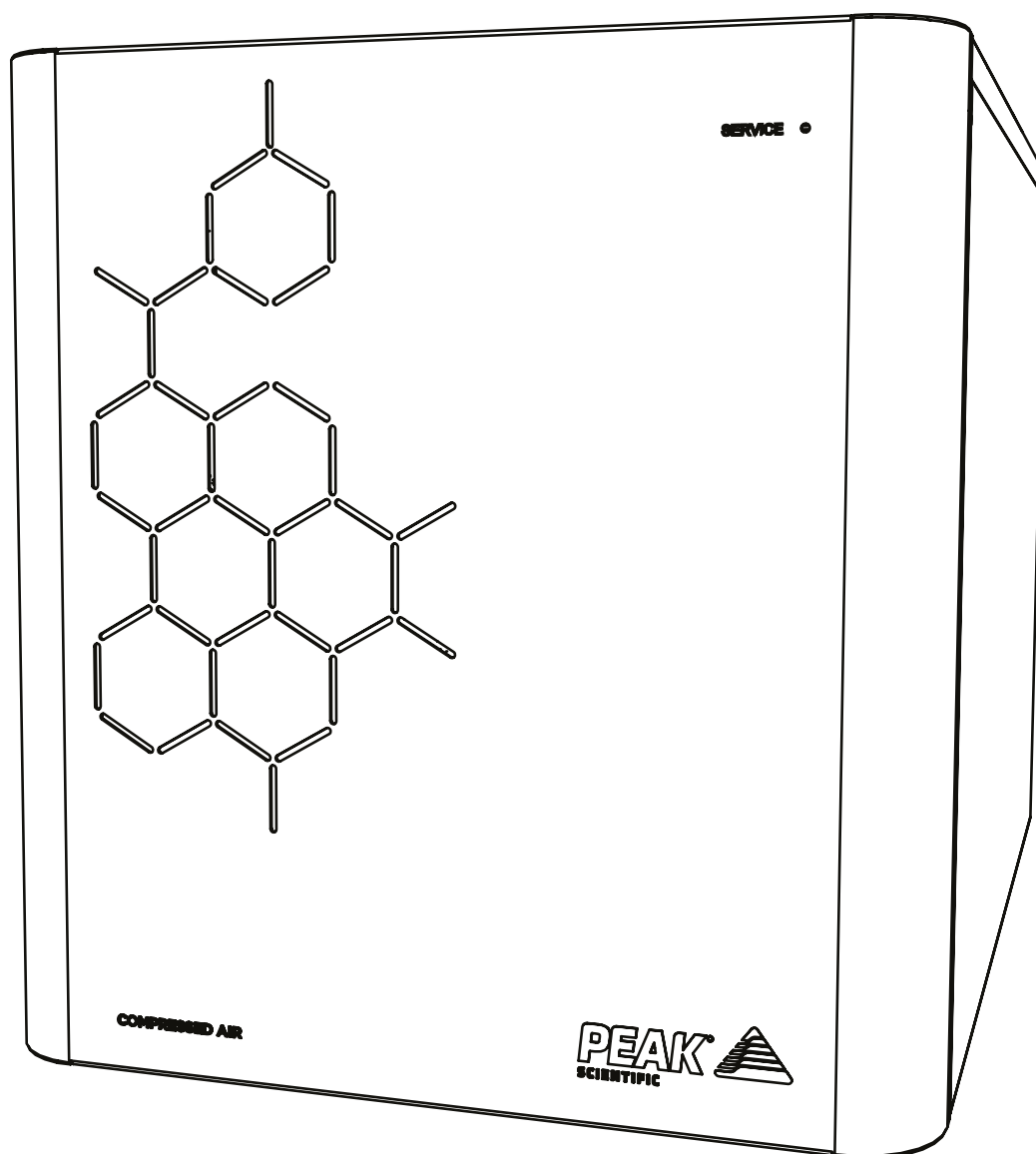


Precision Air Compressor

User Manual



PEAK 
SCIENTIFIC

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Change History

Rev	Comment	Name	Date
2	Cleaning info update	Liam Couttie	28/02/2018
3	Declarations Update	Liam Couttie	24/04/2018
4	Troubleshooting Update	Liam Couttie	25/02/2019
5	Updates to Incorporate CSA Feedback	Liam Couttie	07/11/2019
6	Declarations Update	Cleo Denholm	30/08/2021
7	Environmental Update	Liam Couttie	19/06/2024
8	Declarations Update	Liam Couttie	21/03/2025

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.

Please review each of the following sections carefully.

Thank you for selecting Peak Scientific to meet your gas generation needs, and should you require any further assistance or support please do not hesitate to contact Peak Scientific or the Peak Partner from which you purchased your air compressor.

Introduction

The Precision Air Compressor is designed to complement the Precision modular series of gas s, providing clean, dry, oil-free compressed air, while fitting neatly into any lab space.

Other features include:

- Suitable to supply compressed air for Precision Nitrogen, Nitrogen Trace and Zero Air systems as well as Peak Scientific TOC models.
- Generates compressed air on demand.
- Minimum maintenance with only a compressor service and filter change per annum.
- Small and Stackable.

With the Precision Air Compressor based on proven technology, it provides a source of dry, clean and oil-free compressed air.

To ensure this air compressor model meets our high expectations with regards to reliability and performance, we have tested this new model extensively at our manufacturing plant and with end users around the world to ensure reliability and longevity of the system.

Warranties and Liabilities




Visit: www.peakscientific.com/warranty-statement/

Safety Notices




Peak Scientific Instruments cannot anticipate every possible circumstance which may represent a potential hazard. 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 Peak Scientific, 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 air compressor.

