

# MIDIGAS

## Nitrogen Gas Generators

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

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.

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.



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### Features:

- **Can operate from a standard factory compressed air supply**
- **Delivers 5% down to 10ppm oxygen content, without the need for any additional purification**
- **Available in 3 models offering varying flow rates and purities**
- **Automatic economy mode**
- **Built-in oxygen analyzer for continuous purity monitoring**
- **Digital and analog outputs for remote monitoring**
- **Alarm capabilities**
- **User friendly control interface**
- **Compact design**
- **Modular concept**

### Benefits:

- **Up to 90% cost savings\***  
Typical capital pay-back is achievable within 12-24 months
- **Energy savings**  
Low air consumption provides greater energy efficiency
- **Convenient and safe**  
The 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
- **Flexible modular option**  
The modular concept means the generators can be multi-banked if required
- **Reduced 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.

## Cost-effective, energy saving solution

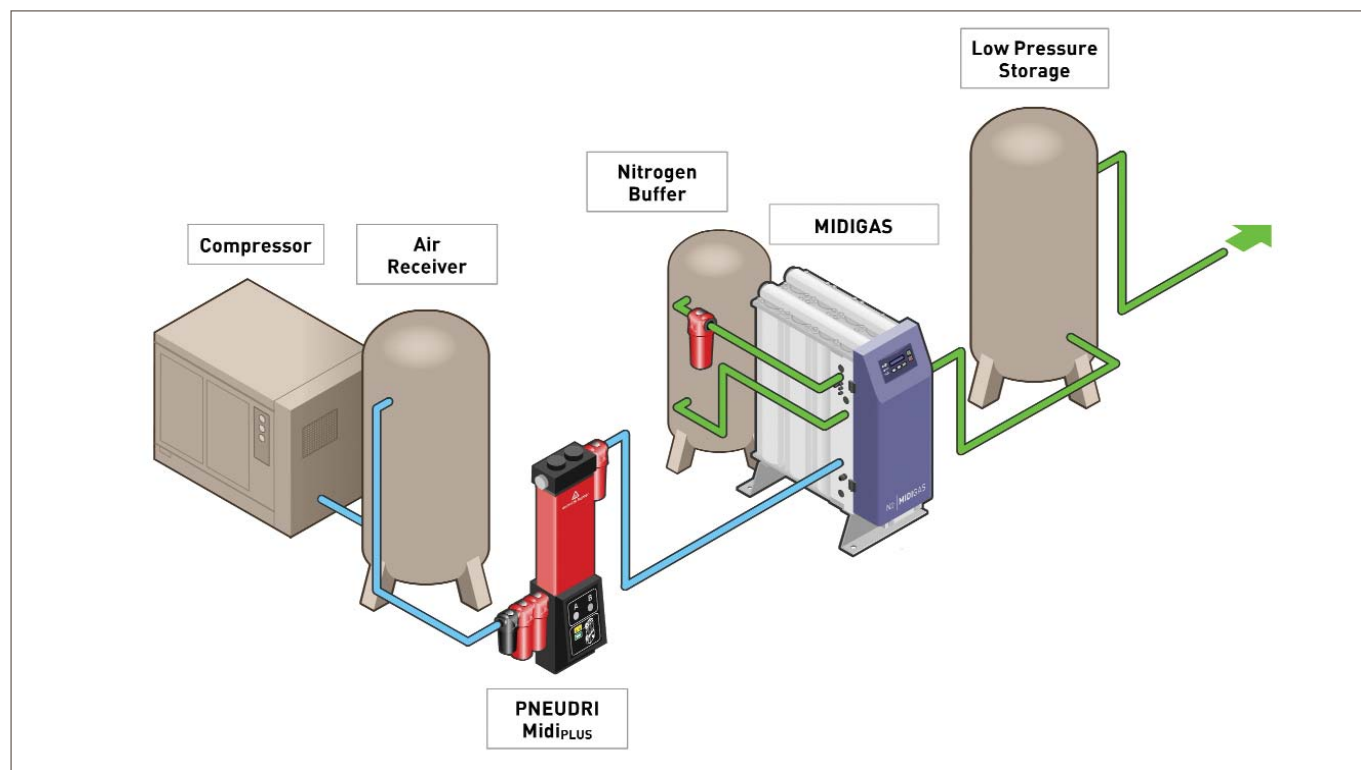
In addition to a short pay-back period, the cost-effective solution removes costs associated with traditional gas supplies including refills, order processing, tank rental and delivery charges and eliminates future gas company price increases.

