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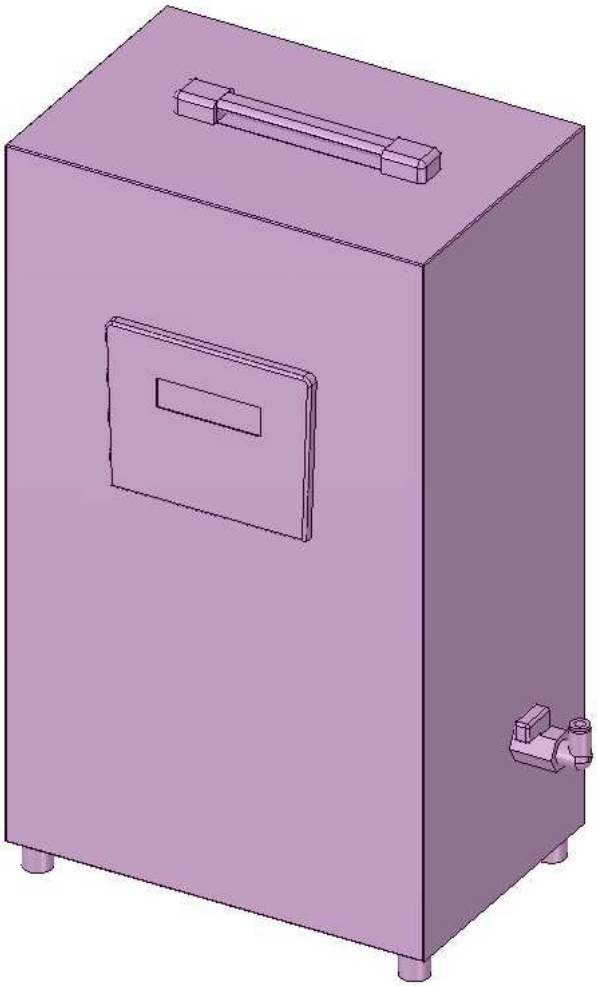
Winegen20N Nitrogen Generator



OPERATION & MAINTENANCE MANUAL

Contents

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Symbols used within this guide

Highlights actions or procedures, which if not performed correctly, may lead to personal injury or death.

Highlights actions or procedures, which if not performed correctly, may lead to damage to this product.

Highlights actions or procedures, which if not performed correctly, could lead to electric shock.

Highlights the requirements for disposing of used parts and waste.

DANGER
Disconnect the mains supply before removing this cover

Visual Check

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1. Safety Information

WineGEN Gas Generators are designed to replace high pressure gas cylinders as an everlasting gas supply. The maximum internal pressure found within the generator is 6.5 barg (94.3 psig), and the regulated outlet pressure is 5 barg (72.5psig).

Do not operate the nitrogen generator until this instruction manual has been read and understood by all personnel concerned.

It is essential that personnel employ safe working practices and observe all related regulations, and legal requirements for safety when operating this equipment. When handling, operating or carrying out maintenance, personnel must employ safe engineering practices and observe all relevant local health and safety requirements and regulations.

Ensure that the equipment is depressurized and electrically isolated, prior to carrying out any of the scheduled maintenance instructions specified within this user guide.

Although nitrogen is not a poisonous gas, when its concentration in air becomes too high (thus replacing oxygen) there is a risk of asphyxiation. The generator system produces a small flow of nitrogen gas which quickly disperses into the atmosphere. However, DO NOT directly inhale the product gas from the generator or work in close proximity to the nitrogen outlet.

Winegen can not anticipate every possible circumstance, which may represent a potential hazard. The warnings in this manual cover the most known potential hazards, but by definition cannot be all-inclusive. If the product user employs an operating procedure, item of equipment or a method of working which is not specifically recommended by Winegen the user must ensure that the product will not be damaged or made potential hazard to persons or property.

This product should be installed in accordance with the recommendations outlined in this manual. Commissioning and service should be undertaken by a Winegen trained, qualified and approved engineer to maintain warranty.