 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 air compressor 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 air compressor has been removed before proceeding.

Safety Notice to Users

 WARNING	These instructions must be read thoroughly and understood before installation and operation of your Peak Air Compressor. Use of the air compressor in a manner not specified by Peak Scientific 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 maybe impaired.

EU Declaration of Conformity

We Peak Scientific Instruments Ltd.
Of Fountain Crescent, Inchinnan, Renfrewshire, PA4 9RE

Hereby declare that, this declaration of conformity is issued under the sole responsibility of the manufacturer.

Equipment Type: Air Compressor
Model Designator: Precision Air Compressor

To which this declaration relates, is in conformity with the following applicable EU Directives, harmonized standards, and other normative requirements.

- **Low Voltage Directive 2014/35/EU**
EN 61010-1: 2010+ A1:2019 Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use.
- **Electromagnetic Compatibility Directive 2014/30/EU**
EN 61326-1: 2013 Electrical Equipment for Measurement, Control and Laboratory Use - EMC Requirements. (Class A)
- **Restriction on the use of certain hazardous substances in electronic equipment (RoHS) Directive 2011/65/EU as amended by EU 2015/863.**

Signed for and on behalf of Peak Scientific by

Signed: 

Name: Fraser Dunn

Position: Design Engineering Manager
Peak Scientific Instruments Ltd,
Inchinnan, Renfrew, Scotland, PA4 9RE, UK.

Date: 26th June 2024



UK Declaration of Conformity

We Peak Scientific Instruments Ltd.
Of Fountain Crescent, Inchinnan, Renfrewshire, PA4 9RE

Hereby declare that, this declaration of conformity is issued under the sole responsibility of the manufacturer.

Equipment Type: Air Compressor
Model Designator: Precision Air Compressor

To which this declaration relates, is in conformity with the following applicable UK Statutory Instruments, Standards and other normative requirements.

