



NITROGEN GENERATOR
SERIES 3 N² USER GUIDE:

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1. General Information

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Series 3 Nitrogen Generator
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1.1 Document Introduction

This manual provides factory prescribed procedures for the installation, operation and maintenance of a nano-purification solutions Series 3 Nitrogen Generator. The procedures illustrated in this document are only to be performed by authorized personnel. For further information regarding the procedures outlined in this document contact nano-purification solutions before proceeding.

Read this document carefully before attempting to install or operate the generator . This document should be permanently available at the generator installation site and be kept in an easily accessible place alongside the product.

1.2 Support

For North American Support please contact:

nano-purification solutions

11330 Vanstory Drive
 Huntersville, NC 28078
 USA

Telephone: (704) 897-2182
 Fax: (704) 897-2183
 Internet: www.n-psi.com
 E-mail: support@n-psi.com



Manufacturer's Details

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 Gateshead, Tyne and Wear,
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Telephone: +44 (0) 191 497 7700
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 E-mail: info@n-psl.com

Annotations:



CAUTIONS: indicate any situation or operation that may result in potential damage to the product, injury to the user, or render the product unsafe.



NOTES: highlight important sections of information where particular care and attention should be paid.

2. General safety



For your own safety, when carrying out work on this product, all relevant national safety regulations must be complied with relating to pressurized and electrical systems.

Intended use of the Product

The generator is exclusively intended for the production of N₂ from compressed air, which is free from bulk water, oil and solid matter constituents.

The product should be sited within a building and protected (see section 7.1 Site selection). The generator must be operated only in accordance with the data on the rating label and in accordance with the contractual conditions. Any operations that do not comply with those stated on the product rating label will render the warranty void.



This product is only designed to operate at pressures of between 87 - 145 psig (6 - 10 barg). It is not suitable for pressures in excess of 145 psig (10 barg).

No modifications must be made to the product. Any modifications may reduce the operational safety of the product and invalidate the manufacturer's warranty, potentially resulting in damage to the product and serious personal injury.

Personnel

Only authorized, competent and trained personnel are permitted to work on the product. This user guide is intended solely for such personnel and is to be used only as a reference; it should not be used to replace conventional training.

Safe handling

Please ensure the relevant safe engineering practices and handling procedures are employed when handling, installing and operating the product. Ensure that the equipment is depressurized and electrically isolated, prior to carrying out any of the scheduled maintenance instructions specified within this user guide.



A suitable lifting aid must be used to minimize the risk of physical injury or damage to the product.



IMPORTANT: It is essential that the system into which the product is installed is fitted with a pressure limiting/relief device. This device should be between the compressor and the generator. The device must be set to prevent the maximum working pressure of 145 psig (10 barg) from being exceeded.

3. Description of Product

The n-psi nitrogen generator operates on the Pressure Swing Adsorption (PSA) principle to produce a continuous stream of nitrogen gas from clean dry compressed air.

Pairs of dual chamber extruded aluminium columns, filled with Carbon Molecular Sieve (CMS), are joined via an upper and lower manifold to produce a two bed system. Compressed air enters the bottom of the 'online' bed and flows up through the CMS. Oxygen is preferentially adsorbed by the CMS, allowing nitrogen to pass through.

After a pre-set time the control system automatically switches the bed to regenerative mode and oxygen is vented from the CMS. A small portion of the outlet nitrogen gas is expanded into the bed to accelerate the regeneration. At the same instant the second bed comes on-line and takes over the separation process.

The CMS beds alternate between separation and regeneration modes to ensure continuous and uninterrupted nitrogen production.

When a generator is specified with an internal dryer, each CMS column has a unique adsorbtion media tube (AMT) technology dryer fitted into the bottom of each column.

The unique AMT dryer does not require servicing and the life is aligned to the CMS material.

The internal AMT dryer reduces energy running costs by eliminating the additional external dryer purge (typically 20-25% of the dryer inlet air consumption) and the associated pressure loss across an external dryer. The compressed air supply is also reduced accordingly.

The oxygen concentration in the nitrogen stream is monitored continuously on models fitted with an oxygen analyser. If the outlet concentration exceeds the required production level, the nitrogen outlet is closed and the gas is vented to atmosphere. Normal operation will resume when the purity recovers.

3.1 Technical Specification

Parameter	Units	
Inlet Air Quality	ISO 8573.1:2010	Class 1.2.1 / Class 1.5.1 (when fitted with AMT integral dryer)
Minimum Inlet Pressure	psig / (Barg)	88 (6)
Maximum Inlet Pressure	psig / (Barg)	145 (10)
Rated Inlet Temperature	°F / (°C)	68-77 (20-25)
Minimum Inlet Temperature	°F / (°C)	34.7 (1.5)
Maximum Inlet Temperature	°F / (°C)	104 (40) - Subject to correction factor.
Supply Voltage	VAC (50/60Hz)	88-264 VAC
Input Current	Amps (VAC)	1.3 / 0.8 (110-230)
IP Rating		IP54 / NEMA 3
Noise	dB (A)	<80

Inlet pressure dewpoint required is ISO8573.1 Class 5 for water 45°F (+7°C)

3 stage inlet filtration is required , e.g. Water separator and 2 high efficiency coalescer filters (see system layout on page 11) to protect the generator from bulk water, particulate and oil aerosol.

4. Product Contents

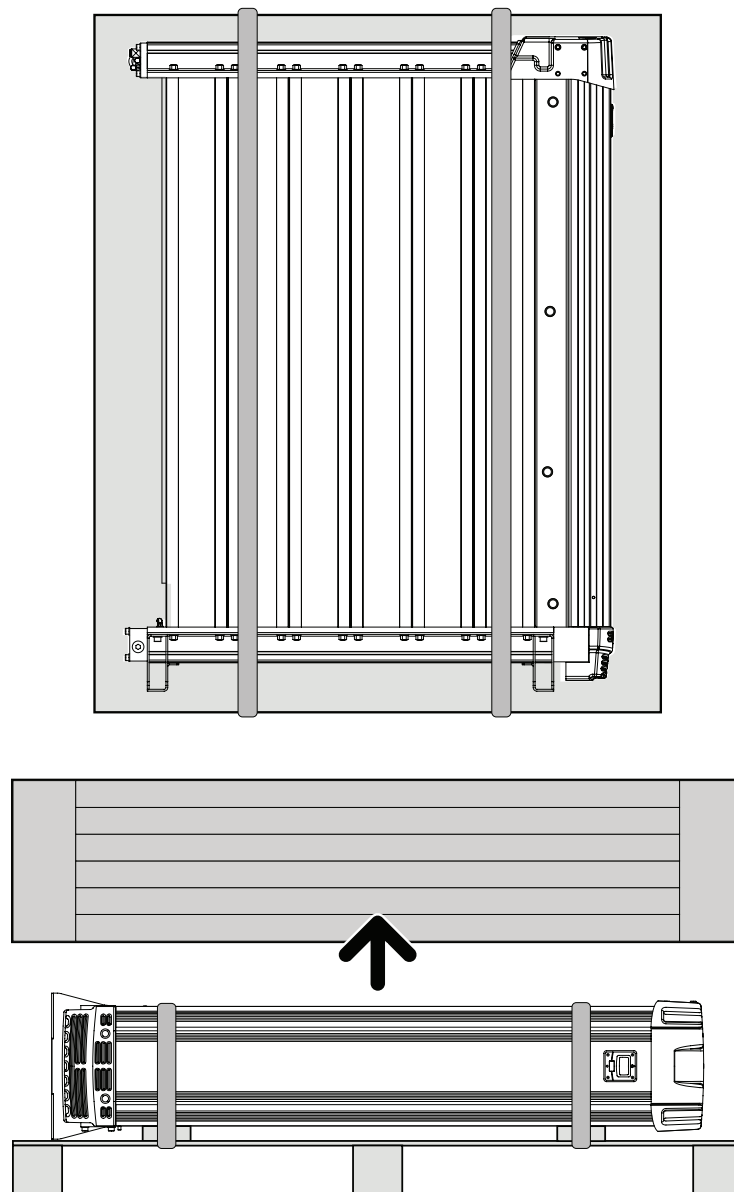
1. Series 3 N² Nitrogen Generator

2. Documentation

- 1 x User Guide
- 1 x Declaration of Conformity

3. Packaging

- 1 x Generator support base and box cover



- Care Should be taken and inspection undertaken during unpacking to ensure that the product is not damaged.
- Verify that all component parts have been supplied with the generator

4.1 Packaging

All products are securely packaged in a bespoke wooden packing box. The generator will be held in a horizontal position by wooden struts; using straps to secure the product to the box base. The box top cover can be removed by removing the 4 fixing screws and lifting off in one piece.



