29+ YEARS OF EXCELLENCE

summits
Enabling Innovation. Enhancing Lives.


# nitroPAK

## NITROGEN GAS GENERATORS

$N_2$ Flow upto 2500 $Nm^3$ / hr

$N_2$ purity upto 99.9999%

Plug-and -Play

Fastest ROI

Reduced $CO_2$ Foot Print

Scan QR Code for product animation

# 29+ Years of Excellence In PSA Technology

**Complete Range of Products:**
We specialize in building a whole range of products for compressed air purification and gas generation on a standard, custom built & turnkey basis.

**In-house Production Capabilities:**
Built across 1,00,000 $ft^2$ area, ours is a fully-equipped production facility. Having an all-inclusive facility helps us deliver products with the industry's best & highest standards.

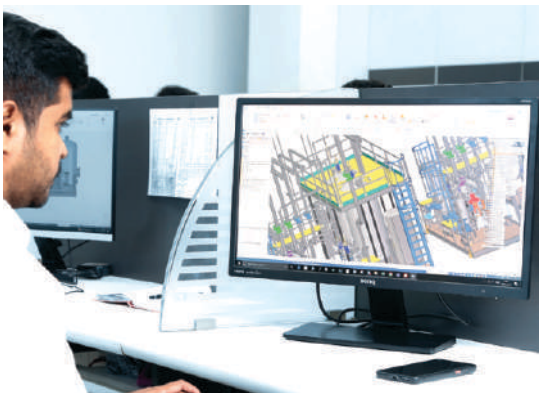
**Global Clientele:**
Our products are up and running in many public and private sector organizations across India as well as in SE Asia, EU, GCC, African Countries, and the USA.

## State-of-the-art Infrastructure


Fully-equipped production facility built across an area of 1,00,000 $ft^2$.

## Dedicated Research and Development

Core strength lies in R&D. Our product researchers, designers, and engineers work on the frontiers of applied science to build world-class solutions for compressed air purification and gas generation.



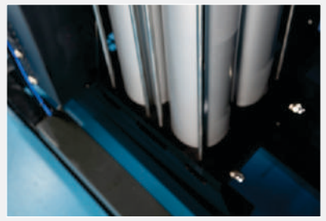
## Industry's Best Tools and Equipment

Our R&D lab has sophisticated tools such as 3D modeling software - Solid Edge (in partnership with Siemens), Simulation, Analysis & CFD software, and Test rigs.

## Stringent Quality Assurance Procedures

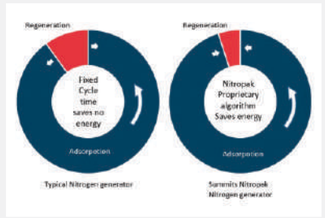
Starting from material inspection to in-process inspection to final product testing, we undertake comprehensive quality assurance procedures to ensure consistency in guaranteed parameters.

# Modular Nitrogen Gas Generator



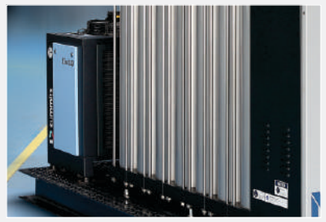
### Unlimited Scalability

Expandable. Reduces investment when in need of additional capacity.



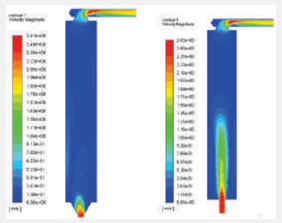

### Energy Economizer

offers potential savings during varying load condition.



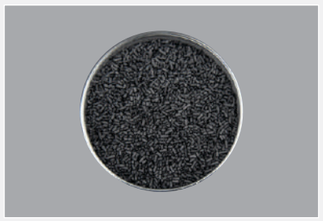
### Feed air quality monitoring

ensures stringent pretreatment.



### Uniform distribution

of gas flow over the entire CMS, this technology ensures the highest efficiency of the adsorption process and lowest air ratio.



### High - Density Packing

CMS is packed with support of **Vibration Table** which assures high packing density and lowest air consumption.

### Advanced PLC

Integrated PLC with numerous facilities, controls, maintenance alert and compatible to industries required communication protocol


### Inbuilt Nitrogen purity indicator

helps to ascertain outlet gas purity.

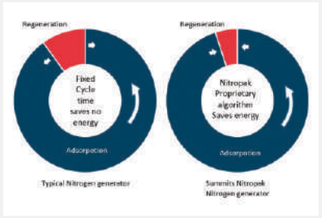
### Quite operation

Silent and No back pressure.
Aluminium end covers for longer life.