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2.Technical specifications

Model	WineGEN-20N
Flow	Up to 1 l/min continuous
Nitrogen Storage	20 litre
Nitrogen Purity	<99.5%
Outlet Pressure	5 barg
Pressure Switch	6.5 barg
Power Rating	130 W
Fuse rating	4 A
Mains voltage	230V/50Hz (Special :110V/60Hz or 230V/60Hz)
Environment temperature	+5 to +30 °C (41 - 86 °F)
Maximum permissible ambient relative humidity	80% for temperatures up to 30 °C, decreasing linearly to 60% at 35 °C (non corrosive environment)
Maximum altitude	2000 m above sea level
Dimensions	
Height	535mm
Width	354mm (including outlet valve and fitting)
Depth	208mm
Weight	18Kg

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3. Product description

The Winegen20N Nitrogen Generator is designed to supply and store nitrogen gas at a pre-determined pressure and flow. The Generator is designed for 24 hour use and is powered from a standard 2 or 3 pin mains socket of 230V/50Hz; 230V/60Hz or 110V/60Hz (depending on model).

The rated voltage of the Generator is marked clearly on the serial plate which can be found on the outside of the enclosure.

The Nitrogen is produced using the Pressure Swing Adsorption technique which utilises a carbon molecular to trap oxygen and water, and allows nitrogen to pass through it pores. At the end of a pre-determined period the oxygen is released from the sieve and then pressurisation period can re-start to generate once again. The process is totally equalising, this means that although nitrogen flows from the outlet the remaining oxygen is vented from the enclosure. This is unlike a nitrogen gas cylinder which only has nitrogen in, which gives a higher risk to a build up of nitrogen gas than the Gas Generator.

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4. Unpacking the equipment

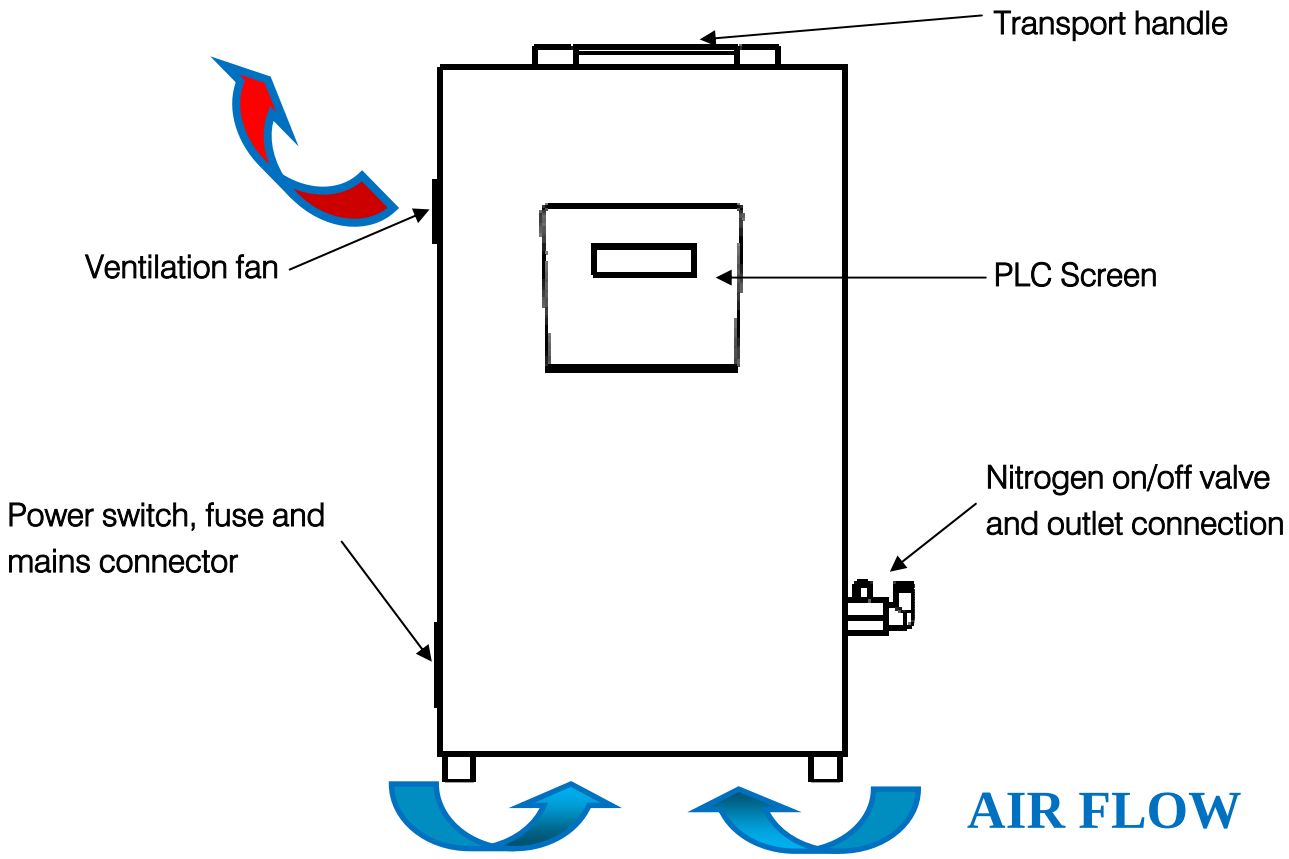
Remove the equipment from its packaging, check that it has not been damaged in transit and verify that the following items have been included with the equipment:

Description	Qty
Suitable mains lead for the country of operation	1
Instruction manual	1
Gas fitting/adaptor 8mm male to 4mm tube	1

If any items are missing or damaged please contact your Winegen representative.

All packing material should be disposed of in accordance with local regulations

4.1 Overview of the equipment



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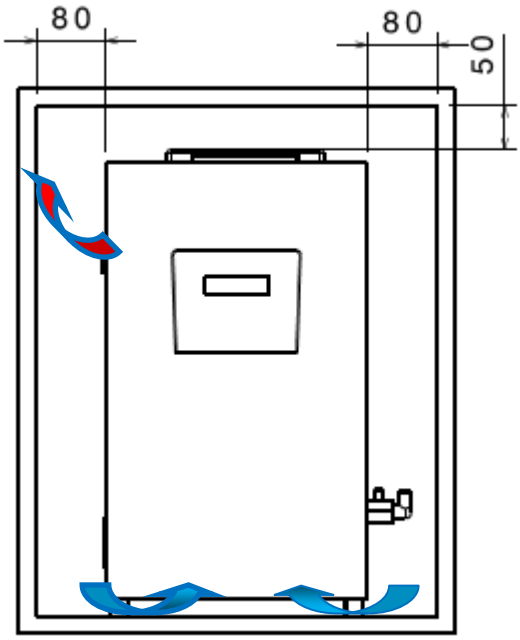
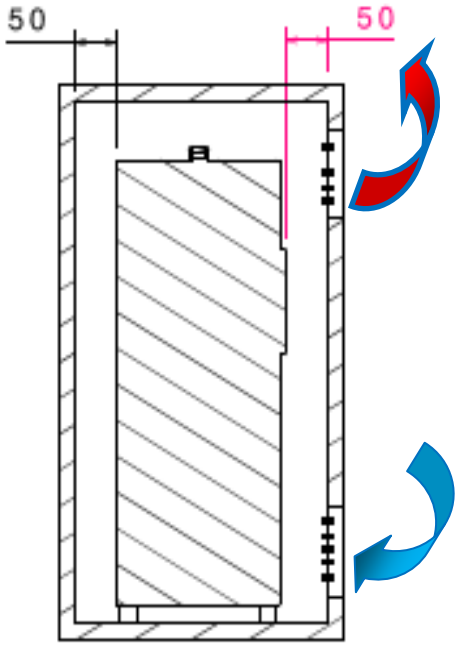
5. Installation

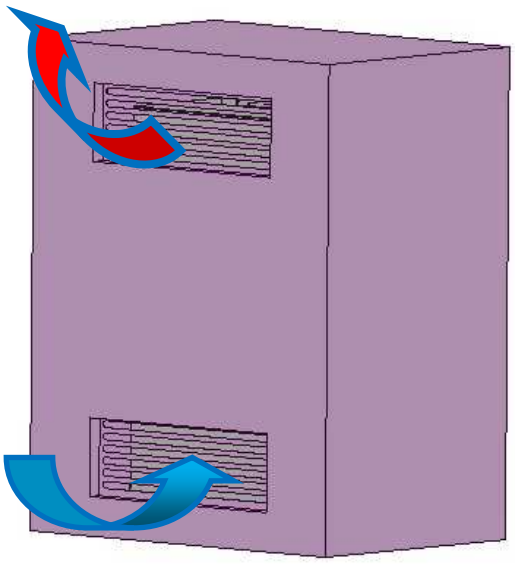
Failure to meet any of the following requirements could result in a loss of performance or invalidate the generator's warranty.

Minimum clearance for ventilation (Example of installation in enclosed cabinet)
All dimensions in mm



AIR FLOW





The ambient conditions for optimum performance should be between +5 and +30ºC.

Higher temperatures may affect gas purity and the expected life of the compressor.

The Generator should be installed in a well ventilated room, free from dirt, oil, moisture and away from heat sources such as radiators and fan heaters.