The support packing box permits longitudinal stacking; however the central section of the packing box should not be considered load bearing.

Damage to the packaging

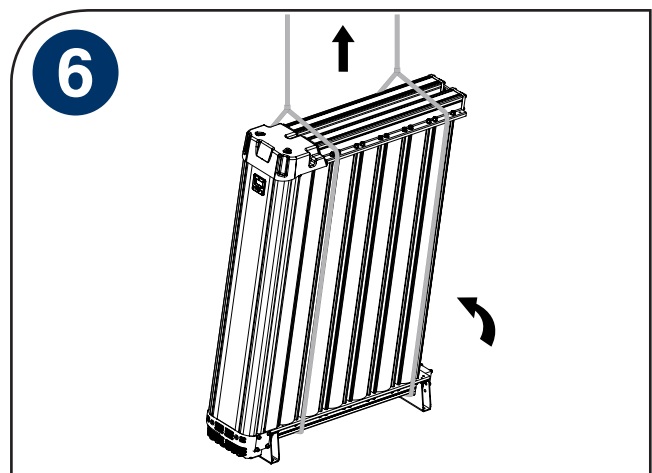
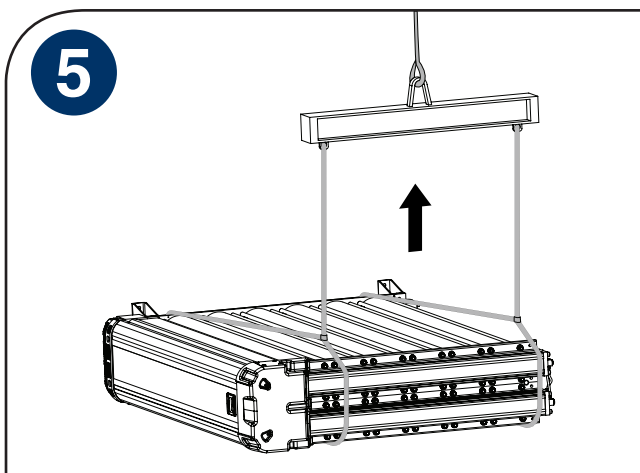
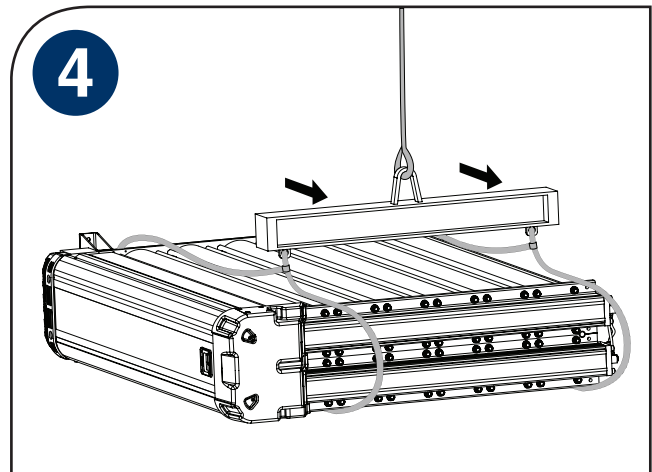
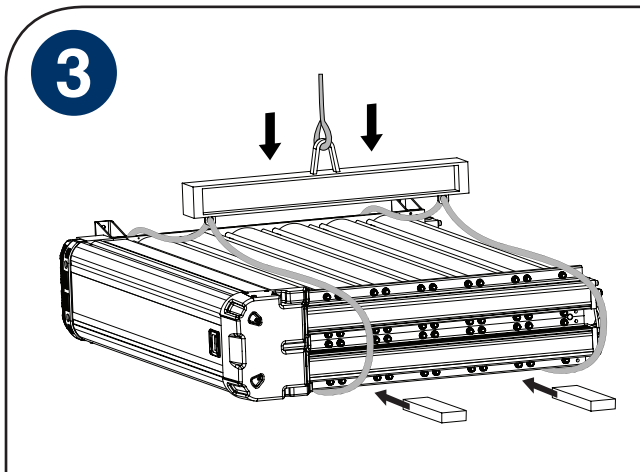
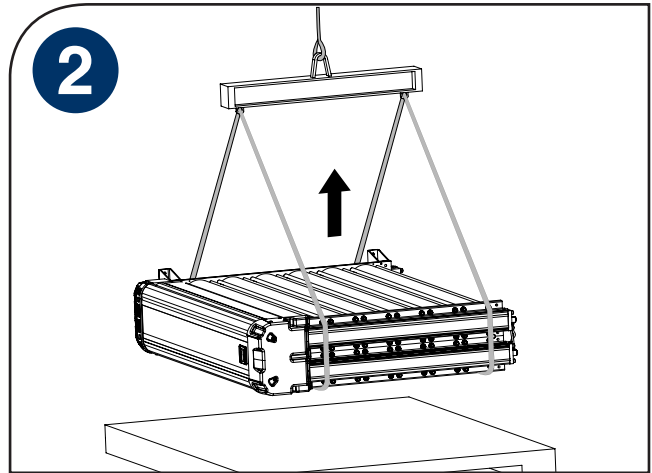
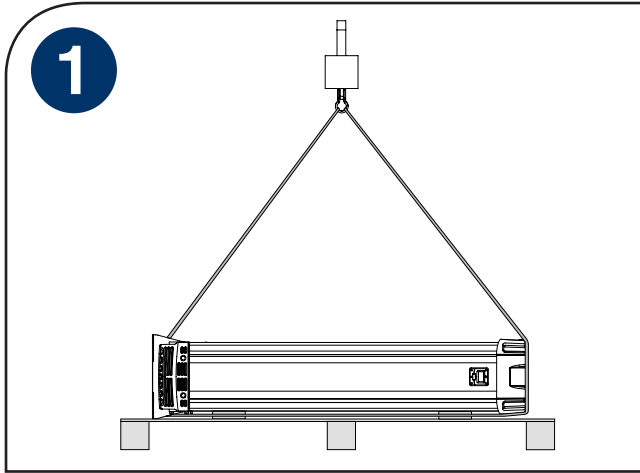
- Check immediately to establish whether damage has occurred to the external packaging and if the damage extends to the product inside.
- If there is damage to a product, contact the relevant supplier immediately.