While operating from a standard compressed air supply, the economy mode and on-demand function respectively offers control over nitrogen production, flow rates and purity levels and therefore limits costly wasted gas or liquid boil off to facilitate excellent energy savings.

The 24/7 operation also removes the risk of gas running out and thus the loss of production time.

## Typical MIDIGAS system

A typical MIDIGAS system comprises of the following configuration:



## Convenient and safe alternative

The system can be installed simply within a compressor house or production area with standard piping, eliminating the need for any special requirements.

In addition, low maintenance requirements ensure minimal production downtime.

Nitrogen is produced at low pressure, eliminating safety hazards usually associated with high pressure cylinder gas. Potential manual handling concerns are also removed.

## Pre-treatment solutions

Using high quality compressed air to supply MIDIGAS nitrogen generators will ensure long and trouble free service and optimum performance. To guarantee this, Parker offers a unique suite of pre-treatment solutions including PNEUDRI desiccant air dryers and OIL-X EVOLUTION coalescing filters which provide delivered air quality in accordance with the quality classification 3.2.2 from ISO 8573-1:2001, the international standard for compressed air quality.

## Guaranteed air quality

<b>Dewpoint:</b>	-40°F (-40°C) PDP
<b>Particulate:</b>	<0.1 micron
<b>Oil:</b>	<0.01 ppm



## The Parker Design Philosophy

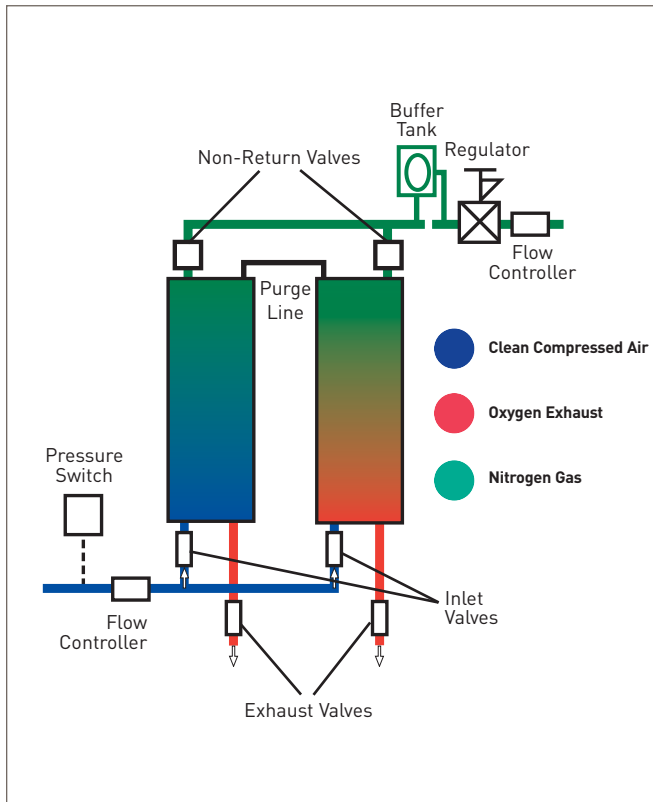
Parker has been supplying industry with high efficiency filtration and purification products since 1963. Our philosophy "Designed for Air Quality & Energy Efficiency" ensures products that not only provide the user with clean, high quality compressed air, but also with low lifetime costs and reduced CO<sub>2</sub> emissions.

## How it works

MIDIGAS operates via the pressure swing adsorption (PSA) principle to produce a continuous stream of nitrogen gas from compressed air. Pairs of extruded aluminum columns are filled with carbon molecular sieve (CMS). Pre-treated compressed air enters the bottom of the 'online' column and flows up through the CMS.