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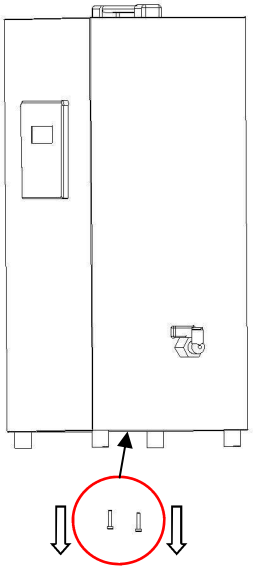
Installation continued...

Only competent personnel trained, qualified, and approved by Winegen should perform installation, commissioning and service procedures.

Failure to meet any of the following requirements could result in a loss of performance or invalidate the generator's warranty.

Although Winegen Int. takes every precaution to ensure safe transit, it is advisable, after carefully removing the generator from its packaging material, to carry out a thorough visual examination for any signs of transit damage. Any damage should be reported immediately to the carrier and Winegen Int. and/or the distributor from where it was purchased.



Before switching on the unit, make sure that the transport bolts for the pump are removed.

The generator comprising of a free standing enclosure should be positioned on a solid level base as close to the application as possible.

Please make a note of the following from the rating plate located on the generator for future reference:

Model No. WineGEN—

Serial No. WG—

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6. Commissioning

Only competent personnel trained, qualified, and approved by Winegen should perform installation, commissioning and service procedures.

Failure to meet any of the following requirements could result in a loss of performance or invalidate the generator's warranty.

STEP 1

With the Generator situated in its correct location connect the mains electrical cable and socket to the Generator and mains supply. The type supplied is an IEC connector (3 pin). Check the rating plate for correct voltage and power; ensure power supply is sufficiently rated to run the Generator.

STEP 2

Ensure the outlet ball valve on the side of the generator is in the CLOSED position.

STEP 3

Turn the generator ON using the on/off switch located on the side of the enclosure. The front screen will display for a few seconds a start-up message, then the screen will show the STORAGE PRESSURE (P), HOURS RUN (Hr), COMPRESSOR PUMP TEMPERATURE (Tp), INTERNAL AMBIENT TEMPERATURE (Ta). After 90 seconds the compressor will start, leave the generator to run until the front screen pressure indicates 6.5 bar, in which time the compressor will stop automatically.

STEP 4

Connect to the application before opening the valve, and the system is now ready to use.

Note: During intensive usage of the Generator the pump temperature (Tp) may reach 80°C. Under these circumstances, it is normal!

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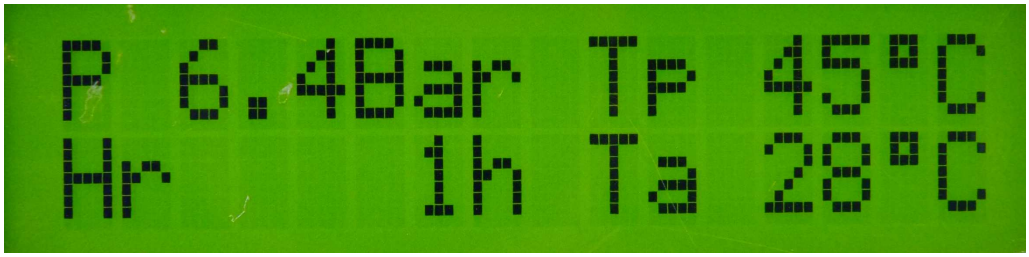
7. Operation

Once the Generator is installed and commissioned there is no user intervention required to use the Generator. As long as it has mains power it will continue to produce high grade nitrogen gas to the application 24 hours a day.

The cooling fan motor will start immediately and after approximately 80 seconds the on-board compressor will start. The nitrogen generation process will consist of a compressor run sequence followed immediately by an exhaust sequence. An audible pressure release will indicate that the unit is producing N2.

It is recommended to leave the Generator on continuous and not switched off, as the system has a built in pressure sensor / switch to turn the generator on and off when gas is or is not required.

Display:



Weekly checks:

- Check Display for outlet pressure and hours run to ensure everything is working as normal, record any changes for future reference
- Ensure there is adequate ventilation clearance around the Generator

12 Months checks:

- Check the condition of the electrical supply cable.

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8. Service schedule

Only competent personnel trained, qualified, and approved by Winegen should perform commissioning and service procedures

Failure to meet any of the following requirements could result in a loss of performance or invalidate the generator's warranty

The Service Schedule for the 'WineGEN' is as follows and must be followed in order to maintain the reliability of the Generator and also to ensure the validity of the Warranty.