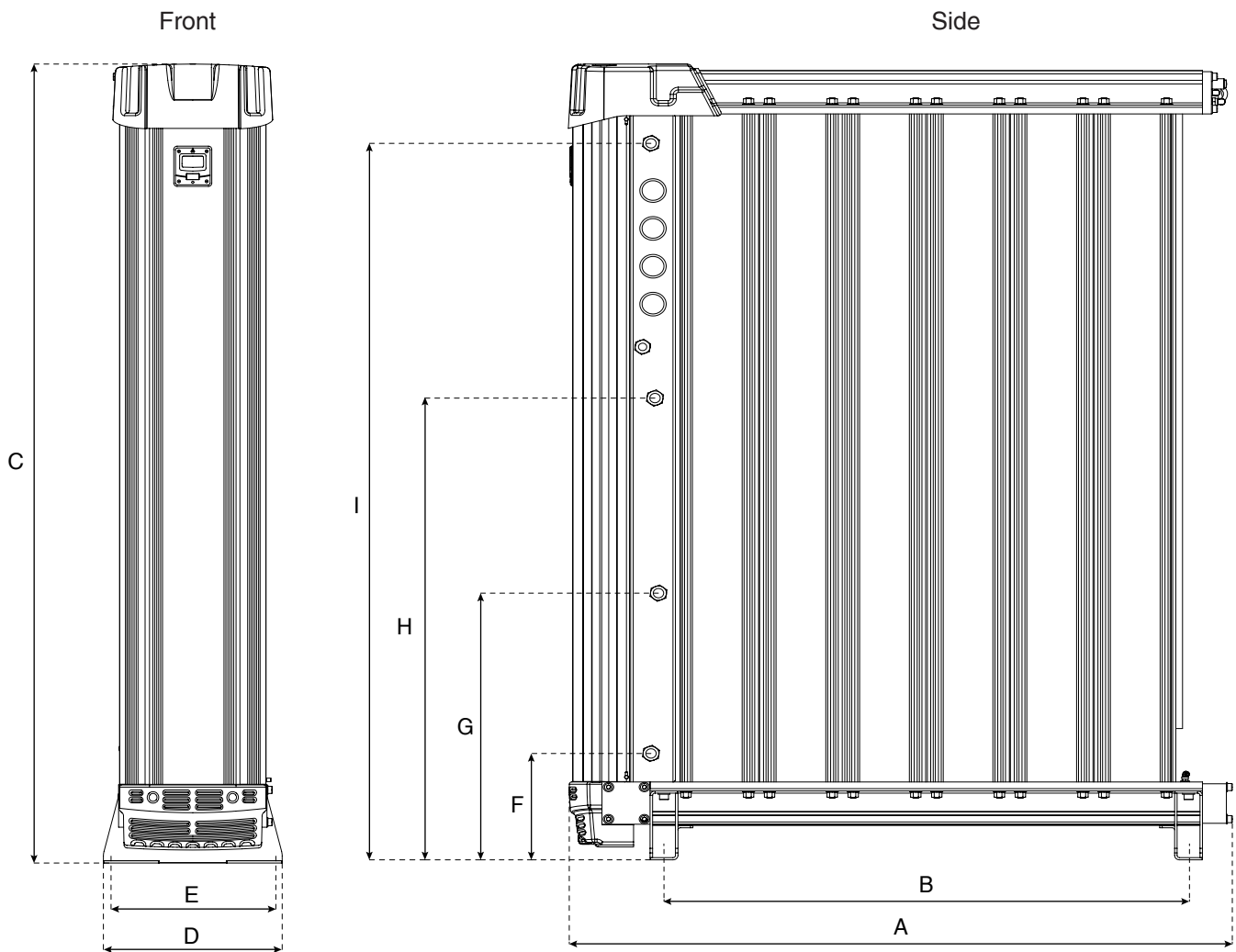
In no circumstances must a damaged product be used in operation. Using damaged products can lead to irreparable functional faults or cause serious physical harm.

4.2 Unpacking the Equipment

The generator is supplied in a wooden crate. It is recommended that the crate be moved into position using a forklift truck or pallet truck. Remove the generator from the wooden crate using an overhead crane. Use the following illustrations for correct guidance on safe handling and lifting techniques.



5. Product Dimensions

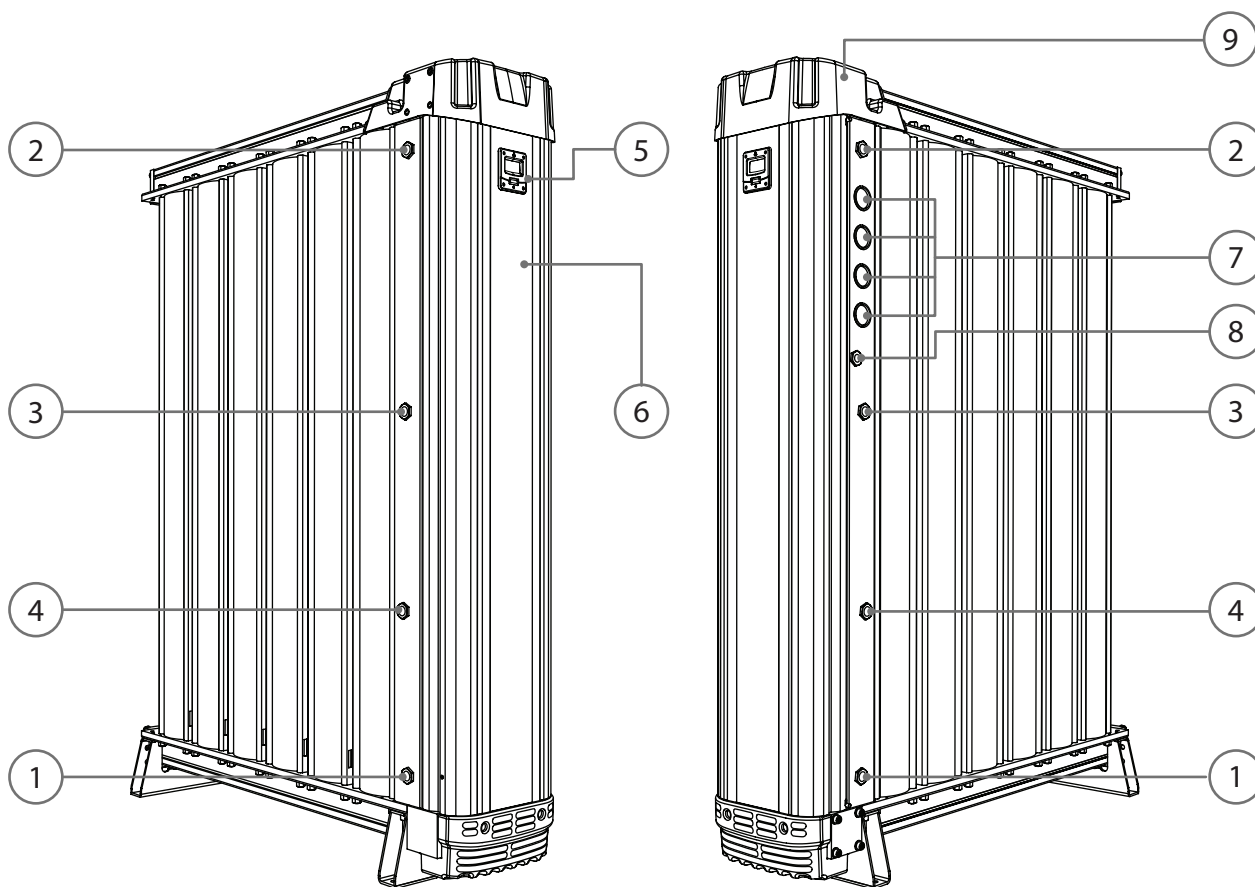






MODEL	CONNECTION SIZE	A ins [mm]	B ins [mm]	C ins [mm]	D ins [mm]	E ins [mm]	F mm [ins]	G ins [mm]	H ins [mm]	I ins [mm]	WEIGHT lbs [KG]
NNG-2110	1/2"	26 [650]	15 [382]	47 [1210]	15.7 [400]	14.2 [360]	10 [262]	-	-	40 [1009]	242 [110]
NNG-2130	1/2"	26 [650]	15 [382]	71 [1810]	15.7 [400]	14.2 [360]	10 [262]	22 [560]	36 [920]	64 [1625]	365 [116]
NNG-3110	1/2"	32 [820]	22 [550]	47 [1210]	15.7 [400]	14.2 [360]	10 [262]	-	-	40 [1009]	374 [170]
NNG-3130	1/2"	32 [820]	22 [550]	71 [1810]	15.7 [400]	14.2 [360]	10 [262]	22 [560]	36 [920]	64 [1625]	490 [222]
NNG-4130	1/2"	39 [990]	28 [718]	71 [1810]	15.7 [400]	14.2 [360]	10 [262]	22 [560]	36 [920]	64 [1625]	610 [277]
NNG-6130	1/2"	52 [1320]	41 [1054]	71 [1810]	15.7 [400]	14.2 [360]	10 [262]	22 [560]	36 [920]	64 [1625]	852 [387]
NNG-8130	1/2"	65 [1660]	55 [1390]	71 [1810]	15.7 [400]	14.2 [360]	10 [262]	22 [560]	36 [920]	64 [1625]	1100 [499]
NNG-10130	*1/2" or 1"	79 [2000]	68 [1726]	71 [1810]	15.7 [400]	14.2 [360]	10 [262]	22 [560]	36 [920]	64 [1625]	1350 [610]
NNG-12130	*1/2" or 1"	92 [2330]	80 [2026]	71 [1810]	15.7 [400]	14.2 [360]	10 [262]	22 [560]	36 [920]	64 [1625]	1600 [722]

* DEPENDING ON MODEL

6. Equipment Overview

All connection points are clearly marked on the generator and are represented in the diagram below. Ports 1-4 are factory set for customer requirement but can be changed internally.