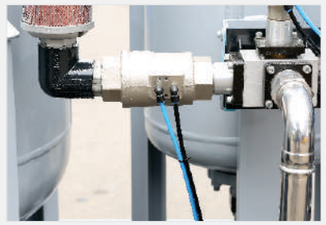


Key Features



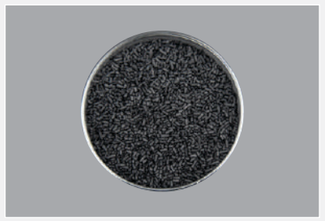

**Energy Economizer**
offers potential savings during varying load condition.

**Feed air quality monitoring**
ensures stringent pretreatment.



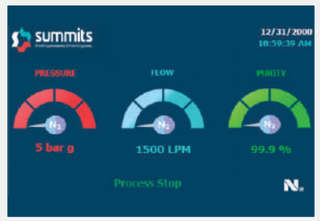
**Valve Leak Check**
offers uninterrupted trouble-free operation

# Twin Tower Nitrogen Gas Generator

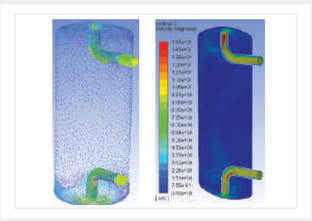



**High - Density Packing**
CMS is packed with support of **Vibration Table** which assures high packing density and lowest air consumption.


**Inbuilt Nitrogen purity indicator**
helps to ascertain outlet gas purity.




**7" Touch Screen**
display with remote monitoring of $N_2$
Purity, Flow & Pressure.



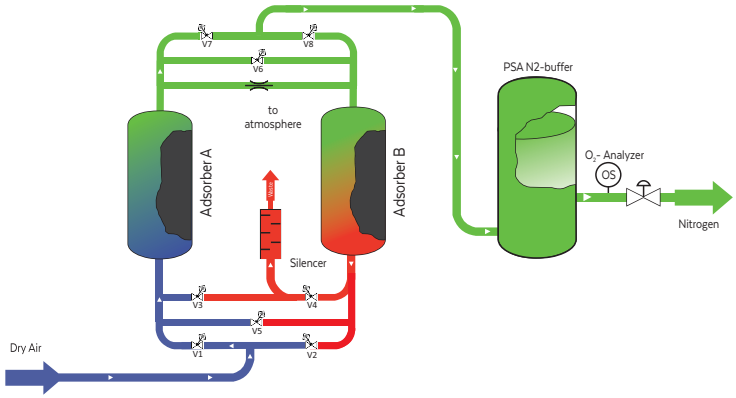
**Simulation Driven**
Every parameter affecting the reliability is carefully analyzed and culminated using simulation techniques.

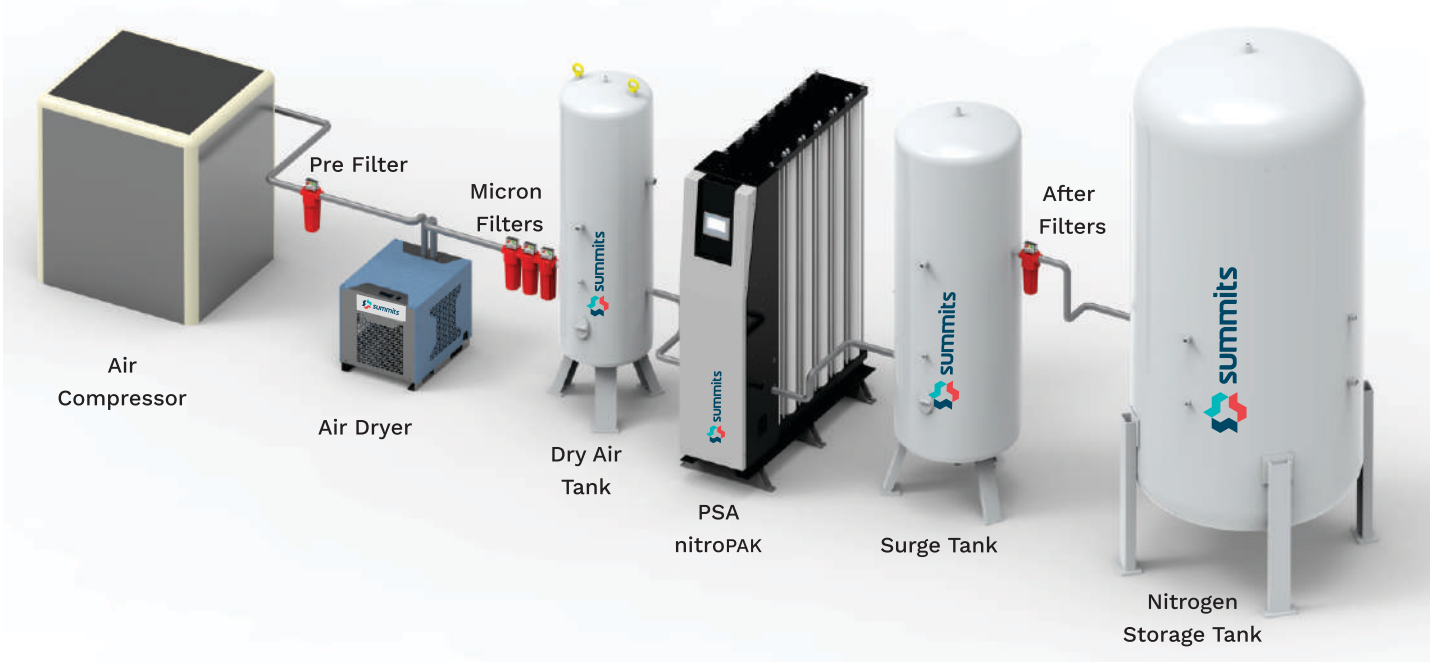
**Quite operation**
Silent and No back pressure.
Aluminium end covers for longer life.