1500 Hour Service (or 2 years)- Part Number: **15S/WG20**

Winegen20N must be serviced every 1500 hours, which is indicated on the hours run meter, or if 2 years have elapsed since running the Generator (see rating plate for year of manufacture, Example: "SN: WG**14**1-0001"). The meter only counts hours of generating time, not continuous, so it can take sometime to reach 1500 hours depending on gas usage. This service involves the changing of the compressor air inlet filter element, air line filter, purge silencer and compressor relay.

Follow the instructions to complete the service which can be found on the following pages.

3000 Hour Service – Part Number: **30S/WG20**

When 3000 hours is indicated on the hours run then a service of the compressor unit is necessary. For this service the seals in the compressor unit are replaced, as well as a standard 1500 hours service change.

Contact your Supplier for information and instructions on this Service.

9000 Hour Service (or 5 years)- Part Number: **90S/WG20**

When 9000 hours is indicated on the hours run, or if 5 years have elapsed since running the Generator (see rating plate for year of manufacture, Example: "SN: WG**14**1-0001" the first two numeric digits from the Serial number are representing the Year of manufacturing) then a Major overhaul of components is recommended to ensure the Generator will run reliably for years to come. For this service the Solenoid Valve and PLC are replaced, as well as a 3000 hour service and standard 1500 hour service change. This Service must only be carried out by a qualified engineer; failure to adhere to this may result in damage to the Generator.

Take a note of the serial number and contact your Supplier for information and instructions on this Service.

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8.1 1500 hours service instructions

Step 1

Order your 1500 Hour service kit from your supplier; always quote the model and serial number when ordering.

Step 2

Decide on a time when the Generator can be switched off for a period of approximately 2 hours. This in order to allow cooling, service, re-start and purging to obtain the correct gas purity.

Step 3

Switch the generator off at the mains and remove the mains plug from the side of the enclosure.

Step 4

Close the outlet ball valve, disconnect from the application, then open the ball valve to release the internal pressure, leave for 5-10 minutes to ensure all pressure is released.

The Generator will build up a residual internal pressure that must be released if unit is to be serviced or shipped. In order to depressurise follow the service instructions.

Step 5

Using a Philips screwdriver open the enclosure by removing all side screws, for access to service parts, leave generator off for 30-60 minutes until the compressor motor is cool enough to touch.

The compressor is very hot! Leave generator off for at least 30 minutes for compressor cooling

DANGER
Disconnect the mains supply before removing the cover

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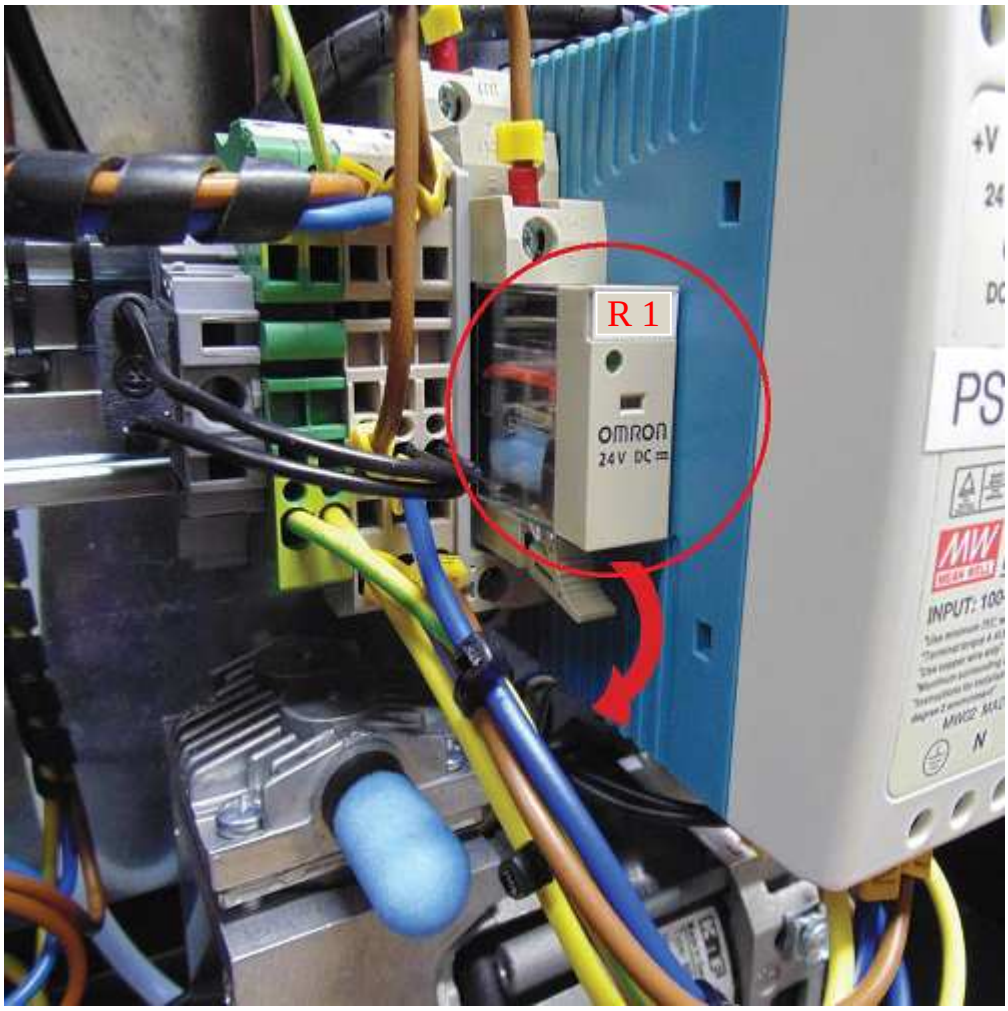
1500 hours service instructions continued...