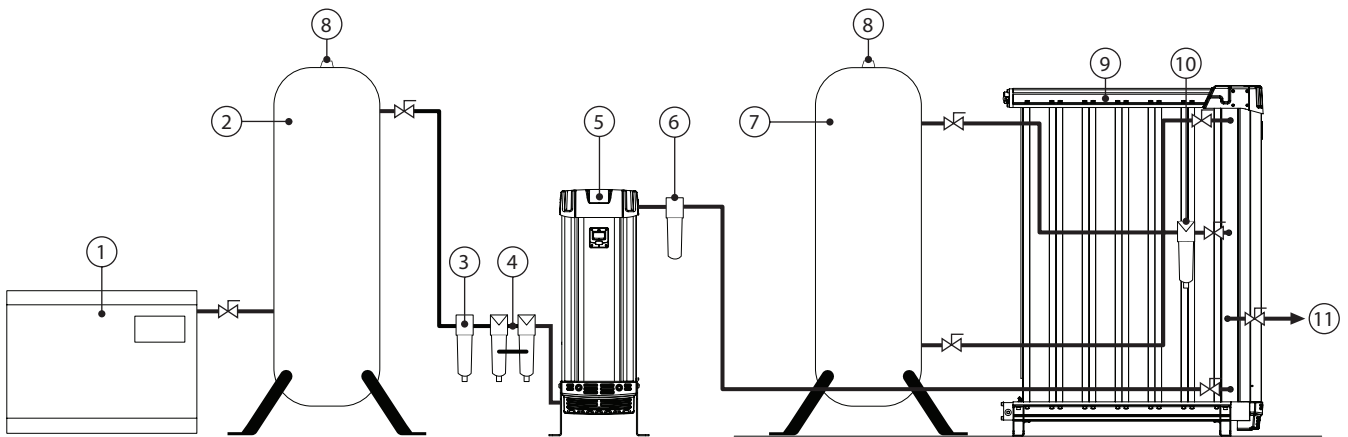
1	 Compressed Air Inlet	Air Inlet Port	2	 To Buffer Vessel	N ² Outlet Port to buffer	
3	 From Buffer Vessel	N ² Inlet Port from buffer	4	 Nitrogen Outlet	N ² Outlet Port	
5	Controller Display Unit				6	Front Shroud
7	<div style="display: flex; flex-direction: column; gap: 5px;"> <div>N₂ Outlet Pressure N² Outlet pressure gauge</div> <div>Column A Pressure Column A pressure gauge</div> <div>Column B Pressure Column B pressure gauge</div> <div>Air Inlet Pressure Air inlet pressure gauge</div> </div>				8	<div style="text-align: center;"> Sample External O² Analyser Sample Point (1/4" bspp) </div>
9	Top Cover					

7. System Layout



Only personnel trained, qualified and approved by nano-purification solutions should perform installation, commissioning, service and repair procedures.

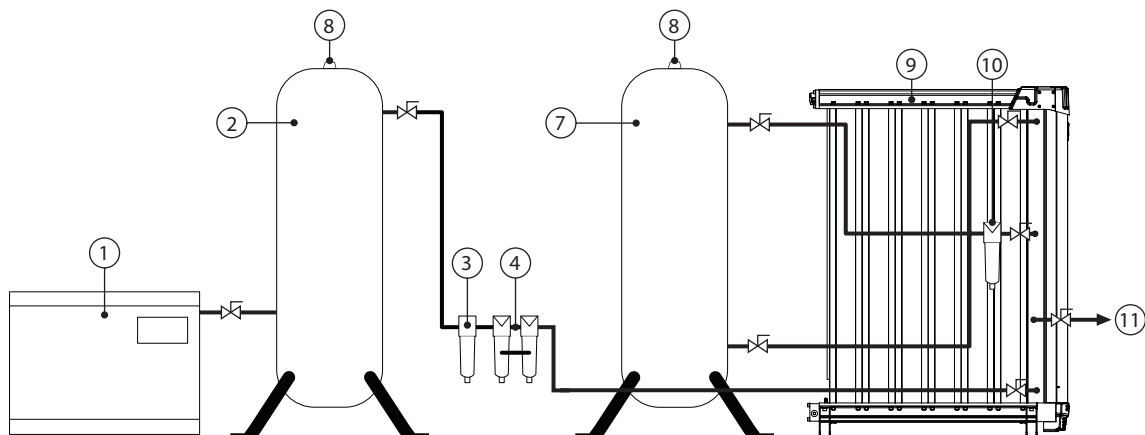
With External Desiccant Dryer



Ref	Description	Ref	Description
1	Compressor	7	Buffer Vessel
2	Wet Air Receiver	8	Pressure Relief Valve*
3	nano WS	9	N ² Generator (With Internal Dust Filtration)
4	nano M1, M01 grades	10	Dust Filter
5	Dryer	11	Nitrogen Outlet
6	Dust Filter (Required if Non n-psi dryer is used)		

*Note: It is the customers responsibility to fit pressure relief valves to the compressed air system.

With Integrated AMT Dryer



7.1 Site Location

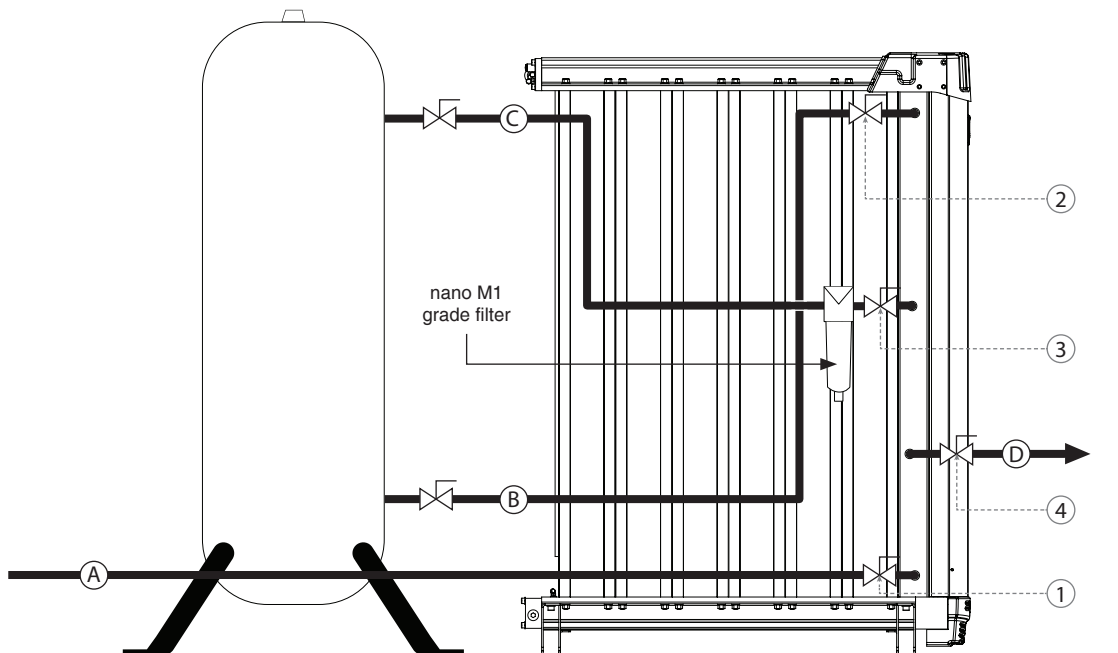
When selecting an installation site for the generator , ensure the following conditions are met:

- Installation site should be located indoors on a flat surface protected from the weather and other harmful conditions.
- The ambient temperature must not drop below 41°F (+5°C) or exceed 122°F (+50°C).
- The installation site should be level and able to support the weight of the product.
- Ensure sufficient space around the product, to allow access for operation and maintenance.
- Take into account the noise generated when in use when considering the final location.
- The generator must be mounted vertically as shown.





Note: Due to the nature of operation there is a possibility of oxygen enrichment surrounding the generator. Ensure the area surrounding the generator is adequately ventilated.

7.2 Mechanical Installation

Once the generator has been located into position, install the ball valves and the pipework ready for connection to the buffer vessel and compressed air supply.



The diameter of the pipes must be sufficient to allow unrestricted inlet air supply to the generator and nitrogen supply to the applications shown in the table below.

