

MIDIGAS

Nitrogen Gas Generators

The cost-effective, reliable and safe solution for small to medium nitrogen requirements.



Background

MIDIGAS nitrogen gas generators from Parker produce nitrogen gas from compressed air and offer a cost-effective, reliable and safe alternative to traditional nitrogen gas supplies such as cylinder or liquid options.

Nitrogen is used as a clean, dry, inert gas primarily for removing oxygen from products and/or processes.

MIDIGAS provides an on-demand, continuous source of nitrogen gas which can be used in a wide range of industries such as food, beverage, pharmaceutical, laboratory, chemical, heat treatment, electronics, transportation, oil and gas and laser cutting.



Contact Information

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Features and Benefits

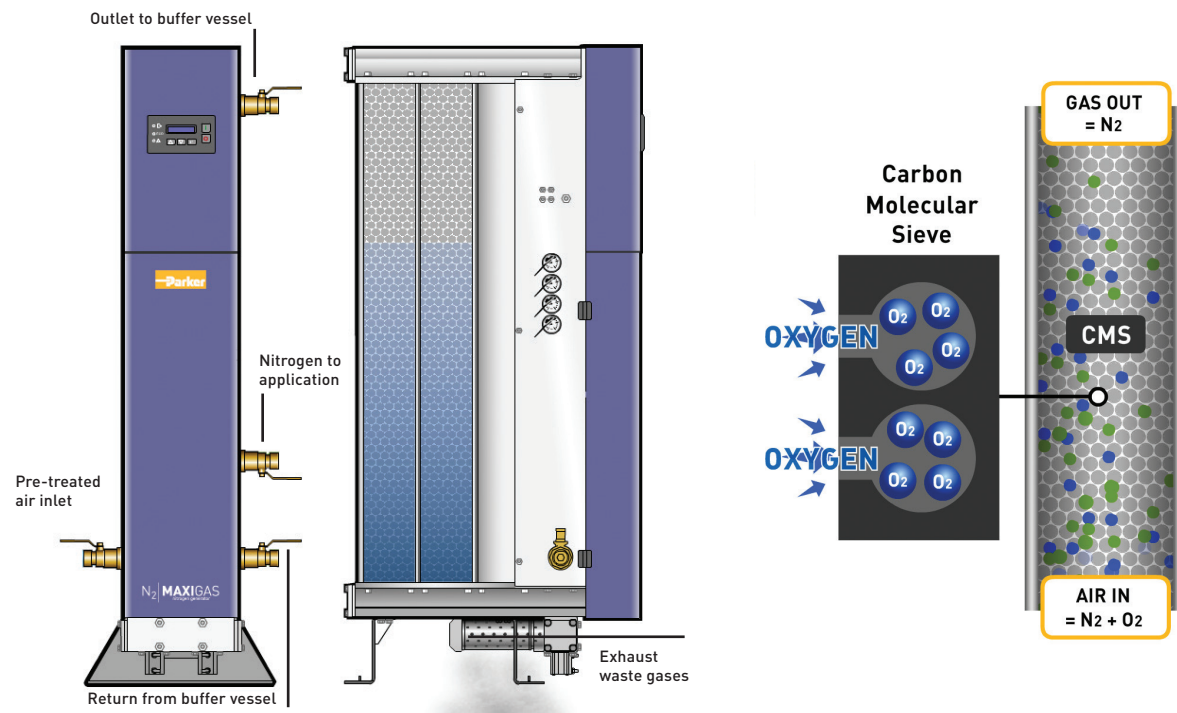
- **Can operate from a standard factory compressed air supply**
- **Delivers 5% down to 10 ppm oxygen content, without the need for any additional purification**
- **Available in 7 models offering varying flow rates and purities**
- **Automatic economy modes saves energy**
- **Built-in oxygen analyzer for continuous purity monitoring**
- **Alarm capabilities**
- **User friendly control interface**
- **Compact design**
- **Modular concept**
- **Complies with FDA requirements**
- **Up to 80% cost savings***
Typical capital pay-back is achievable within 12-24 months.
- **Energy savings**
Low air consumption provides greater energy efficiency.
- **Convenient and safe**
This easy to use system is simple to install, requires minimal maintenance and eliminates safety hazards associated with traditional gas supplies.
- **Space saving design**
The compact design means the system demands less floor space. Easily fits through doorways.
- **Flexible multi-bank option**
Offers higher flow and system backup.
- **Reduce carbon footprint**
The elimination of cylinder deliveries and transportation means carbon footprint can be reduced.

