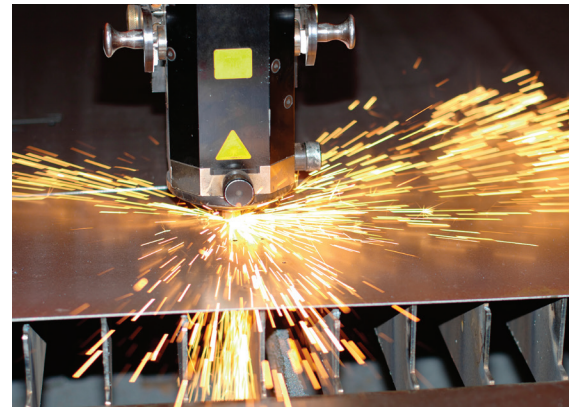


MAXIGAS

Nitrogen Gas Generators

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



Background

MAXIGAS 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.

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



Contact Information

Parker Hannifin Corporation
**Industrial Gas Filtration
and Generation Division**
4087 Walden Avenue
Lancaster, NY 14086
parker.com/igfg

phone 716 686 6400
800 343 4048

Features and benefits

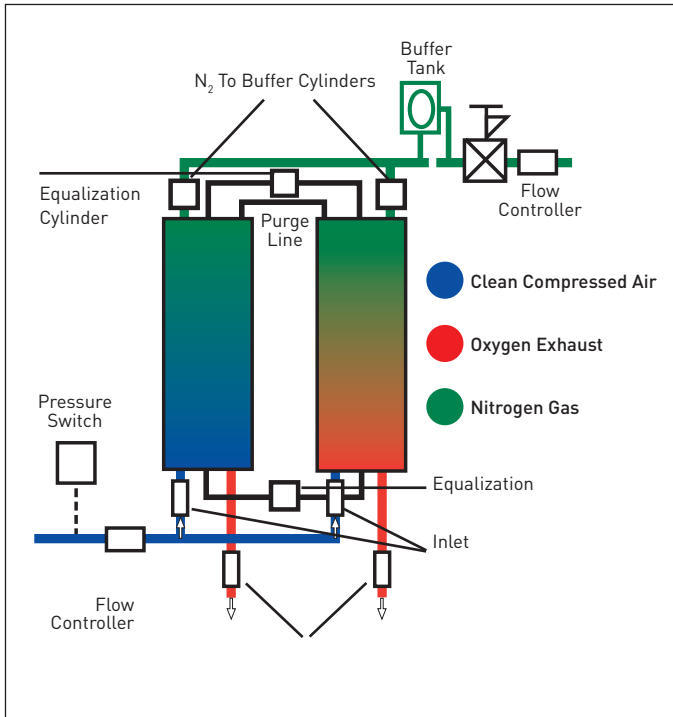
- Can operate from a standard factory compressed air supply
- Delivers 5% down to 10 ppm oxygen content, without the need for any additional purification
- Available in 7 models offering varying flow rates and purities
- Automatic economy mode
- Built-in oxygen analyzer for continuous purity monitoring
- Digital and analog outputs for remote monitoring
- Alarm capabilities
- User friendly control interface
- Compact design
- Modular concept
- **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** - 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.
- **Flexible multi-bank option** - The modular concept means the generator can be multi-banked if required.
- **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