Connection			Pipe Work	
1	 Compressed Air Inlet	1" Ball Valve	A	1" NB
2	 To Buffer Vessel	1" Ball Valve	B	1" NB
3	 From Buffer Vessel	1/2" Ball Valve	C	1/2" NB
4	 Nitrogen Outlet	1/2" 3-Way Ball Valve	D	1/2" NB

Ensure that all piping materials are suitable for the application, clean and debris free. All outlet piping must be solid and non-porous to minimize the ingress of oxygen.

When routing the pipes ensure that they are adequately supported to prevent unnecessary strain which can lead to damage and leaks in the system.

The nitrogen buffer vessel must be rated to at least the maximum operating pressure of the generator and must be fitted with suitable valving pressure gauge and pressure relief valve.



It is recommended that the system be protected with suitably rated pressure relief valves upstream of the generator.

7.3 Electrical Installation

Mains Power Connection

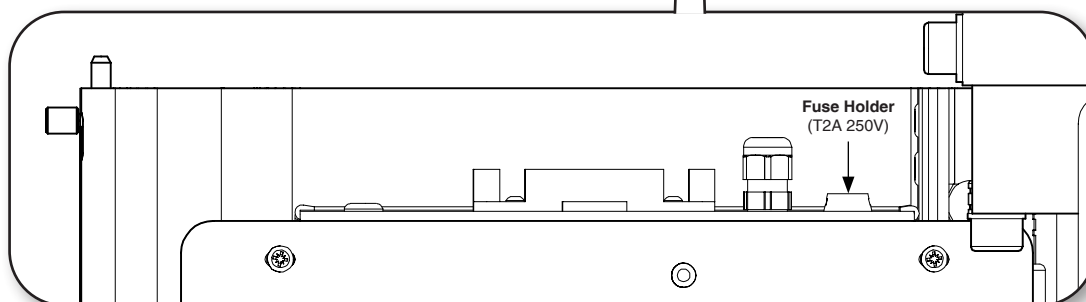
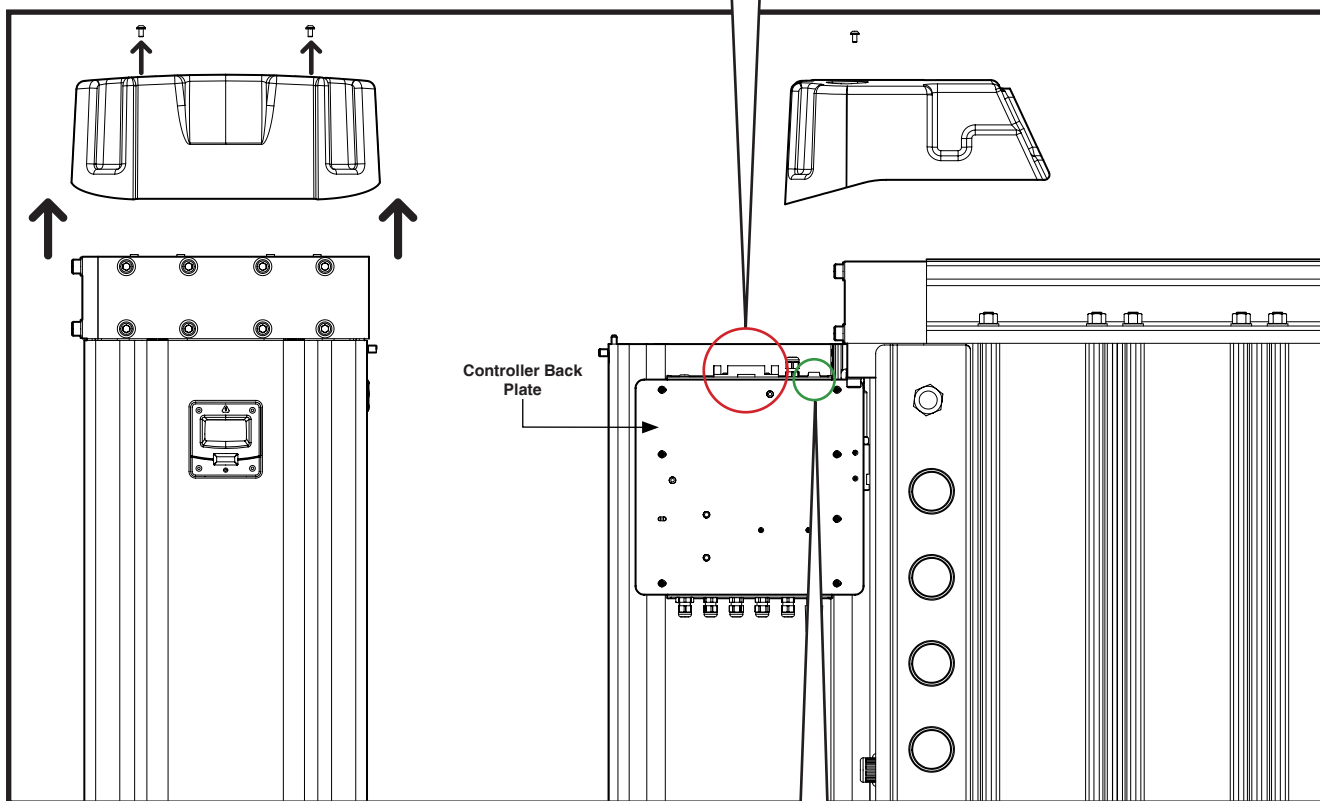
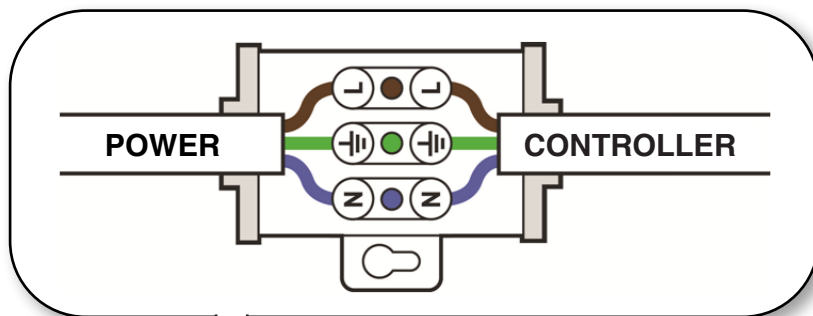
Supplied with 3 metres of cable:

If the cable needs to be replaced:

- Disconnect from mains supply.
- Unscrew the 4 x M5 cap head screws in order to remove the generator top cover.
- Slide 2 x door latch pins together to allow the front cover to swing open on the hinge.
- This will expose the controller back plate and power connection (as shown circled in red).