- **The Electrical Equipment (Safety) Regulations 2016 (SI 2016 / 1101) as amended.**
BS61010-1:2010+ A1:2019 Safety Requirements for Electrical Equipment for Measurement Control and Laboratory Use.
- **The Electromagnetic Compatibility Regulations 2016 (SI 2016 / 1091) as amended.**
BS61326-1:2013 Electrical Equipment for Measurement , Control and Laboratory Use
- EMC Requirements.
- **The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (SI 2012 / 3032) as amended.**

Signed for and on behalf of Peak Scientific by

Signed: 

Name: Fraser Dunn

Position: Design Engineering Manager
Peak Scientific Instruments Ltd,
Inchinnan, Renfrew, Scotland, PA4 9RE, UK.

Date: 26th June 2024



WEEE Compliance Statement

The Waste Electrical and Electronic Equipment (WEEE) Regulations SI 2013 No 3113 and or the Waste Electrical and Electronic Equipment (WEEE) Directive 2012/19/EU apply to all electrical and electronic equipment placed on the market in the UK and EU covered by the scope of regulations which can be found in the Government Guidance Notes (PDF) produced by the Department for Business Innovation and skills for the UK and here for Europe.

All PEAK products that are subject to the WEEE directive are compliant with the WEEE marking requirement. Such products are marked with the “crossed-out wheellie bin” symbol (shown below) in accordance with European standard EN50419. All old electrical equipment can be recycled. Please do not dispose of any electrical equipment (including those marked with this symbol) in general rubbish bins. Please contact your dealer or distributor for clarity.



EMC Class A Compliance Statements

European Union (EU) and United Kingdom (UK) Class A Compliance statement

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC Class A Compliance Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



Industry Canada Class A emission compliance statement

This ISM device complies with Canadian ICES-001 (A).

Cet appareil ISM est conforme à la norme NMB-001 (A) du Canada.

Korea Communications Commission (KCC) statement

이 기기는 업무용(A급)으로 전자파적합기기로서

판매자 또는 사용자는 이 점을 주의하시기

바라며, 가정외의 지역에서 사용하는 것을 목

적으로 합니다.

(This is electromagnetic wave compatibility equipment for business (Type A). Sellers and users need to pay attention to it. This is for any areas other than home.)

CSA Compliance Statement

CSA Group (Canadian Standards Authority) is a Nationally Recognised Testing Laboratory (NRTL), headquartered in Toronto Canada.

They are authorised to evaluate product to both their own and Underwriters Laboratory (UL) standards and certify the product to be in compliance to the relevant standards.

Peak products are certified to the current in force revision of the following standards in order to cover both Canadian and United States requirements for “Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory use, Part 1: general Requirements”.

Canada : CAN/CSA C22.2 No 61010-1-12

United States : UL 61010-1

As a result the products covered by this statement are certified and listed by CSA accordingly and are entitled to carry the CSA mark with both Canadian and United States subscripts , as shown below on the product rating label.



Technical Specification

Precision Air Compressor

Environment

Minimum Operating Ambient Temperature	5°C (41°F)
Maximum Operating Ambient Temperature	35°C (95°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)

Compressor Outlets

Maximum Pressure	8.27 bar (120 psi)
Particles	<0.01µm
Phthalates	None
Suspended Liquids	None
Gas Outlets	1 x ¼" BSPP
Drain Outlets	1 x ¼" BSPP
Pressure Gauges	1

Electrical Requirements

Voltage	100/100-115v	220-240/208-230v
Frequency	50/60 Hz	50/60 Hz
Current	5/5.2A	2.3-2.7/3.2A
Input Connection	C14 Plug	
Power Cord (Supplied)	C13 Socket to Local Connection	
Pollution Degree	2	
Insulation Category	II	