Oxygen and other trace gases are preferentially adsorbed by the CMS, allowing nitrogen to pass through. After a pre-set time the on-line column automatically switches to regenerative mode, venting contaminants from the CMS. Carbon molecular sieve differs from ordinary activated carbons as it has a much narrower range of pore

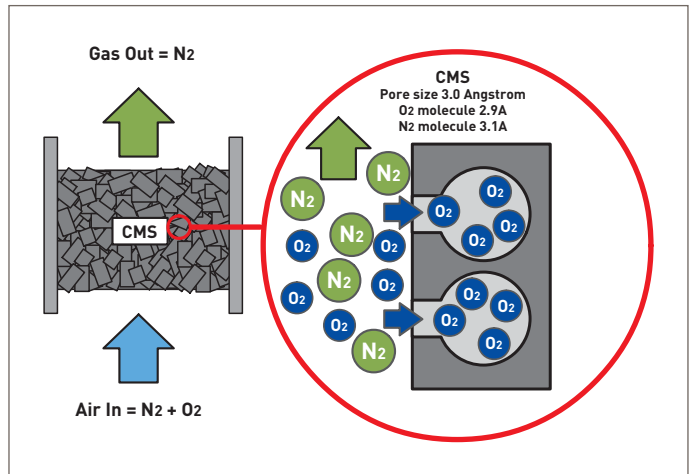
openings. This allows small molecules such as oxygen to penetrate the pores and separate from nitrogen molecules which are too large to enter the CMS. The larger nitrogen molecules by-pass the CMS and emerge as the product gas.



MIDIGAS Nitrogen Generator Schematic



Carbon Molecular Sieve



CMS Structure



Units can be multi-banked. MIDIGAS2 models

## Flexible modular option

The modular concept offers greater flexibility to traditional twin tower PSA generators, as the MIDIGAS generators can be configured to suit installations as and when the nitrogen demand increases.

Additional modules can provide extra capacity on standby or service backup for peace of mind.

The compact design also means the units can fit through standard doorways.

## Product Selection

Performance data is based on 100 psi g (6.9 bar g) air inlet pressure and 66° - 77°F (20° - 25°C) ambient temperature. Consult Parker for performance under other specific conditions.

Oxygen Content												
Model	Unit	10ppm	100ppm	250ppm	500ppm	0.1%	0.5%	1.0%	2.0%	3.0%	4.0%	5.0%
MIDIGAS2	cfh	19.4	42.4	53	67.1	84.8	120.1	151.9	204.8	254.3	296.6	332.0
	m <sup>3</sup> /hr	.55	1.2	1.5	1.9	2.4	3.4	4.3	5.8	7.2	8.4	9.4
MIDIGAS4	cfh	42.4	84.8	113	137.7	166	243.7	300.2	409.7	505	589.8	663.9
	m <sup>3</sup> /hr	1.2	2.4	3.2	3.9	4.7	6.9	8.5	11.6	14.3	16.7	18.8
MIDIGAS6	cfh	53	113	148.3	187.2	229.5	335.5	406.1	536.8	660.4	766.3	865.2
	m <sup>3</sup> /hr	1.5	3.2	4.2	5.3	6.5	9.5	11.5	15.2	18.7	21.7	24.5

## Technical Data

Ambient temperature range:	41 - 122°F (5 - 50°C)
Nitrogen outlet pressure:	up to 160 psi g (11 bar g)
Min. air inlet pressure:	87 to 189 psi g(6 to 13 bar g)
Inlet air quality:	Dewpoint: -40°F (-40°C)
	Particulate: <0.1 micron
	Oil: <0.01 ppm
Electrical supply:	115V/1ph/60Hz or 230V/1ph/50Hz
Inlet/outlet connections:	1/2" NPT

## Weights and Dimensions

Model	Height		Width		Depth		Weight	
	ins	mm	ins	mm	ins	mm	lbs	kg
MIDIGAS2	41.36	1034	18	450	18.84	471	216.1	98
MIDIGAS4	41.36	1034	18	450	25.6	640	319.7	145
MIDIGAS6	41.36	1034	18	450	32.36	809	432.1	196

## MAXIGAS

Also available MAXIGAS nitrogen generators for medium to large applications

Using the same PSA technology, the MAXIGAS range is a compact option suitable for applications requiring medium to large flow rates and is available in 7 models.



MAXIGAS120 model