Electrical Power Requirements

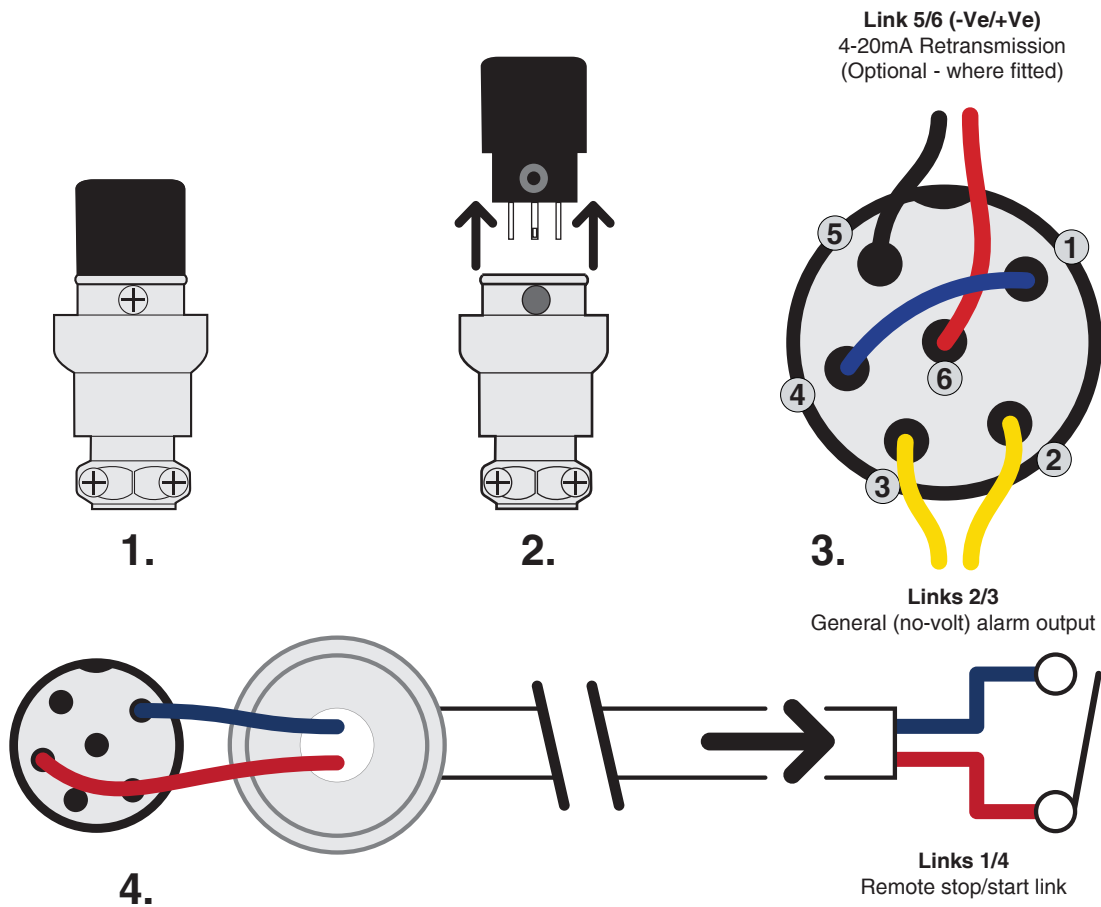
Supply: 88 - 264 VAC
47 - 63 Hz
Input Current: 1.3 / 0.8A
(115/230 VAC)



8. Generator Operation

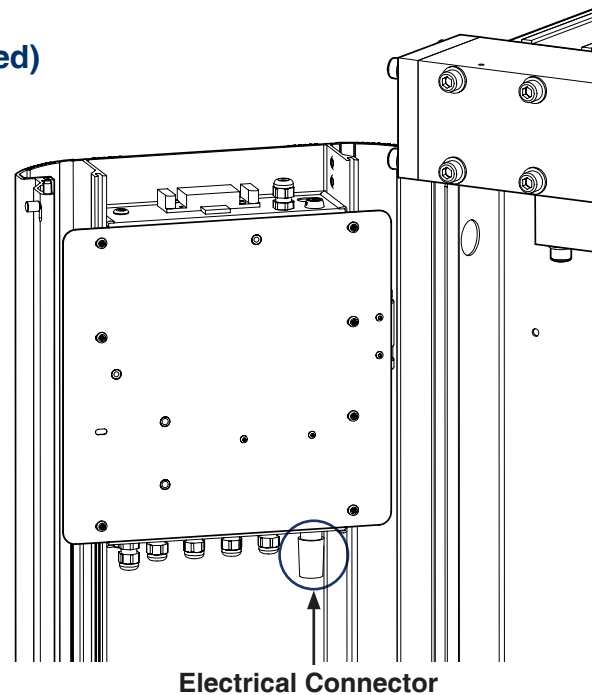
Locate the electrical connector on the underside of the controller in the shroud.

8.1 6 Pin Electrical Connector Configuration



Generator Remote Stop/Start Control (if required)

- To set up for remote control eco mode. Remove the link between pins 1 and 4 (3) in the electrical connector plug. A zero volt switching signal from the remote control needs to be connected between pins 1 and 4 (4).
- When the connection is made, the generator will operate normally. If the connection is broken, i.e. the generator has been remotely switched off, the generator will commence shut down procedure, stop cycling and go into standby mode, displaying "STANDBY" on the display once completed.
- Using remote stop / start ensures the correct shut-down sequence is implemented.



Under no circumstances should external voltage/current be applied to pins 1 and 4, damage to the controller will occur, negating the warranty.

General Alarm Output

- Pins 2 & 3 on the electrical connector provide a zero volt alarm output for customer control panel indication. These pins are connected to relay contacts within the controller which will close when the service or O2 purity (optional) / pressure alarm conditions arise.

Oxygen Purity 4-20mA Retransmission (where fitted)

Pins 5 and 6 in the electrical connector are dedicated to analogue retransmission of the O2 purity. Pin 5 -ve, Pin 6 +ve 4-20mA signal at 24VDC.

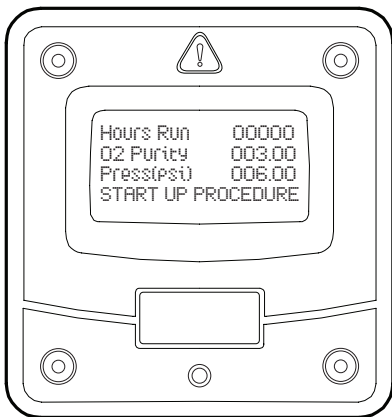


Under no circumstances should external voltage/current be applied to pins 5 and 6, damage to the controller will occur, negating the warranty.



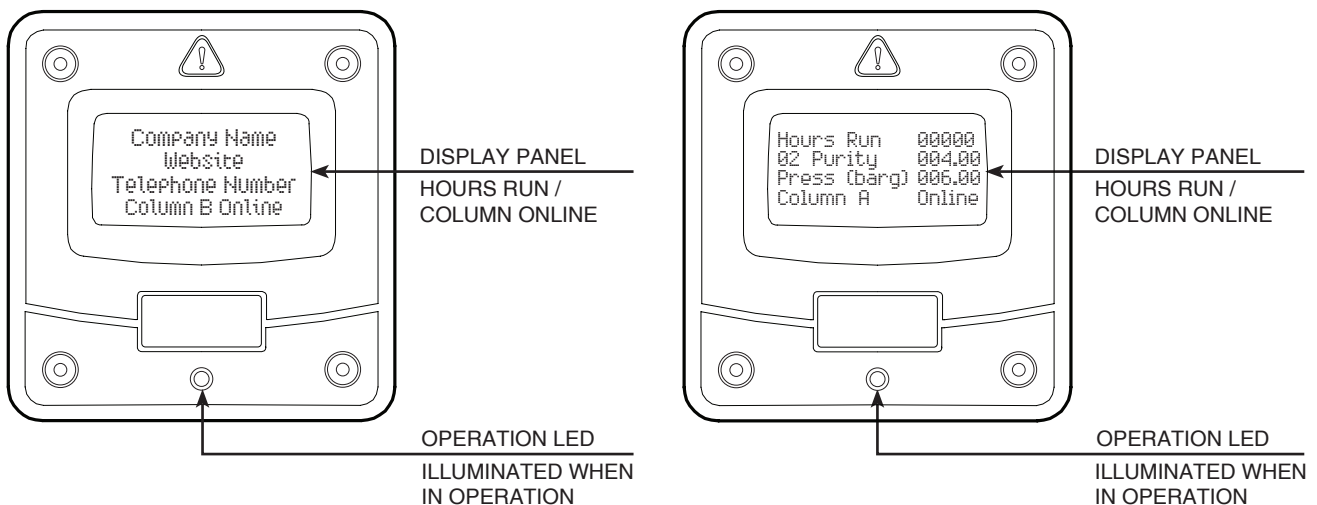
Care must be taken when assembling all connections in the plug to ensure all terminals remain completely insulated from each other.

8.2 Start-up Procedure



- Ensure the Inlet Air Quality (ISO 8573.1:2010) is Class 1.2.1 or Class 1.5.1 when fitted with AMT integral dryer and the operating pressure is between 87-145psig (6 -10barg)
- The inlet air temperature is between 34.7 – 104°F (1-40°C).
- Ensure all generator valves are closed prior to start up.
- Open the inlet valve
- Turn on power to the generator.
- When starting without any pressure in the system, partially open the outlet valve 2 (see page 13) near the top of the generator control panel, to allow the buffer vessel to fill up gradually. Once the buffer vessel is at operating pressure, open the buffer outlet valve fully.

Once the buffer vessel is at operating pressure, slowly open the generator outlet valve 4 (see page 13) to allow the outlet received to pressurize slowly, Once at pressure the system is ready to deliver and the outlet valve can now be opened.