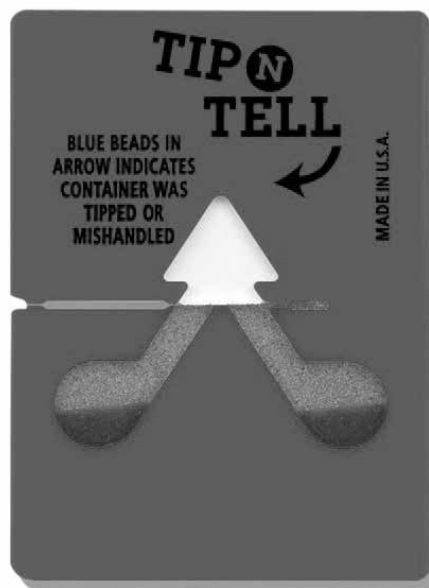
General

Dimensions cm (inches) WxDxH	38.0 (14.9) x 54.0 (21.2) x 40.6 (15.8)
Compressor Weight Kg (lbs)	42 (93)
Shipping Weight Kg (lbs)	45 (100)

Unpacking

Although Peak Scientific 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 Peak Scientific or the Peak Partner from where the unit was purchased.

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 air compressor onto the bench.

Please save the product packaging for storage or future shipment of the air compressor.

Note: Included with the air compressor 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 air compressor to the application. The contents of the Fittings Kit are as follows:

1. Teflon Tubing	x 3m
2. 1/4" Compression Fitting	x 2
3. 1/4" Tee Compression Fitting	x 1
4. 2.5mm Hex Key	x 1
5. UK Mains Power Cable	x 1
6. EU Mains Power Cable	x 1
7. US Mains Power Cable 110v	x 1
8. US Mains Power Cable 230v	x 1

All of the air compressor output ports are located on the output panel at the rear of the unit.

Unpacking Instructions

The unit weight constitutes a two person lift and as such, safe lifting practices should be employed; do not attempt to lift on your own, as you will significantly increase the chance of injury & damage to yourself and others around you.

1. Remove the screws encircled in red around the bottom of the crate lid and lift upwards.
2. Next, with someone on either side of the unit, position your hands underneath the unit ready to lift.
3. Ensuring your knees are bent and your back is straight, lift the unit to the desired location.

Installation

Compressor Environment

The air compressor is designed for indoor use only. Storing of corrosive substances near the air compressor is not recommended. Saline salt spillages around the air compressor should be cleaned up immediately. It should be installed adjacent to the application(s) it is supplying. 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 air compressor (like all sophisticated equipment) 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. Please refer to the drawing below for the general dimensions of the unit.