* Typical cost savings achieved in comparison to cylinder or liquid supply

ENGINEERING YOUR SUCCESS.

PSA nitrogen generators - How they work

MAXIGAS and MIDIGAS nitrogen generators comprise of high tensile aluminium columns, each containing twin chambers of Carbon Molecular Sieve, (CMS), a material which removes oxygen and trace gases from compressed air by molecular adsorption, allowing nitrogen to pass through as the product gas.



Clean dry compressed air from a Parker domnick hunter pre-treatment package enters the lower inlet manifold and into the operational set of chambers. As the air passes over the CMS, oxygen is preferentially adsorbed into the CMS pores leaving an outlet stream of nitrogen gas. This nitrogen gas passes into the top outlet manifold, then into a process buffer vessel and finally through the generator control system to regulate pressure, flow and monitor purity before being released to the application.

The CMS in the opposite set of chambers has previously adsorbed oxygen and by releasing the pressure

rapidly to atmosphere, oxygen is removed from the CMS and the cycle is ready to begin again.

This cycle operates on a continuous basis, ensuring a constant stream of nitrogen gas, 24/7 if required.

The modular aluminium design eliminates the need for complex valves and interconnecting piping as used in conventional designs.

CMS is not considered to be a regular replacement component and is expected to have a minimum service life of at least 10 years, subject to correct operation and maintenance.

What nitrogen quality do I need?

The majority of applications that use nitrogen gas do not need the 10ppm (99.999%) purity supplied by the traditional gas companies as bulk liquid or gas (cylinders). Providing customers with ultra-high purity nitrogen in all instances is an unnecessary waste of money and energy.

What do we mean by 'purity'?

By purity Parker domnick hunter means the maximum remaining oxygen content in the output nitrogen gas. Parker domnick hunter nitrogen technology when combined with Parker domnick hunter compressed air

pre-treatment, guarantees the nitrogen gas to be commercially sterile, oil free, dry and particulate free. (Within the specifications defined in the product information data contained in this brochure.)

The maximum remaining oxygen content required will vary with every application.

Maximum cost and energy savings = maximum oxygen level permissible



High Purity
10 ppm to 1000ppm
(99.999% to 99.9%)

Laser cutting
50ppm to 500ppm
Heat Treatment
10ppm to 1000ppm
Electronics Soldering
50ppm to 500ppm
Pharmaceutical
10ppm to 5000ppm



Mid Purity
0.1% to 1% (99.9% to 99%)

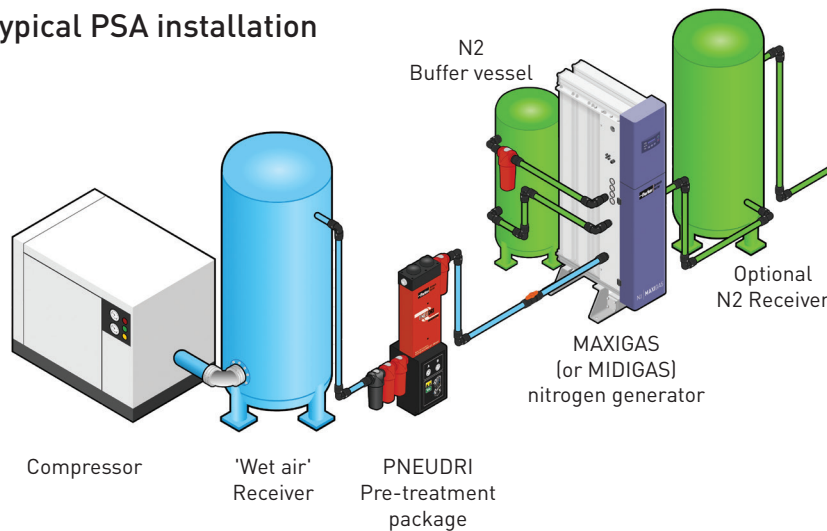
Food MAP 0.1% to 1%	Brazing 0.5%
Food processing 0.1% to 1%	Injection molding 0.5% to 1%
Beer dispense 0.5%	Wire annealing 0.5%
Wine blanketing 0.5%	Aluminium sparging 0.5%
Oil sparging 0.5%	