During the first initial 5 cycles of operation, the outlet purity control valve (after the buffer tank) is automatically diverted from delivering an outlet flow, to flow to atmosphere, allowing conditioning of the generator to improve purity prior to going on-line.

Once the initial cycles have been completed, the system will start delivering N₂ to the outlet to the outlet receiver. The N₂ outlet flow rate is controlled within the system to prevent the generator overflowing excessively. It would however be advantageous to limit the flow from the generator, into the outlet receiver to gradually build up receiver pressure, until it is at operating pressure in order to improve system start-up purity.

If at any time during normal operation the purity degrades to below the set point, the outlet will again close and flow to atmosphere (clean up cycle) until the purity again achieves specification whereby normal outlet delivery will resume.

8.3 Shut Down Procedure

The generator can be shut down remotely (recommended) using remote wiring configuration see section 8,

When the generator is shut down remotely, the shut down procedure will commence. The current cycle will be completed, then both exhaust valves will open for 2 minutes to exhaust the CMS bed. After which the exhausts will be closed, in effect sealing the generator ready for start up.



Note: At this stage, pressure in the columns may increase slightly. This is due to the natural operating characteristics of the CMS.

8.4 Economy Mode

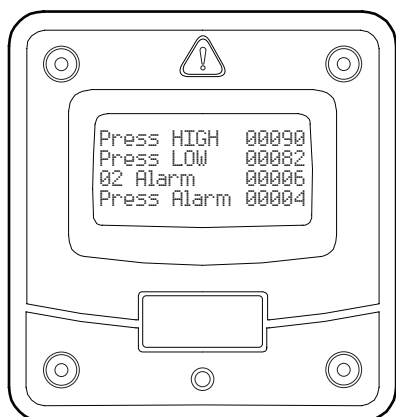
If the outlet pressure set-point is reached and maintained for a period of 5 minutes, the generator closes the outlet valves and continues to cycle for a further 5 minutes whilst continuously monitoring outlet pressure, after which, if pressure is still maintained high, the generator shuts down into economy mode.

If at any point during this time, if the outlet pressure drops below the set-point, normal cycling operation resumes.

Adjusting Set-points for Outlet Pressure and Purity Alarm

The set-points for Pressure and Purity alarm can be modified by the customer.

- To modify the settings, remove the 4 corner screws from the front bezel from the PLC, and taking care with the LED cables, carefully move to one side to gain access to the front buttons on the PLC.
- Hold down the A & B buttons for 8 seconds to gain access to the adjustments screen as shown below.



Pressure High:

When the generator commences energy saving mode.

Pressure Low:

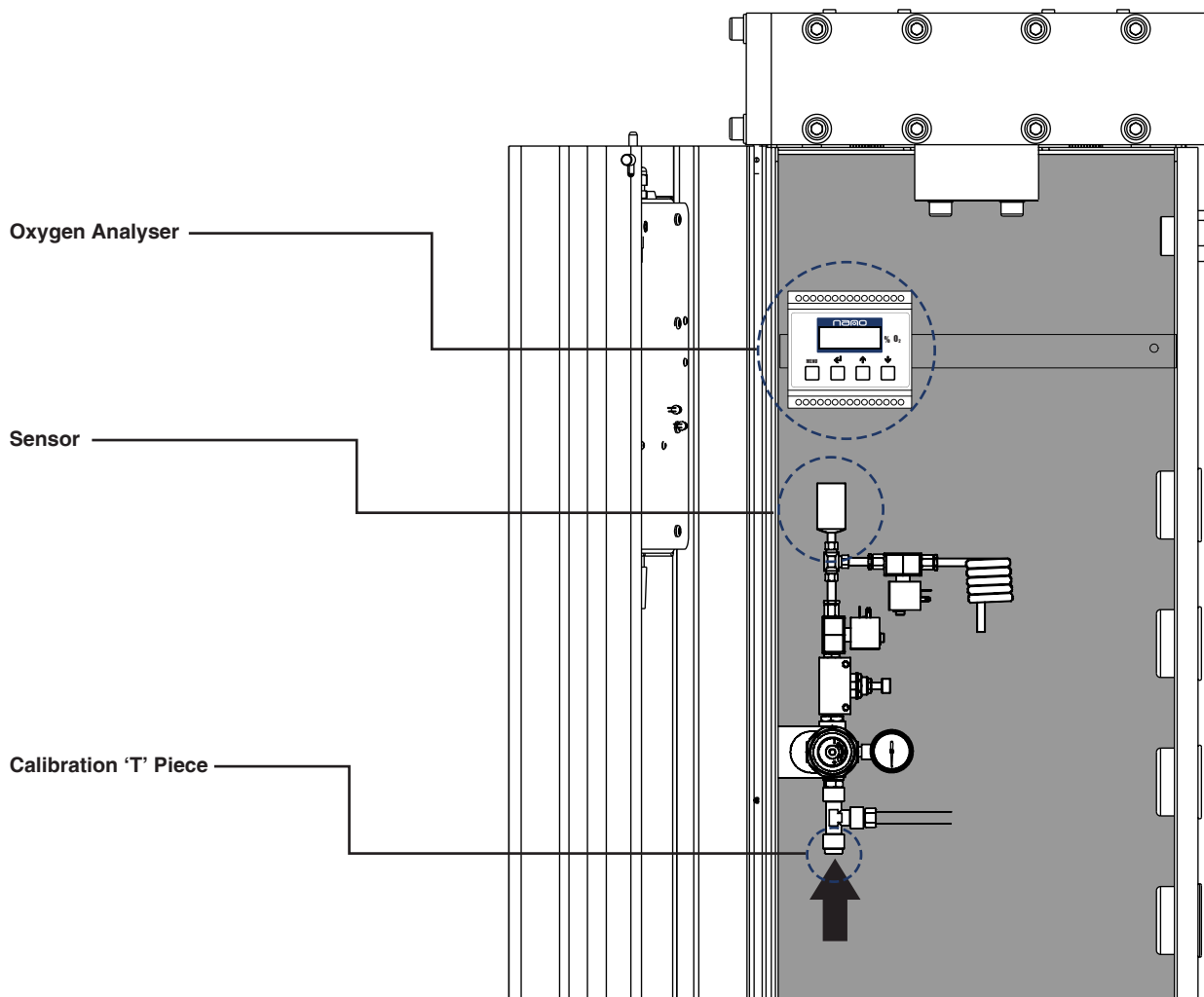
When the generator exits energy saving mode as shown below.

Press Alarm:

Pressure at which the No-Volt alarm is activated due to low pressure conditions. This is usually set lower than the Press Low set point to prevent unnecessary trigger of the alarm.

- The screen will remain visible for 1 minute before reverting back to operating mode.
- If the 1 minute access is insufficient, again hold down the A & B buttons for another 8 seconds.
- The O2 alarm digits will flash 1st, this can be changed to Press High or Low by using the - & + buttons.
- To modify the flashing setting, press the OK button and adjust by using the - & + buttons, again pressing OK to set.
- Once the settings have been adjusted, refit the front bezel, taking care not to damage the LED wiring.
- To exit the screen at any point press the ESC button.

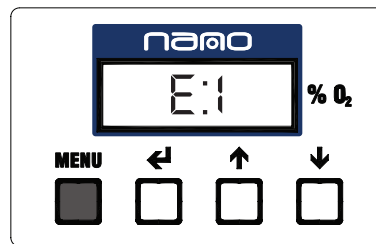
9. Oxygen Analyser Calibration




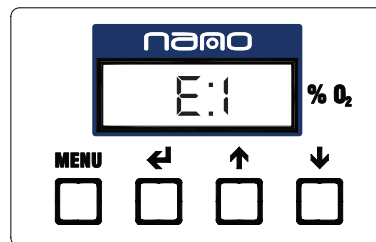
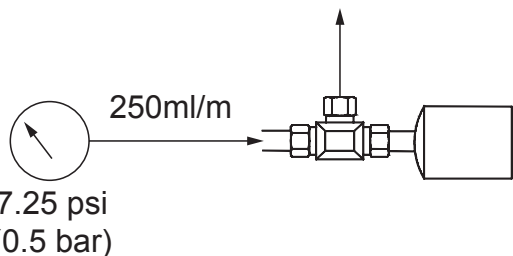
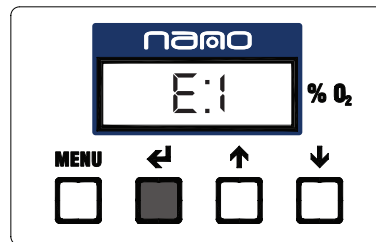
1. Remove the 2x M5 cap head screws and remove the top cover.
2. Disengage the Front Shroud latches and open the door to reveal N₂ process enclosure.
3. Identify O₂ sensor assembly & calibration 'T' piece (see Figure 1.)
4. Remove blank and introduce calibration gas at 7.25 psi (0.5 bar) and a flowrate of 250ml/m
5. Follow the Sensor Calibration Procedure (page 20).
6. Once calibrated, re-assemble the blank, close the front shroud and re-assemble the top cover.
7. Follow generator start up procedure (page 17)



