# On-Site Nitrogen Generators

1-2,000 scfm

## Boost Your Bottom Line

**With quality and reliability built in, Ingersoll Rand's on-site nitrogen generators offer a wide variety of innovative solutions to meet your production needs and reduce operating costs compared to traditional nitrogen supply.**

Learn More About Nitrogen Generators

## The Benefits of On-Site Nitrogen Generation

The earth's atmosphere is composed of 78% nitrogen, making it one of the most readily available and economical inert gases. It is used to avoid combustion, corrosion and product spoilage. Many industries rely on nitrogen for their manufacturing processes, including food and beverage, electronics, petrochemicals, pharmaceutical and metal operations.

Ingersoll Rand offers a complete line of nitrogen generation solutions that allow you to forgo traditional nitrogen delivery, reduce operating expenses and simplify your operations.

**On-site nitrogen generation with Ingersoll Rand helps your business realize the following benefits:**

- Lower operating costs with year-over-year savings
- Simplify business processes with a single trusted partner for your nitrogen generation needs
- Reduce waste and operate more sustainably
- Avoid safety and footprint issues associated with storing nitrogen

**Let Ingersoll Rand be your trusted partner for your complete nitrogen generation system solution and service.**

Air Compressor | Refrigerated Dryer | Activated Carbon Tower | Receiver Tank | $N_2$ Generator | Receiver Tank

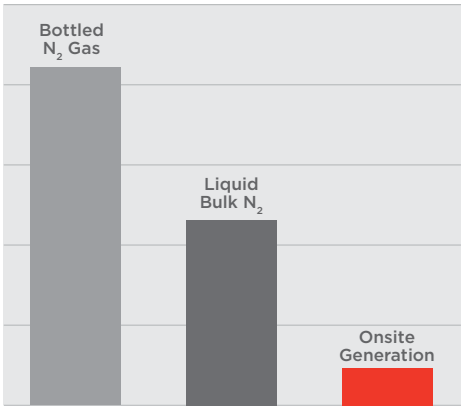
# Advantages of On-Site Nitrogen Generation

Our nitrogen generators eliminate the need for traditional nitrogen shipments and storage, providing you with real cost savings. With access to our entire portfolio of related products and services, you'll have a trusted partner for nitrogen solutions from start to finish. Choose from membrane technology for smaller applications requring lower purities, and pressure swing adsorption (PSA) technology for lower operating costs and higher nitrogen purity above 99.5%.

**On-Site Nitrogen Generation with Ingersoll Rand:**

- Lowers your operating cost by generating nitrogen at your facility from freely available air
- Maximizes system energy efficiency by providing a wide range of technologies, including nitrogen generators with industry-leading air-to-nitrogen ratio
- Provides $N_2$ purity tailored to your operation, whether you need 95% or 99.999%
- Ensures peace of mind with trained Ingersoll Rand technicians to provide local support

## Annual Operating Cost




Ingersoll Rand nitrogen generators typically provide a one-year payback. After year one, you'll realize year-over-year savings.

## KNOW THE FACTS

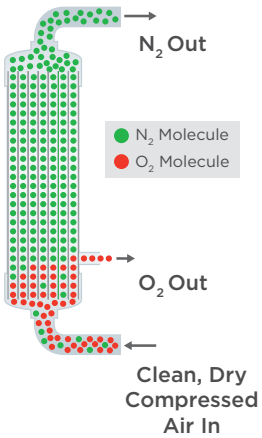
**10-20% of bulk nitrogen is typically wasted through bleed off or failure to extract all $N_2$ from canisters.**


# Membrane Nitrogen Generators

For smaller applications requiring less purity, membrane nitrogen generators provide a reliable economical solution.