Step 6
COMPRESSOR RELAY CHANGE



Release the relay holder at the bottom and remove the relay. Replace with new and push holder latch into place.

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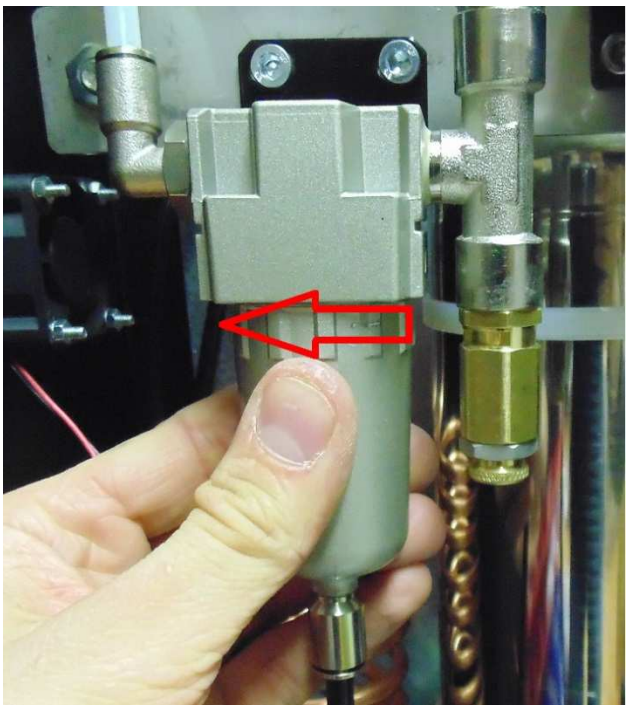
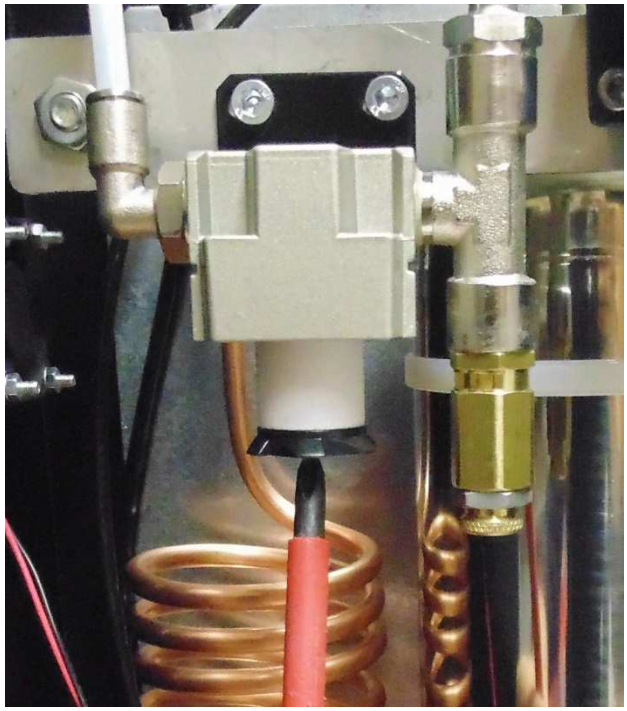
1500 hours service instructions continued…