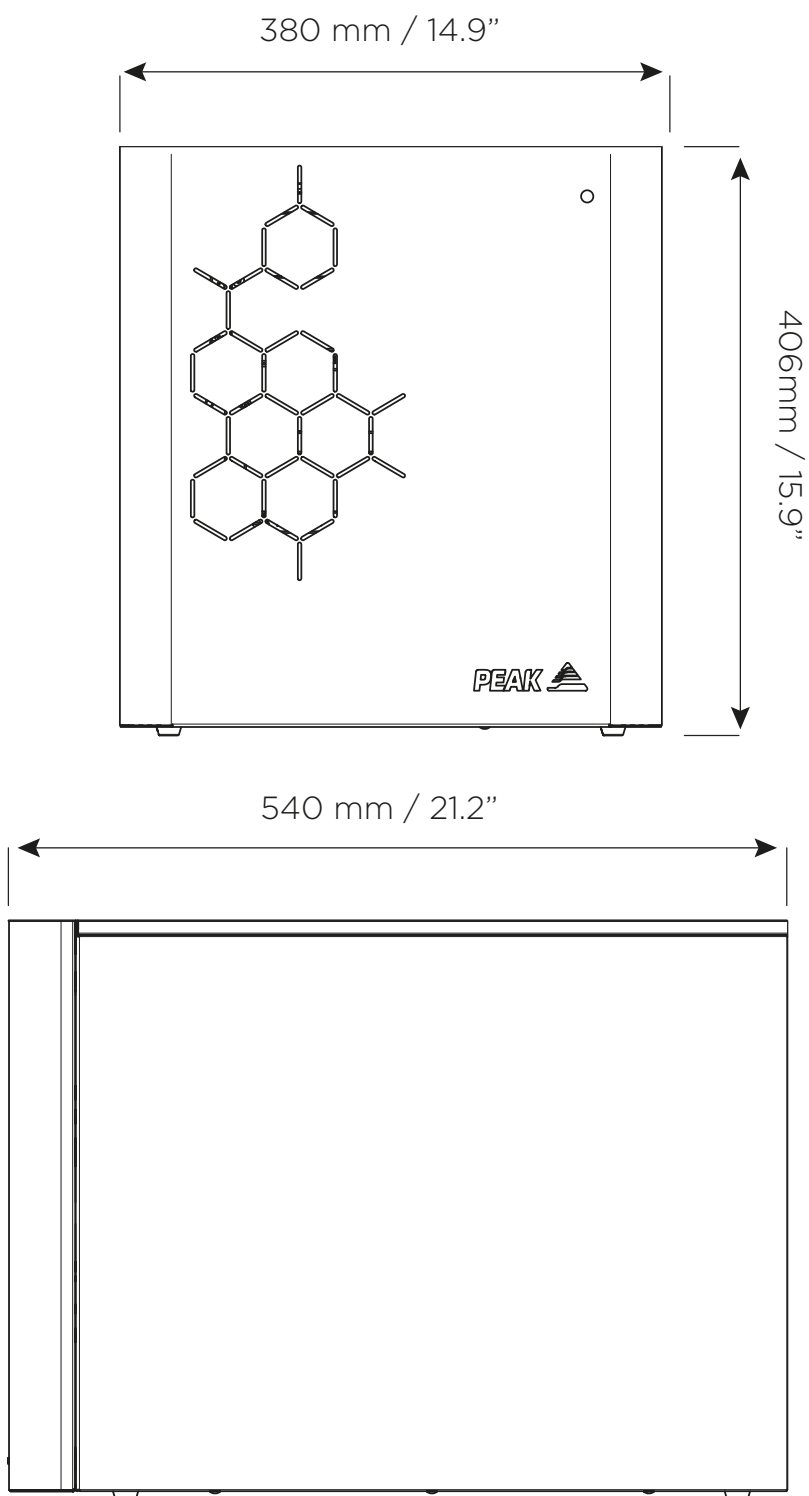
Please ensure Generator is situated in a well-ventilated environment and is positioned to allow easy disconnection from the mains supply if required.

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

Maximum Operating Ambient Temperature: 35 °C (95 °F)