Low Purity
1% to 5% (99% to 95%)

Fire prevention 5%	Pigging 5%
Explosion prevention 2% to 5%	Chemical blanketing 1% to 5%
Pressure testing 5%	Autoclaves 5%
Gas seal blanketing 5%	Laser Sintering 2%
	Dry boxes 2%

Typical PSA installation



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Product Selection

Performance data is based on 7 bar g (100 psi g) air inlet pressure and 20°C - 25°C (66°F - 77°F) ambient temperature. Consult Parker for performance under other specific conditions.

Nitrogen flow rate m ³ /hr vs Purity (Oxygen Content)												
Model	Unit	10ppm	100ppm	250ppm	500ppm	0.1%	0.5%	1.0%	2.0%	3.0%	4.0%	5.0%
MIDIGAS2	m ³ /hr	0.55	1.2	1.5	1.9	2.4	3.4	4.3	5.8	7.2	8.4	9.4
	cfm	0.3	0.7	0.9	1.1	1.4	2.0	2.5	3.5	4.2	4.9	5.5
MIDIGAS4	m ³ /hr	1.2	2.4	3.2	3.9	4.7	6.9	8.5	11.6	14.3	16.7	18.8
	cfm	0.7	1.4	1.9	2.3	2.8	4.1	5.0	6.8	8.4	9.8	11.1
MIDIGAS6	m ³ /hr	1.5	3.2	4.2	5.3	6.5	9.5	11.5	15.2	18.7	21.7	24.5
	cfm	0.9	1.9	2.5	3.1	3.8	5.6	6.8	8.9	11.0	12.8	14.4
Outlet Pressure	bar g	5.6	5.4	5.9	5.7	5.6	5.7	6.0	6.0	5.8	5.7	5.6
	psi g	81	78	86	83	81	83	87	87	84	83	81

m³ reference standard = 20°C, 1013 millibar(a), 0% relative water vapor pressure.

Inlet Parameters

Inlet Air Quality	ISO 8573-1:2010 Class 2.2.2 (2.2.1 with high oil vapor content)
Inlet Air Pressure Range	6 - 13 bar g 87 - 217 psi g

Bulletin Midigas-A
10/2015

Electrical Parameters

Supply Voltage	115 / 230 ±10% V ac 50/60Hz
Power	80 W
Fuse	3.15A (Anti Surge (T), 250v, 5 x 20mm HBC, Breaking Capacity 1500A @ 250v, UL Listed)

Environmental Parameters

Ambient Temperature	5 - 50 °C 41 - 122 °F
Humidity	50% @ 40°C (80% MAX ≤ 31°C)
IP Rating	IP20 / NEMA 1
Altitude	<2000m (6562 ft)
Noise	< 80 dB (A)

Port Connections

Air Inlet	1/2" NPT
N ₂ Outlet to Buffer	1/2" NPT
N ₂ Inlet from Buffer	1/2" NPT
N ₂ Outlet	1/2" NPT

Weights and Dimensions

Model	Height (H)		Width (W)		Depth (D)		Weight	
	mm	in	mm	in	mm	in	kg	lb
MIDIGAS2	1034	41	450	18	471	19	98	216
MIDIGAS4	1034	41	450	18	640	26	145	320
MIDIGAS6	1034	41	450	18	809	33	196	432

Packed Weights and Dimensions

Model	Height (H)		Width (W)		Depth (D)		Weight	
	mm	in	mm	in	mm	in	kg	lb
MIDIGAS2	612	24	1490	59	950	38	174	383
MIDIGAS4	612	24	1490	59	950	38	221	487
MIDIGAS6	612	24	1490	59	950	38	272	597