



21111008
Anemos
Scroll Vacuum Pump
User Manual

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For claims under the warranty please contact your local supplier. You may also send the instrument directly to manufacturer, enclosing the invoice copy and by giving reasons for the claim.

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II. Safety

IMPORTANT Safety Items to be Observed.

Safety Warnings

! DANGER (may cause serious damage to property and or casualties)

- Please carefully read this User Manual prior to operating the instrument and observe the instructions on safe operation.
- Ensure that only trained staff operate this instrument
- The power source must be grounded reliably and away from any sources of electromagnetic interference.
- Ensure that the instrument and its accessories are free of any potential defects.
- Confirm that the voltage and frequency of the power supply matches the specified voltage and frequency specified prior to use.
- Ensure the cover of the junction box is properly installed prior to operation.
- Always wear applicable PPE whilst operating the instrument.
- High Temperature Hazard; Do NOT touch the pump whilst in operation
- Avoid inhalation and contact with toxic liquids, gases, spatters, vapor, dust, biological or microbiological mediums as these may be harmful to the operator.
- Place the instrument on a stable, dry, clean, antiskid, and fireproof surface.
- Ensure there is sufficient ventilation gaps and spacing above and around the instrument
- Ensure the instrument is stable and level and will not move due to vibration upon start-up.
- The instrument must always be monitored whilst in operation.
- Gases, vapours, or other substances at the exhaust may be harmful.
- When moving the Pump ensure the Pump is switched 'OFF' and the Power Supply is disconnected.
- Ensure the lifting eye is securely tightened prior to lifting the pump.
- Ensure the pump is kept in normal operating orientation during transport. Failure to do so can cause pump damage and or oil spillage.

! WARNING (may cause property damage or personal injury)

- The working environment must be free of any flammable, explosive, volatile or corrosive substances. If long term storage is required, clean the pump and empty all oil. Store the pump in a dry clean area at room temperature
- Ensure handling and disposal of used oil and other parts are compliant with local environmental laws

and regulations.

- Do not block the motor vent.
- Only accessories listed as 'optional accessories' for use, can guarantee operational safety.
- Ensure handling and disposal of packaging is compliant to local environmental laws and regulations.

! ATTENTION (may affect operational performance or service life)

- The instrument is deenergised only when the power cable is disconnected from the power source.
- Ensure the instrument and its accessories are protected external vibration.
- The Company reserves the right to modify the design and technical data of the pump without notice.
- Only accredited and qualified professional repair technicians can open the instrument or conduct required repairs. Persons performing repairs on the instrument other than those selected or approved by the Company shall operate to void any warranty contained hereinabove for the product

2.1 After Sales Support

If problems are encountered or technical support is required when installing or using the instrument, please contact saleseurope@hollandgreenscience.com

The company may provide technical assistance and information regarding the instrument or equipment or service without charge at its sole discretion. Buyer assumes sole responsibility for any reliance on or use of such assistance and information, and the company makes no warranty thereon.

Upon contact the following information is required:

- Product serial number (located on the instrument nameplate)
- Description of issue or problem
- Method and or operating steps you have undertaken towards resolution.
- Your contact details inclusive of telephone number and email address.

III. Anemos Oil-free Scroll Vacuum Pump

3.1 Introduction

The Anemos oil-free scroll vacuum pump uses oil-free scroll compression technology. It has a low leakage rate, and a high compression ratio. The vacuum pump offers a steady pumping speed over a wide pressure range. Because the change of the compression volume is continuous, the driving torque and power are almost constant. The working cavity formed by the orbiting scroll is symmetrical and the vacuum pump has a very low level of vibrational noise. The vacuum pump is oil free, and thereby eliminates the common problem of oil contamination in the vacuum chamber.