## How Membrane Nitrogen Generators Work

Compressed air passes through a separation membrane consisting of thousands of hollow tubes. Small holes in the walls of each tube allow smaller oxygen molecules to filter through, leaving a stream of high purity nitrogen at the membrane outlet. There are no moving parts to the membrane—simply controlling operating pressure, temperature and product nitrogen flow rate result in the desired purity.




- Designed to meet lower flow requirements and lower nitrogen purities up to 99.5%
- Simple design with no moving parts for a reliable solution
- Comes standard with air filtration needed for a simple plug and play design
- Smaller installed footprint, simpler to maintain and repair


# Pressure Swing Adsorption (PSA) Nitrogen Generators

Your success depends on safety and reliability—that's why it's built into all of our nitrogen generators. Each PSA system comes pre-assembled and tested at the factory for simple, plug-and-play installation at your site to maximize productivity and ensure out-of-box operation. Our robust design includes:

- Superior quality CMS media that extends product life, simplifies maintenance and reduces replacement costs
- Flow is directed to one adsorber or the other by precision switching valves with high cycle rating to improve durability
- Intelligent controls designed to optimize set points, improve performance, and protect your entire nitrogen generation system
- ASME-certified pressure vessels to ensure safe operation
- Standard extended warranties to keep you protected for 24/30 months

## How PSA Nitrogen Generators Work

PSA technology utilizes a twin tower design where nitrogen production and tower regeneration occur simultaneously.

### $N_2$ Production

1 Compressed air enters the generator and 2 $O_2$ is adsorbed from the air by the carbon molecular sieve (CMS). 3 The remaining $N_2$ is recovered for use.

### Regeneration

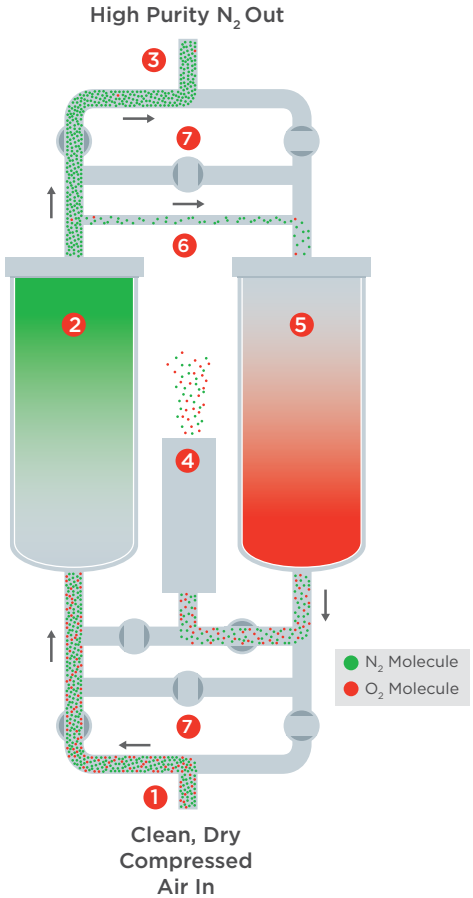
4 Pressure is released from the regeneration tower to the atmosphere. 5 The $O_2$ in the CMS is desorbed and leaves the tower at atmospheric pressure. 6 A small amount of $N_2$ is redirected to the tower to assist with CMS regeneration.

### Pressure Equalization

7 After regeneration, the generator's inlet and outlet valves are closed and the two towers are opened to one another to equalize pressure.

### Tower Switch

Once equalized, the freshly regenerated tower now becomes the production tower while the other tower is regenerated.