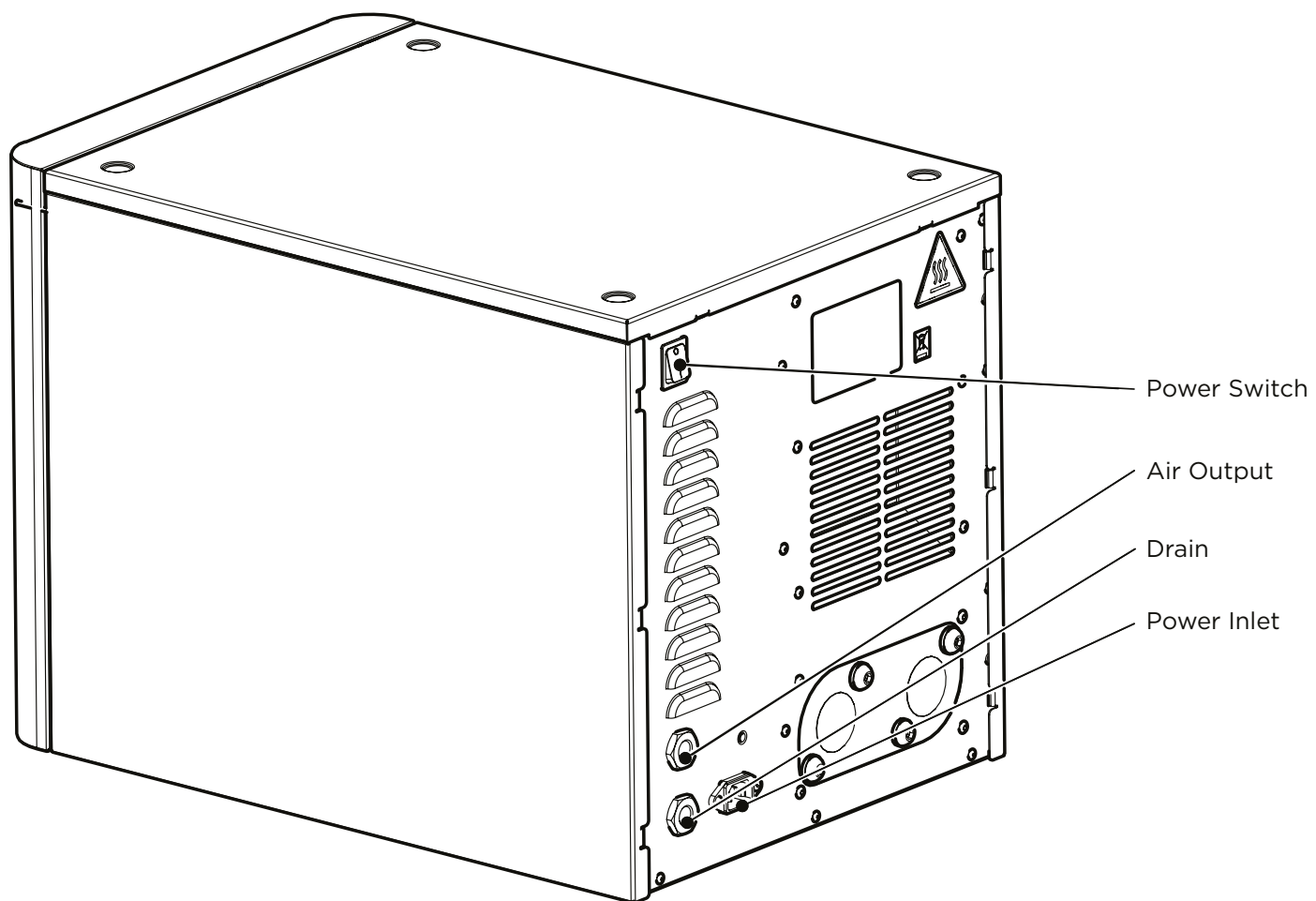
Compressor Overview

General Dimensions



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

Rear Connections



Electrical Connection

Connect the air compressor into an appropriate electricity supply, between 100-230VAC. Refer to the air compressor serial plate for input specification and ensure your supply matches the requirements.

If an appropriate mains power cords is not supplied or a substitute one is used then ensure that all components of it the plug, cord and connector have adequate ratings for the generator and appropriate approvals for the country of use. Failure to do so could cause damage to the generator or risk overloading of the power cord



This unit is classified as SAFETY CLASS 1. THIS UNIT MUST BE EARTHED. Before connecting the unit to the mains supply, please check the information on the serial plate. The mains supply must be of the stated AC voltage and frequency.

EARTH/GROUND (E):- Green & Yellow or Green

LIVE (L):- Brown or Black

Neutral (N):- Blue or White

Electrical requirements are nominal +/- 10% depending on chosen model. Extended periods at extremes can have a detrimental effect on the operation and life of the Air Compressor.



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

Connecting to the application

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



The pressure in the internal storage tanks must be allowed to dissipate before connecting the compressor to the application(s)

Attach the 1/4" compression fitting to the outlet of the air compressor. Using the 1/4" tubing supplied, connect the outlet of the air compressor to the inlet on the application.