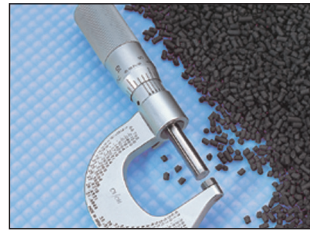
How it works

MAXIGAS 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

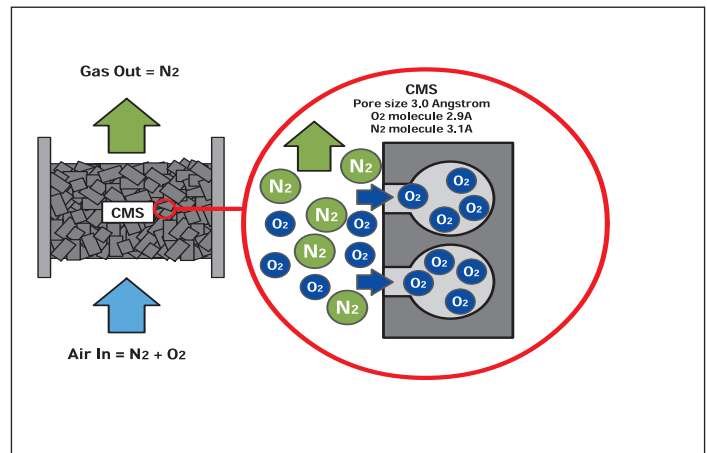
column automatically switches to regenerative mode, venting contaminants from the CMS. Carbon molecular sieve differs from ordinary activated carbons as it has a much narrower range of pore openings. This allows small molecules such as oxygen to penetrate the pores and separate from nitrogen molecules which are too large to enter the CMS. The larger nitrogen molecules by-pass the CMS and emerge as the product gas.



MAXIGAS Nitrogen Generator Schematic



Carbon Molecular Sieve



CMS Structure



Units can be multi-banked. MAXIGAS120 models.

Flexible multi-bank option

The modular concept offers greater flexibility to traditional twin tower PSA generators, as the MAXIGAS generators can be multi-banked and configured to suit higher flowrate applications, or can be added to installations when the nitrogen demand increases.

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

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

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

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

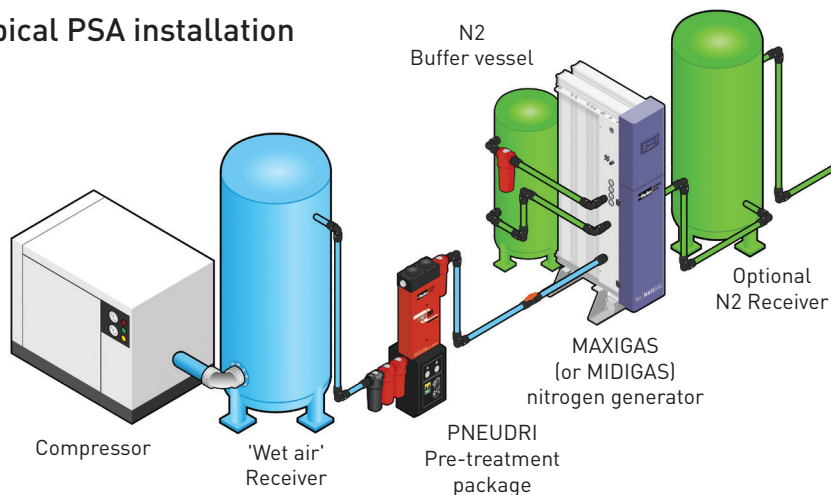
Mid Purity 0.1% to 1% (99.9% to 99%)

- | | |
|--------------------------------------|--|
| 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% |