## Membrane Nitrogen Generation Performance, 77°F Ambient, 125 psig

| | N2 Flow Rate at each Purity scfm | | | | | | |
|---|---|---|---|---|---|---|---|
| Model* | 95% | 99% | 99.5% | Inlet NPT | Outlet NPT | Dimensions | Weight |
| NG1MP | 1.0 | 0.4 | 0.3 | 1/4" FNPT | 1/4" FNPT | 21 x 4 x 45 | 25 |
| NG4MP | 3.0 | 1.2 | 0.9 | 1/4" FNPT | 1/4" FNPT | 21 x 4 x 45 | 35 |
| NG8MP | 5.4 | 2.2 | 1.6 | 1/4" FNPT | 1/4" FNPT | 21 x 4 x 45 | 35 |
| NG9MP | 8.4 | 3.1 | 2.3 | 3/8" FNPT | 3/8" FNPT | 21 x 4 x 45 | 46 |
| NG12MP | 8.7 | 3.5 | 2.6 | 3/8" FNPT | 3/8" FNPT | 21 x 7 x 69 | 117 |
| NG18MP | 17.0 | 6.6 | 4.9 | 1/2" FNPT | 1/2" FNPT | 21 x 7 x 69 | 142 |
| NG35ME | 33.9 | 13.1 | 9.7 | 1" FNPT | 3/4" FNPT | 31 x 20 x 63 | 327 |
| NG76ME | 74.8 | 29.1 | 26.9 | 1-1/2" FNPT | 1-1/2" FNPT | 49 x 24 x77 | 873 |
| NG115ME | 112.3 | 43.6 | 40.3 | 1-1/2" FNPT | 1-1/2" FNPT | 49 x 24 x77 | 950 |
| NG153ME | 149.7 | 58.1 | 53.7 | 1-1/2" FNPT | 1-1/2" FNPT | 49 x 24 x77 | 1,027 |