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



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

Tubing Lengths



The diameter of the tubing which will be connected to the gas outlet is important and is determined by the length of tubing required. Failure to follow these recommendations could lead to excessive pressure drop between the air compressor and its application

- < 10 meters: Use 1/4"/3/16" (1/4" O/D, 3/16" I/D) P.T.F.E. tubing.
- > 10 - 40 meters: Use 3/8"/5/16" (3/8" O/D, 5/16" I/D). Tubing and fittings not supplied in the fittings kit.
- > 40 metres: Please contact Peak Scientific with the relevant distance and we will calculate the flow resistance and the tubing size required.

A combination of 1/4"/3/16" and 3/8"/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 air compressor use 3/8"/5/16" and the final 10 meters to the application use 1/4"/3/16" tubing). Keep the connections and bends to a minimum.

Normal Operation

The Precision Air Compressor is designed specifically to minimize operator involvement. Given that the system is installed as described in earlier sections and is serviced in accordance with the specified maintenance recommendations (see Service Requirements), then it should simply be a matter of turning the air compressor on when it is required.

The air compressor will automatically produce the factory set flow and pressure as detailed in the Technical Specifications.

On Demand Gas

The air compressor system will produce compressed air on demand. If the application is operating and requires a gas flow, the system it is connected to will supply this to suit the requirements of the application. If the application requirement for gas stops, the system will also stop, once it has reached its upper set limit in the internal storage tanks. If the demand from the application starts again, the system will detect the demand for gas and will automatically start again to suit the demand.

Unusual Operation

If at any time the air compressor begins to emit excessive noise or vibration, then it should be switched off and you should contact Peak Scientific or the Peak Partner from which the unit has been purchased.

Service Requirements

Service Schedule

Purchase Interval	Component	Visit
12 months	Precision Compressed Air Annual Service Kit	www.peakscientific.com/ ordering


Peak Protected

With Peak Scientific you invest in not only a product but peace of mind. With a network of certified Peak engineers stationed throughout the globe, Peak's rapid response team are never far away and our commitment is to keep your running day in, day out, protecting your laboratory workflow.

[Peak Protected] can provide...



Installation
A dedicated Peak engineer will visit your lab to install and setup your generator



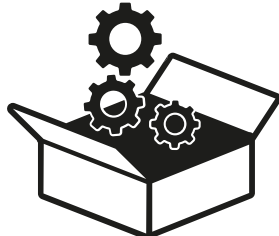
Complete plan
Swift response by a Peak Service Engineer within 72 hours & planned preventative maintenance



Premium Protected
Guaranteed rapid on-site response within 24 hours & planned preventative maintenance



IQ/OQ
Certified assurance for applications requiring documented qualification



Spares
Genuine Peak parts with express delivery, ensuring optimal performance and lifetime



Technical Support Hotline
Around the clock support by phone or online with our global technical helpdesk

To find out more about protecting your investment visit: www.peakscientific.com/protected

Chlorinated hydrocarbons

Chlorinated hydrocarbon compounds and chlorofluorocarbons (or freons) will severely damage the hydrocarbon catalyst used in this gas generator, resulting in generator failure.

The generator can also be contaminated by high concentrations of lead, sulfur or phosphorous compounds, heavy metals and long chain polymers. Care should be taken to avoid introducing these compounds into this gas generator. Please ensure that none of these compounds are stored near the intake of the compressed air supply supporting the gas generator.

Chlorinated Solvents

Under no circumstances should any Chlorinated solvents be stored in the immediate vicinity of the gas generator or the compressed air source. Failure to adhere to this could result in severe contamination of the generator or failure.

Cleaning

Clean the outside of the unit 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 air compressor.





Under no circumstances should any solvents or abrasive cleaning solutions be used as these can contain fumes that could be harmful to the air compressor. Chlorine-based bleach cleaning solutions should not be used on the air compressor or within its operating environment.