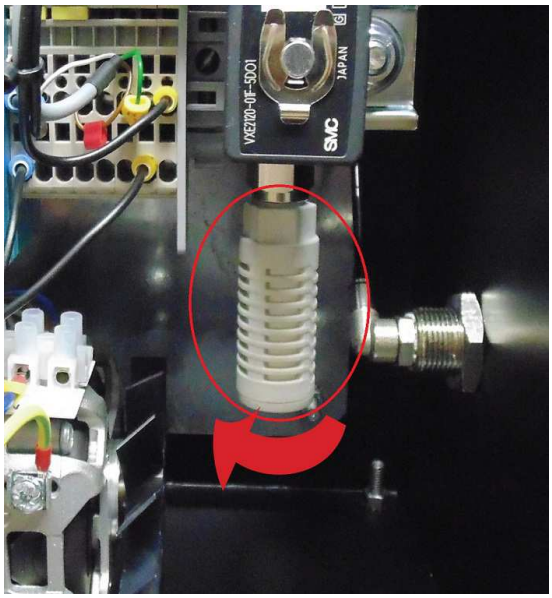
Step 7
AIR INLET FILTER CHANGE





Holding the filter bowl, unscrew by turning anti-clockwise and drop the filter bowl to the base to expose the element. Unscrew the element and discard, fit the new one in its place and refit the bowl turning clockwise until tight and secure.

Step 8
EXHAUST SILENCER CHANGE



Locate the exhaust silencer as shown and unscrew from the housing, discard and replace with the new one. Do not over-tighten, screw by hand only!

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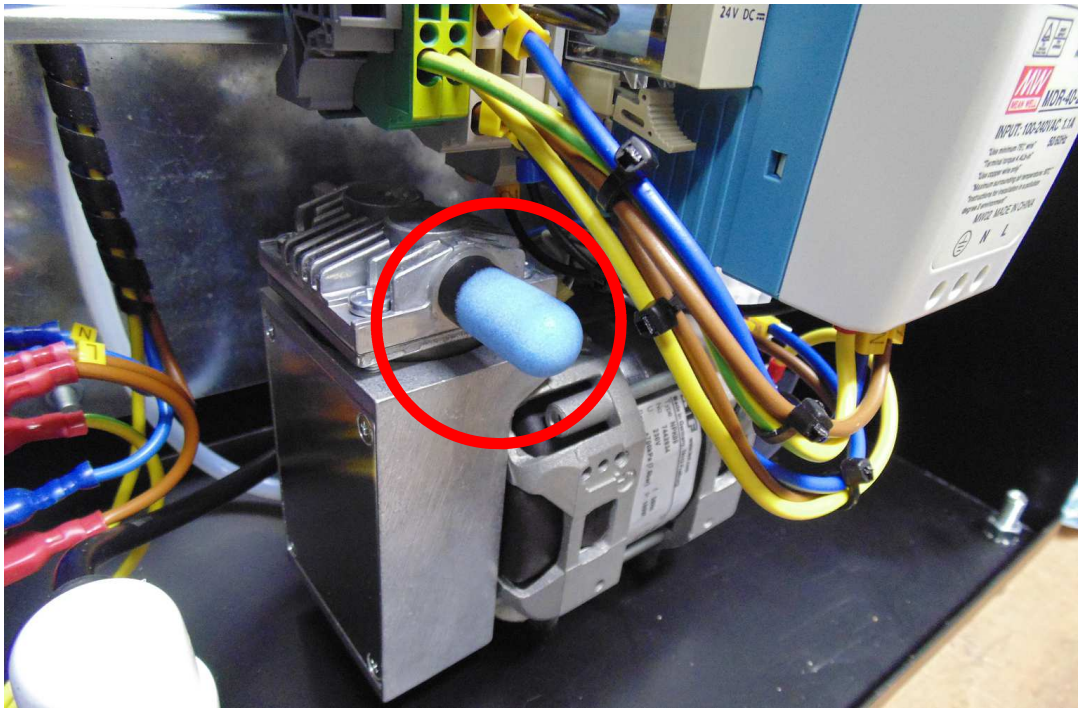
1500 hours service instructions continued…

Step 9
COMPRESSOR FILTER CHANGE



Locate the exhaust compressor filter as shown and unscrew from the housing, discard and replace with the new one. Do not over-tighten, screw by hand only!