9.1 Sensor Calibration Procedure

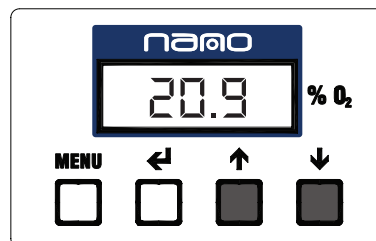
Press the Menu button (**MENU**)
 Display should read E:1




Press the Enter button ()

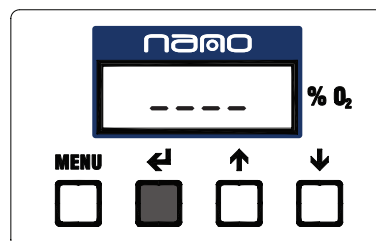


Using the Next (increment) button ()
 and the Previous (decrement) button (),
 set the display to that of the calibration
 gas level.

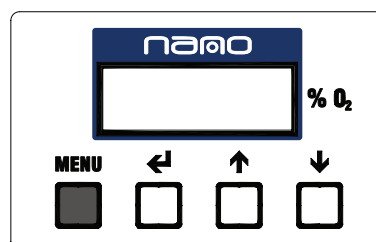


Press the Enter button (). This will
 "Span" the Sensor.

The display will read (- - - -) to confirm
 that the Sensor Span been successful



Press the Menu button (**MENU**) to close the
 Menu system. The Span value will be
 displayed on exit. As a percentage of the
 initial calibration value



10. Maintenance



Maintenance operations should only be carried out by authorized, competent and suitably trained personnel.

- Maintenance operations only to be conducted when the system has been shut down, fully depressurized and isolated completely from the compressed gas and electrical supply.
- Ensure the system is in a safe condition for maintenance to be carried out on.
- Dismantle and assemble with care, paying particular attention to the areas that become pressurized.
- Replace with new seals, all gaskets removed during maintenance operations.
- Do not modify or adjust the control settings.
- Only certified n-psi approved replacement parts to be used.
- Always check all connections / sealing faces for cleanliness and secure seating prior to assembly.
- Ensure all components are refitted to the product before operation.
- Gradually build up pressure in the generator and check for any leaks.
- Ensure the generator is left operating in a safe working condition after completion of maintenance.

10.1 Daily checks

Visual and functional check of the generator should be carried out daily.

- Check the generator for correct operation, any external damage and leaks.

If defects found, immediately depressurize and isolate product until defects are rectified.

- If the service required display appears on the screen or the alarm signal activates, the generator must be serviced.

Contact your distributor (or n-psi) and request a product service kit.

- Remove any loose dust or dirt from the product, clean with a damp cloth only, all surfaces that appear to have attracted unwanted contaminants.
- Ensure the generator is operating within the purity specification, parameters, pressure, temperature and flow rate.

10.2 Cleaning

Clean the equipment 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/degrade the warning labels on the equipment.

10.3 Service Schedule

Service Type	Recommended Service Intervals	
	Every 2 Years (or 12,000 hours)	Every 4 Years (or 24,000 hours)
A	✓	
B		✓
C	✓	

Service A: Intergrated filters, ICF valves and gasket seal replacement

Service B: Control valve replacement

Service C: O₂ sensor exchange (if fitted)



Required service kits are dependant on nitrogen generator model and purity. Please contact Nano Purification Solutions to ensure the correct service kit is supplied

10.4 Calibration

O₂ Sensor (where fitted)

O₂ sensors must be calibrated every 3 months

(See pages 19 & 20 for instructions)

11. Troubleshooting

Problem	Problem Caused	Solution
Poor N2 purity or product performance	<ol style="list-style-type: none"> 1. Insufficient inlet pressure 2. Electrical Fault 3. Moist or contaminated CMS 4. Too high air consumption 5. Excessive inlet air temperature 6. Insufficient purge air 7. Exhaust silencer blocked 	<ol style="list-style-type: none"> 1. Adjust inlet pressure settings. (min operating inlet pressure 87psig / 6barg). 2. Ensure the power is on and the generator display panel is illuminated; check the generator is cycling correctly. 3. Eliminate the cause of contamination. Check external inlet filtration (inc. Water separator) for failed auto-drains or condensate build up. Replace inlet AMT dryer cartridges (where fitted) & CMS – do not re-use 4. Ensure the performance of the generator matches the system and required N2 outlet delivery. 5. Check against technical specification. 6. Purge incorrectly adjusted. Consult service personnel to adjust settings (Factory pre-set). 7. Consult service personnel.
Failure of generator to cycle	<ol style="list-style-type: none"> 8. Controller not functioning correctly 9. Controller not illuminated 10. Insufficient inlet pressure 11. Failure to de-pressurize when cycling 	<ol style="list-style-type: none"> 8. Ensure the controller is powered; check the on screen column status to ensure it is powering the solenoid valves during normal cyclic operation. 9. Check power to unit & fuse: T2A 250V (located on page 14). 10. Inlet pressure = min 6 barg. If not adjust inlet pressure settings. 11. Solenoid valve not functioning correctly; if there is power to the coil, replace valve. A correctly working valve outputs an audible click when it energizes.
Constant depressurization	<ol style="list-style-type: none"> 13. Failure to initialize Generator 14. Erratic air flow from exhaust 	<ol style="list-style-type: none"> 13. Switch off and restart generator. Ensure generator is pressurized before powering it to allow generator to initialize before commencing operation. 14. Faulty or damaged valve; service required.

Reference to known misuse

- **Opening the inlet valve too quickly**

Valve should be opened slowly allowing the pressure to build up gradually.

- **Inlet/outlet head pipe**

Pipe diameter too small or pipe work unsupported.

Inlet pipe work from low point in system, allowing bulk water to collect and enter generator.

- **Electrical controller**

Incorrect fuse fitted or fuse blown. Check the plug and fuse located on top of the controller back plate inside the product front shroud.

- **Additional Items**

Use of non-authorized components.

Untrained / unauthorized maintenance / installation personnel used.

Increase in nitrogen consumption without relation to the flow capacity of the product.

Purging the product with cleaning agents that could damage the components or the CMS.

Covers removed or loose during operation.

Failure to carry out a service when indicated by the product.

Do not allow the generator to flow air unless powered up, switched on and cycling. Resulting effect could be bed contamination; requiring replacement AMT dryer cartridges (if fitted) and CMS.

12. Warranty

All products are supplied with a 5 year manufacturer's warranty from the date of purchase. The generator should be installed, operated and maintained in accordance with the manufacturer's guidelines. Only genuine service parts should be used and no modifications made. For further information please contact nano-purification solutions.

CMS is expected to operate for 10 years or more without issue when high purity air is supplied to it. The integral AMT dryers have a similar life expectancy. Provided the inlet air purity is maintained, the CMS and AMT dryers are warranted for 2 years. Care must be taken with air supplied from an oil lubricated compressor to keep its operating temperature low to minimize oil vapour. Where this is not possible an additional activated carbon adsorber must be used.

To claim under the warranty, the goods must have been installed and continually maintained in the manner specified in the User Guide. Our product support engineers are qualified and equipped to assist you in this respect. They are also available to make repairs that may become necessary in which event they will require an official order before carrying out the work. If such work is to be the subject of a warranty claim, the order should be endorsed for consideration under warranty.

13. Service Record

Installation Date:	
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Carried out by:	
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GENERATOR SERVICE RECORD			
PRODUCT CODE:		PRODUCT SERIAL NO.	
.....		
HOURS SHOWN	DATE	SERVICED BY (PRINT/SIGN)	NOTES

nano

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