3.2 Precautions

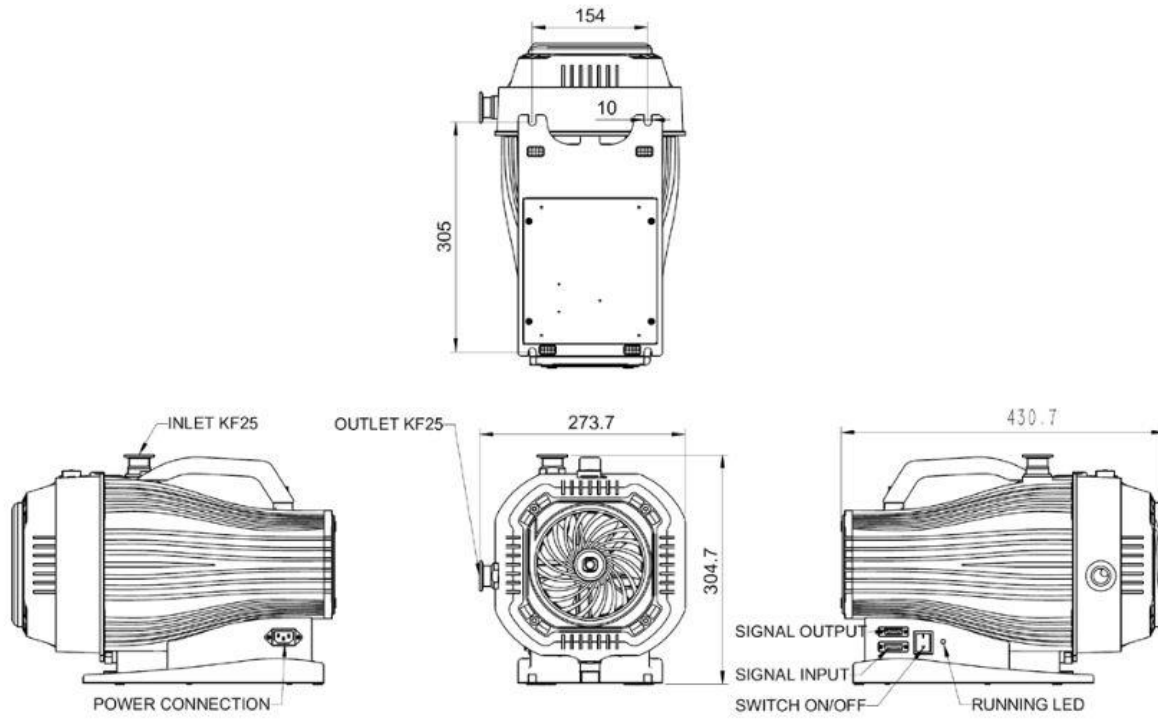
- The vacuum pump should not be used to remove acid or alkaline solutions or corrosive gases. Such substances will cause the pump's fixed scroll, orbiting scroll, and other parts to be corroded and shorten the lifespan of the pump. The vacuum pump can be used in applications where organic solvents need to be removed. If the pumping medium contains water vapor or liquid water, it may adversely affect the pump's throughput and lengthen the time needed to attain an acceptable level of vacuum.
- The vacuum pump uses PTFE material for the tip seal on the compression chamber. It is normal for a small amount of PTFE powder to be present in the exhaust during pumping. Therefore, it is strongly recommended that no exhaust silencer or muffling system be used at the pump's outlet. If a filter-type silencer must be installed due to noise, it is recommended that the filter be cleaned regularly and replaced every six months. The silencer may cause the exhaust pressure of the pump to rise due to the air resistance and shorten the lifespan of the pump.
- The vacuum pump is not suitable for removing substance that contains a large amount of powder. The composition, size, and content of the powder will affect how well the pump works. Please contact the service department first before purchasing to confirm that the vacuum pump is suitable for your application if a large amount of powder needs to be pumped.
- If the pump has been unused for more than 3 days, or the customer needs to pump the chamber to below 5 Pa, it is recommended that the pump be first run for 20 minutes with no loading (open the air inlet first and vent for 1-2 minutes).
- If a small amount of liquid water or water vapor gets into the pump, it will affect the pumping rate and increase the amount of time to achieve vacuum. It is recommended that the pump run with the gas ballast open for about 20 minutes to remove any water from the pump.
- The vacuum pump should not be operated with an open inlet port for any significant time.

IV. Technical Specifications

4.1 Specifications

Model		21111008
Product Name		Anemos
Nominal pumping speed	L/S	3
	L/min	180
Ultimate Vacuum	mbar	0.008
	Pa	0.8
Leak rate	mbarl/s	$< 1 \times 10^{-6}$
	pa·m ³ /s	$< 1 \times 10^{-7}$
Motor voltage (V)		Single-phase 230V/50Hz
Motor power (W)		400
Motor speed (rpm)		1800
Max Current Draw (Amps)		3
Dimension (mm)		430 L x 255 W x 290 H
Noise (dB(A))		54
Inlet port		NW 25
Outlet port		NW 25
Water vapor capacity (gh-1)		100
Weight (kg)		28
Cooling		Air
Ambient Temperature (°C)		5 - 40

4.2 Dimensions



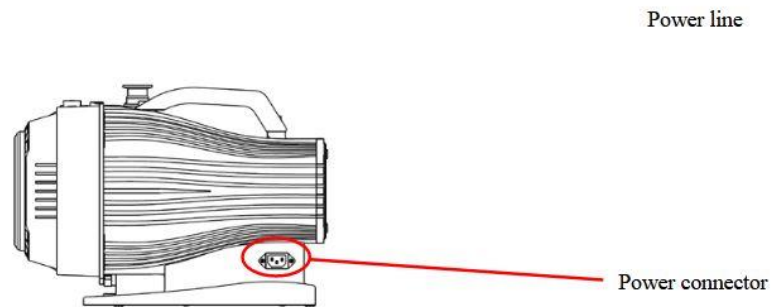
V. Installation and Operation

5.1 Operation environment requirement

- Do not expose the pump to wet conditions (such as rain or steam). Moisture may cause the power connector to malfunction.
- Do not expose the pump to flammable or explosive gases.
- The pump should be operated in a temperature controlled environment from ° 5 C to 40 ° C. If operated outside this temperature range, the pump may be damaged.
- The pump should not be used in a dusty environment or near corrosive gases. Operating in such environments will reduce the lifespan of the pump.
- There should be adequate ventilation for the pump.