Care should be taken with Leak Detections Liquids.

Troubleshooting

Problem	Possible Solution
The air compressor will not switch on and the power switch does not illuminate.	<ul style="list-style-type: none"> • Ensure power cord is plugged into the air compressor and that the power socket is turned on. • Check the fuse in the power cord plug. • Contact your service provider. 
The air compressor will not switch on but the power switch is illuminated.	<ul style="list-style-type: none"> • Disconnect power cord from the rear of the air compressor. Open the left hand panel are check that the circuit breaker in turned on (switch in the up position). Reconnect power cord. • Contact your service provider. 
Compressor is running but pressure is not building.	<ul style="list-style-type: none"> • Contact your service provider.
Yellow “SERVICE” LED on front panel is on constantly.	<ul style="list-style-type: none"> • The compressor is due for service. Contact your service provider. • Refer to Service Indication section of this manual for further information.
Yellow “SERVICE” LED on front panel is flashing.	<ul style="list-style-type: none"> • The compressor is overdue for service. Contact your service provider urgently. • Refer to Service Indication section of this manual for further information.
Lights on front fascia flashing amber – green	<ul style="list-style-type: none"> • Contact your service provider.

Go Online or Complete and Return

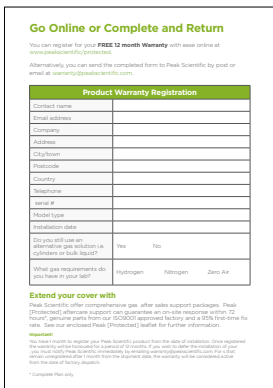
We know that registering any of your recently purchased products is not the first thing on your mind- but it is very important to both of us. Not all warranties are alike and Peak Scientific stand out against other gas suppliers as we offer a comprehensive, quick response, on-site warranty. This means that in the very unlikely case that your gas develops a fault we have rapid support teams on-hand around the world who are able to come to your lab and get you back up and running in no time.

Register for your **comprehensive 12 month on-site warranty** with ease online at www.peakscientific.com/protected.

Alternatively, you can send the completed form to Peak Scientific by post or email at warranty@peakscientific.com.



The screenshot shows the 'Protected' page on the Peak Scientific website. It features a 'Serial Number' field, a 'Registration Date' field, and a 'Contact Details' section with fields for 'First Name', 'Last Name', 'Email Address', and 'Phone'. A green 'Submit' button is visible at the bottom left.



The form is titled 'Go Online or Complete and Return' and includes instructions on how to register for a warranty. It contains a 'Product Warranty Registration' table with fields for contact information and product details. Below the table, there is a section for 'Extend your cover with' and a 'Notes' section.

Product Warranty Registration	
Contact name	
Email address	
Company	
Address	
City/Town	
Postcode	
Country	
Telephone	
Serial #	
Model type	
Installation date	
Do you still use an alternative gas solution (e.g. cylinders or bulk liquid)?	Yes No
What gas requirements do you have in your lab?	Hydrogen Nitrogen Zero Air



Important!

You have **1 month to register** your Peak Scientific product from the date of installation. Once registered the warranty will be honoured for a period of 12 months. If you wish to defer the installation of your air compressor, you must notify Peak Scientific immediately by emailing **warranty@peakscientific.com**. For air compressors that remain unregistered after 1 month from the shipment date, the warranty will be considered active from the date of factory dispatch.

[PEAK Protected]TM

Peak Scientific has highly trained, fully certified Field Service Engineers located in over 20 countries across every continent around the world. This allows us to provide an industry-leading rapid response service to our customers. With **[Peak Protected]**, your laboratory's productivity becomes our top priority.

To discuss Peak Protected generator cover and payment options speak to your local Peak Representative or for further information contact: **protected@peakscientific.com**

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For further information on any of our generator products please contact **marketing@peakscientific.com**