When everything is secure and any foreign objects are removed from cabinet that may have been left there when servicing, close and screw the front panel.

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8.2 Re-start procedure

Step 1
With the door closed, re-connect the mains supply into the side of the enclosure.

Step 2
Ensuring the outlet ball valve is in the CLOSED position, switch the generator on.

Step 3
Turn the generator ON using the on/off switch located on the side of the enclosure. The front screen will display for a few seconds a start-up message, then the screen will show the STORAGE PRESSURE (P), HOURS RUN (Hr), COMPRESSOR PUMP TEMPERATURE (Tp), INTERNAL AMBIENT TEMPERATURE (Ta). After 90 seconds the compressor will start, leave the generator to run until the front screen pressure indicates 6.5 bar, in which time the compressor will stop automatically.

Step 4
With the outlet ball valve closed, open the outlet ball valve to exhaust the stored gas until the front display reads 1 bar, the generator will restart automatically. Close the ball valve again and allow the pressure build back up to 6.5 bar.
Repeat this process 5-7 times to ensure the correct purity of gas is reached.

END OF SERVICING

8.3 Cleaning

Clean the generator with a damp cloth only and avoid excessive moisture around any electrical sockets. If required you may use a mild detergent, however do not use abrasives or solvents as they may damage the warning labels on the equipment.

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8.4 Service records

Hours	Date	Completed By	Comments
1500			
3000			
4500			
6000			
7500			
9000			
10500			
12000			
13500			
15000			
16500			
18000			

Comments:

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9. Basic fault finding

FAULT	REMEDY
Generator not on	Check mains supply Voltage Check fuse
Low outlet pressure	Check Generator is on No restriction in outlet pipe Check digital display Check when service due
Gas Purity not in specification	Repeat start-up procedure page 17 Generator not on, or just restarted Check when service due
Error message: P ERR!!! 0.0Bar failed to charge	Connected equipment had or has a leak! 1. Find and isolate the leak 2. Turn off output valve 3. Restart the WineGEN by turning the power off and on, wait until pressure reaches 6.4 Bar.
Error message: PRESSURE SENSOR ERROR !!!	Pressure transducer faulty Contact your nearest Distributor
For other Faults please contact your nearest Distributor or Winegen International Ltd	

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10. Warranty

This warranty applies to Gas Generators and associated parts (the equipment) manufactured and supplied by Winegen International Ltd.

Use of the Gas generator without the recommended inlet air quality or genuine spare parts will expressly invalidate the warranty.

Should the equipment be defective as to materials or workmanship, Winegen International Ltd warrants that it will remedy such a defect. Where the equipment is a Gas Generator the warranty period will be 12 months from date of commissioning or 18 months from date of dispatch, whichever is earlier, provided such commissioning is carried out in the way described within the instruction manual. Should any defect occur during the warranty period and be notified in writing to Winegen or its authorised distributor within the said period, Winegen will, as its sole option, remedy such defect by repair or provision of a replacement part, provided that the equipment has been used strictly in accordance with the instructions provided with each item of the equipment, and has been stored, installed, commissioned, operated and maintained in accordance with such instruction and with good practice. Winegen shall not be under any liability whatsoever under the warranty if, before giving notification in writing to Winegen as aforesaid, the customer or any third party meddles, interferes, tampers with or carries out any work whatsoever (apart from normal maintenance as specified in the said instructions) in relation to the equipment or any part thereof. Winegen will hold no liability for any damage to third party equipment, processes, goods or materials caused by a defect in a Winegen gas generator.

Any accessories, parts and equipment supplied by Winegen but not manufactured by Winegen shall carry whatever warranty the manufacturer has given Winegen provided it is possible for Winegen to pass on such warranty to the customer.

To claim under the warranty, the goods must have been installed and continuously maintained in the manner specified in the operator's handbook.

Where the equipment is sold outside the UK mainland direct to the end user the warranty will cover parts only replacement, however if claiming a warranty repair the Generator must be returned to Winegen International for inspection / repair.

Any substitution of parts not manufactured, supplied or approved by Winegen will invalidate the warranty.

Winegen International Ltd has a continuous policy of product development and although the company reserves the right to change specifications, it attempts to keep customers informed of any alteration. This publication is for general information only and customers are requested to contact our sales department for detailed information and advice on a product's suitability for a specified application. All products are sold subject to the company's standard conditions of sale.

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