5.2 Electrical Connection

The Anemos vacuum pump uses a single-phase power. Wiring method is shown below.



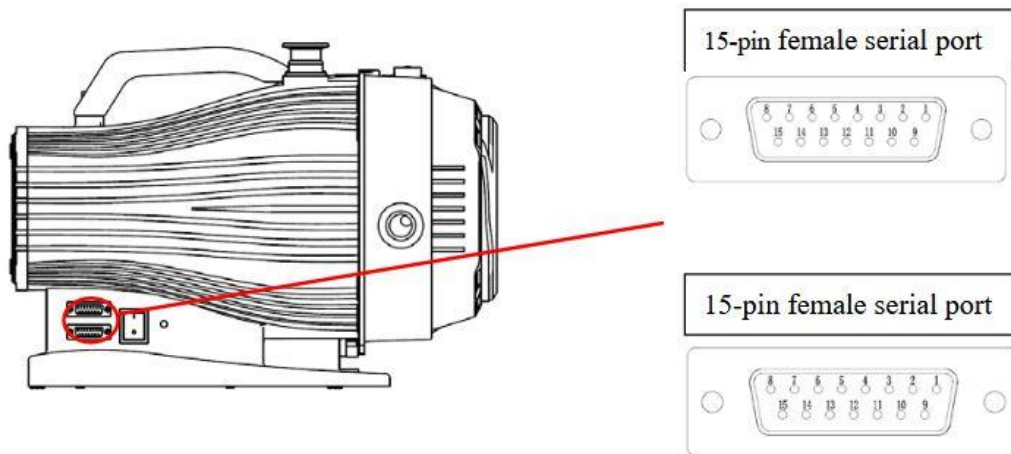
Connect the power line to the power connector on the pump. Turn on the power switch (“1” is pressed and “0” is in the raised state) and the pump is ready to run.

5.3 Operation

- Before starting be certain that all sure seals are tightly secured.
- If the pump is used for the first time or used after a long period of inactivity, open the inlet and outlet ports and run the pump for 5 minutes to remove any water vapor that might get into the compression chamber.
- Close the isolation valve between the pump and chamber to prevent blow-back.

VI. Interface

There are two 15-pin female serial ports located on the base of the pump. The top 15-pin serial port doesn't apply to this vacuum pump model. The bottom 15-pin serial port is used to connect a pressure sensor to the vacuum pump to read pressure data.



6.1 Pin definition

The bottom 15-pin female serial port (pressure sensor port)


No	Signal	Function
1	A+	Serial communication 485A +
2	B+	Serial communication 485B+
9	485SG	Serial communication 485 ground
7	24V	Pressure sensor 24V power
8	FIC	Pressure signal 1-5V/0-10V
15	GND	Pressure sensor 24V power ground

VII. Inspection

Unpack the equipment carefully and check for any damage which may have arisen during transport. In the event of identified damage, please contact saleseurope@hollandgreenscience.com

The package includes the following items

Item Description	Quantity
Main Unit	1
Quick Setup Card	1
Plastic cover	2
Power cable	1
NW25 Net filter (Including O-ring)	1
Inspection certificate	1

	<p>CAUTION:</p> <p>If there is any visible damage to the instrument, please do not connect the instrument to a power supply.</p>	
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VIII. Maintenance

When the pump is used for a specified period, some inspection and maintenance work is required. Otherwise, it will affect the performance and lifespan of the pump.

Inspection part	Maintenance frequency	Remark
	Two years or 12000 hours	
Bearing	○	
O-ring	○	
Tip seal	○	

- – Replace

Maintenance work should be done by the manufacturer or authorized distributor. Disassembling the pump beyond the above stated bearing, O-ring, tip seal replacement by the customer will void the warranty.

IX. Troubleshooting

Fault	Possible Reason	Remedy
Pump Not Starting	Power supply protection component malfunction	Check if the protection component is normal.
	Loose or broken wires	Check for bad contact and repair, replace the problematic wire.
	Motor overload or open circuit	Return to the service department for repairing.
	Defect pump	Return to the service department for repairing.
Poor ultimate vacuum	A leak in the system	Leak testing
	Damage of the O-ring	Replace the O-ring
	Water vapor inside the pump	Install a filter to prevent water vapor. Open the inlet port to ATM for several minutes. Run pump with gas ballast for about 24 hours.
	Gas ballast block	Adjusting the pressure balance
Abnormal noise and vibration	Connection loose	Make connection tight
	The installation location is not horizontal	Make the pump installed horizontally
	Dust into the pump body	Return to the service department for repairing
	Exhaust port defect	Return to the service department for repairing
	Motor defect	Return to the service department for repairing
	Defect pump	Return to the service department for repairing

Holland Green Science Europe B.V.

Mauritskazerne D41, Office D21

Nieuwe Kazernelaan 2

6711 JC EDE, The Netherlands

Tel: +31643498156

E-mail: SalesEurope@hollandgreenscience.com

E-mail: ServiceEurope@hollandgreenscience.com

Chamber of Commerce number: 82526494

VAT number: NL862505744B01