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 | 50ppm | 100ppm | 250ppm | 500ppm | 0.1% | 0.5% | 1.0% | 2.0% | 3.0% | 4.0% | 5.0% |
| MAXIGAS104 | m ³ /hr | 2 | 3.8 | 5.5 | 7.1 | 8.6 | 9 | 14.1 | 17.8 | 22 | 25.8 | 29 | 32.2 |
| | cfm | 1.2 | 2.2 | 3.2 | 4.2 | 5 | 5.3 | 8.3 | 10.5 | 12.9 | 15.2 | 17.1 | 19.0 |
| MAXIGAS106 | m ³ /hr | 3 | 5.7 | 8.3 | 10.7 | 13 | 13.4 | 21.2 | 26.6 | 32.8 | 38.7 | 43.5 | 48.3 |
| | cfm | 1.8 | 3.3 | 4.9 | 6.3 | 7.6 | 7.9 | 12.5 | 15.7 | 19.3 | 22.8 | 25.6 | 28.4 |
| MAXIGAS108 | m ³ /hr | 4 | 7.6 | 11 | 14.3 | 17.3 | 18 | 28.3 | 35.5 | 43.8 | 51.6 | 58 | 64.4 |
| | cfm | 2.3 | 4.5 | 6.4 | 8.4 | 10.2 | 10.6 | 16.7 | 20.9 | 25.8 | 30.4 | 34.1 | 37.9 |
| MAXIGAS110 | m ³ /hr | 5 | 9.5 | 13.8 | 17.8 | 21.6 | 22.4 | 35.3 | 44.4 | 54.7 | 64.5 | 72.5 | 80.4 |
| | cfm | 2.9 | 5.6 | 8.1 | 10.5 | 12.7 | 13.2 | 20.8 | 26.1 | 32.2 | 38.0 | 42.7 | 47.3 |
| MAXIGAS112 | m ³ /hr | 6 | 11.3 | 16.5 | 21.4 | 25.9 | 26.8 | 42.4 | 53.3 | 65.7 | 77.4 | 87.1 | 96.5 |
| | cfm | 3.5 | 6.7 | 9.7 | 12.6 | 15.2 | 15.8 | 25 | 31.4 | 38.7 | 45.6 | 51.3 | 56.8 |
| MAXIGAS116 | m ³ /hr | 7.9 | 14.4 | 20.9 | 27.1 | 32.8 | 34 | 53.7 | 67.5 | 83.2 | 98.1 | 110.3 | 122.3 |
| | cfm | 4.6 | 8.5 | 12.3 | 15.9 | 19.3 | 20.0 | 31.6 | 39.7 | 49 | 57.7 | 64.9 | 72.0 |
| MAXIGAS120 | m ³ /hr | 9.8 | 17.4 | 25.3 | 32.8 | 39.7 | 41.2 | 65 | 81.7 | 100.7 | 118.7 | 133.5 | 148 |
| | cfm | 5.8 | 10.2 | 14.9 | 19.3 | 23.4 | 24.2 | 38.3 | 48.1 | 59.3 | 69.9 | 78.6 | 87.1 |
| Outlet Pressure | bar g | 5.5 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.0 | 5.9 | 5.8 | 5.7 | 5.7 | 5.6 |
| | psi g | 80 | 88 | 88 | 88 | 88 | 88 | 87 | 86 | 84 | 83 | 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 - 15 bar g 87 - 217 psi g |

Electrical Parameters

| | |
|----------------|---|
| Supply Voltage | 100 - 240 ±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" NPT |
| N ₂ Outlet to Buffer | 1" 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 |
| MAXIGAS104 | 1894 | 76 | 550 | 22 | 692 | 28 | 336 | 741 |
| MAXIGAS106 | 1894 | 76 | 550 | 22 | 861 | 34 | 394 | 869 |
| MAXIGAS108 | 1894 | 76 | 550 | 22 | 1029 | 41 | 488 | 1076 |
| MAXIGAS110 | 1894 | 76 | 550 | 22 | 1198 | 48 | 582 | 1283 |
| MAXIGAS112 | 1894 | 76 | 550 | 22 | 1368 | 55 | 676 | 1490 |
| MAXIGAS116 | 1894 | 76 | 550 | 22 | 1765 | 71 | 864 | 1905 |
| MAXIGAS120 | 1894 | 76 | 550 | 22 | 2043 | 82 | 1052 | 2319 |

Packed Weights and Dimensions

| Model | Height (H) | | Width (W) | | Depth (D) | | Weight | |
|------------|------------|----|-----------|----|-----------|----|--------|------|
| | mm | in | mm | in | mm | in | kg | lb |
| MAXIGAS104 | 800 | 31 | 2020 | 80 | 1000 | 39 | 464 | 1023 |
| MAXIGAS106 | 800 | 31 | 2020 | 80 | 1000 | 39 | 521 | 1149 |
| MAXIGAS108 | 800 | 31 | 2020 | 80 | 1200 | 47 | 614 | 1354 |
| MAXIGAS110 | 800 | 31 | 2020 | 80 | 1250 | 49 | 744 | 1640 |
| MAXIGAS112 | 800 | 31 | 2020 | 80 | 1510 | 60 | 790 | 1742 |
| MAXIGAS116 | 800 | 31 | 2020 | 80 | 1820 | 72 | 980 | 2160 |
| MAXIGAS120 | 800 | 31 | 2020 | 80 | 2270 | 90 | 1360 | 3015 |