## PSA Nitrogen Generation Performance, 77°F Ambient, 125 psig

| | N2 Flow Rate at each Purity, scfm | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Model* | 95% | 99% | 99.5% | 99.9% | 99.95% | 99.99% | 99.999% | Inlet NPT | Outlet NPT | Dimensions (LxWxH) in | Weight lb |
| NG15LS | 13.3 | 7.5 | 6.7 | 5.0 | 4.4 | 3.3 | 2.2 | 3/4" FNPT | 1/2" FNPT | 35 x 26 x 80 | 702 |
| NG21LS | 17.4 | 9.9 | 8.8 | 6.6 | 5.8 | 4.4 | 2.9 | 3/4" FNPT | 1/2" FNPT | 35 x 26 x 100 | 738 |
| NG32LS | 28.4 | 16.2 | 14.3 | 10.8 | 9.5 | 7.2 | 4.7 | 3/4" FNPT | 1/2" FNPT | 35 x 26 x 97 | 998 |
| NG47LS | 42.3 | 24.1 | 21.3 | 16.0 | 14.2 | 10.7 | 7.0 | 1" FNPT | 3/4" FNPT | 35 x 30 x 100 | 1,194 |
| NG68LS | 58.4 | 33.2 | 29.3 | 22.1 | 19.5 | 14.7 | 9.6 | 1" FNPT | 3/4" FNPT | 35 x 30 x 91 | 1,443 |
| NG88LS | 76.2 | 43.3 | 38.3 | 28.8 | 25.5 | 19.2 | 12.5 | 1" FNPT | 3/4" FNPT | 35 x 37 x 96 | 1,630 |
| NG118LS | 101.0 | 57.4 | 50.7 | 38.2 | 33.8 | 25.4 | 16.6 | 1-1/2" FNPT | 1" FNPT | 35 x 39 x 99 | 2,025 |
| NG132HS | 119.5 | 67.9 | 60.0 | 45.2 | 40.0 | 30.1 | 19.6 | 1-1/2" FNPT | 1" FNPT | 35 x 39 x 116 | 3,450 |
| NG159HS | 143.3 | 81.5 | 71.9 | 54.2 | 47.9 | 36.1 | 23.5 | 1-1/2" FNPT | 1" FNPT | 64 x 34 x 134 | 3,810 |
| NG191HS | 163.8 | 93.1 | 82.2 | 61.9 | 54.8 | 41.2 | 26.9 | 2" FNPT | 1-1/2" FNPT | 76 x 48 x 117 | 4,520 |
| NG232HS | 200.6 | 114.0 | 100.7 | 75.8 | 67.1 | 50.5 | 32.9 | 2" FNPT | 1-1/2" FNPT | 76 x 48 x 135 | 4,990 |
| NG285HS | 245.0 | 139.3 | 123.0 | 92.6 | 81.9 | 61.6 | 40.2 | 2" FNPT | 1-1/2" FNPT | 76 x 48 x 119 | 6,120 |
| NG347HS | 298.6 | 169.8 | 149.9 | 112.9 | 99.9 | 75.1 | 49.0 | 2" FNPT | 1-1/2" FNPT | 76 x 48 x 137 | 6,760 |
| NG382HS | 328.4 | 186.7 | 164.9 | 124.1 | 109.8 | 82.6 | 53.9 | 2" FNPT | 1-1/2" FNPT | 76 x 48 x 147 | 7,120 |
| NG456HS | 392.3 | 223.0 | 196.9 | 148.3 | 131.2 | 98.7 | 64.4 | 3" FNPT | 2" FNPT | 95 x 53 x 125 | 8,030 |
| NG550HS | 477.2 | 271.3 | 239.5 | 180.4 | 159.6 | 120.1 | 78.4 | 3" FNPT | 2" FNPT | 95 x 53 x 143 | 8,990 |
| NG668HS | 576.2 | 327.6 | 289.2 | 217.8 | 192.7 | 145.0 | 94.6 | 3" FNPT | 2" FNPT | 95 x 53 x 164 | 10,170 |
| NG809HS | 697.0 | 396.2 | 349.9 | 263.5 | 233.1 | 175.4 | 114.5 | 3"/4" FLG | 2"/3" FLG | 111 x 60 x 148 | 14,090 |
| NG982HS | 852.3 | 484.5 | 427.8 | 322.2 | 285.0 | 214.4 | 140.0 | 3"/4" FLG | 2"/3" FLG | 111 x 60 x 171 | 15,980 |
| NG1176HS | 1017.9 | 578.7 | 511.0 | 384.8 | 340.4 | 256.1 | 167.2 | 3"/4" FLG | 3" FLG | 120 x 66 x 158 | 17,430 |
| NG1306HS | 1129.1 | 641.9 | 566.8 | 426.8 | 377.6 | 284.1 | 185.4 | 3"/4" FLG | 3" FLG | 120 x 66 x 170 | 19,200 |
| NG1588HS | 1379.3 | 784.1 | 692.4 | 521.4 | 461.3 | 347.0 | 226.5 | 3"/4" FLG | 3" FLG | 120 x 66 x 197 | 22,030 |
| NG1765HS | 1528.5 | 868.9 | 767.3 | 577.8 | 511.2 | 384.6 | 251.0 | 3"/4" FLG | 3" FLG | 120 x 66 x 213 | 23,760 |
| NG2130HS | 1841.7 | 1047.0 | 924.5 | 696.2 | 615.9 | 463.4 | 302.4 | 4"/6" FLG | 3" FLG | 135 x 76 x 204 | 30,650 |
| NG2353HS | 2034.5 | 1156.6 | 1021.3 | 769.1 | 680.4 | 511.9 | 334.1 | 4"/6" FLG | 3" FLG | 135 x 76 x 220 | 32,950 |

** Additional models available; contact your local Ingersoll Rand representative for more information.*

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Ingersoll Rand Inc. (NYSE:IR), driven by an entrepreneurial spirit and ownership mindset, is dedicated to helping make life better for our employees, customers and communities. Customers lean on us for our technology-driven excellence in mission-critical flow creation and industrial solutions across 40+ respected brands where our products and services excel in the most complex and harsh conditions. Our employees develop customers for life through their daily commitment to expertise, productivity and efficiency. For more information, visit www.IRCO.com.

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