Key Features

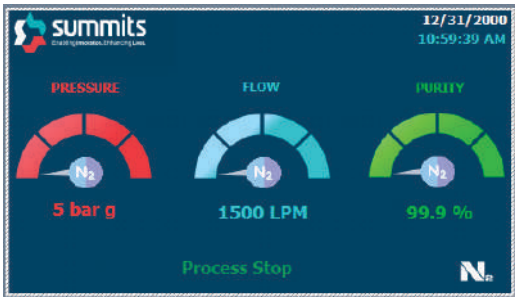
## Working Principle

PSA Nitrogen Generators operate on the Pressure Swing Adsorption (PSA) principle to produce a continuous stream of nitrogen gas from compressed air. Two towers are filled with carbon molecular sieve (CMS). Pretreated compressed air enters the bottom of the on-line tower and follows up through the CMS. Oxygen and other trace gasses are preferentially adsorbed by the CMS, allowing nitrogen to pass through. After a pre-set time, the on-line tower automatically switches to regenerative mode, venting contaminants from the CMS.




| Specifications | |
|---|---|
| Design operating pressure range | 6 - 10 barg |
| Design operating temperature range | 5 - 50°C |
| Recommended operating temperature | 5 - 45°C |
| Maximum inlet particulate | 0.1 micron |
| Maximum inlet oil content | 0.01ppm |
| Recommended inlet dew point | 3°C PDP |



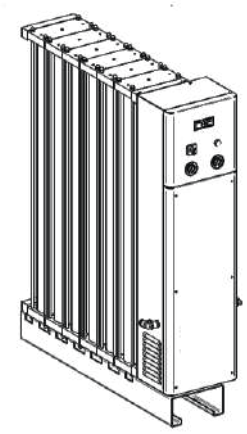

### Pressure correction factors

| Inlet air pressure (bar g) | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|
| | 0.88 | 1 | 1.1 | 1.2 | 1.3 |

### Temperature correction factors

| Inlet air temperature (°C) | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0.8 | 0.9 | 0.94 | 1.03 | 1.06 | 1 | 1 | 0.95 | 0.85 | 0.72 |

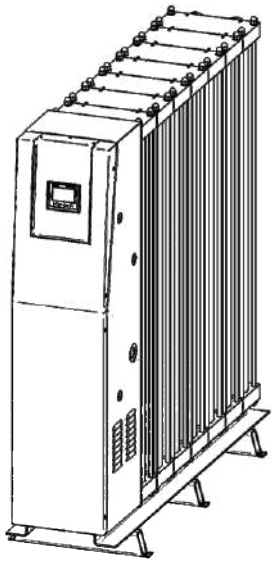
* For High pressure contact factory

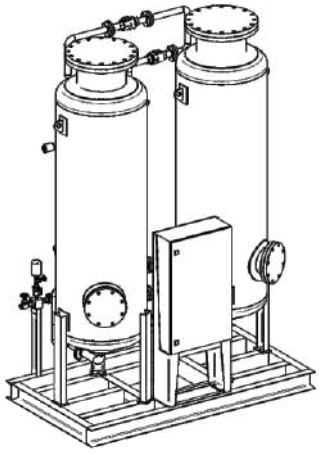


## Modular Type

| MODEL | Free Nitrogen delivery (FND) in $Nm^3/hr$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $N_2$ Purity (% | 95 | 97 | 99 | 99.5 | 99.9 | 99.95 | 99.99 | 99.995 | 99.999 |
| nitroPAK 3 | 7.5 | 5.8 | 5.0 | 3.4 | 2.6 | 2.2 | 1.7 | NA | NA |
| nitroPAK 6 | 15.0 | 11.6 | 10.0 | 6.8 | 5.2 | 4.4 | 3.4 | 2.0 | 1.6 |
| nitroPAK 10 | 22.5 | 17.4 | 15.0 | 10.2 | 7.8 | 6.6 | 5.1 | 3.0 | 2.4 |
| nitroPAK 13 | 30 | 23.2 | 20.0 | 13.6 | 10.4 | 8.8 | 6.8 | 4.0 | 3.2 |
| nitroPAK 17 | 37.5 | 29.0 | 25.0 | 17.0 | 13.0 | 11.0 | 8.5 | 5.0 | 4.0 |

| MODEL | Free Nitrogen delivery (FND) in $Nm^3/hr$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $N_2$ Purity (%) | 95 | 97 | 99 | 99.5 | 99.9 | 99.95 | 99.99 | 99.995 | 99.999 |
| nitroPAK 25 | 45.0 | 42.8 | 30.0 | 25.1 | 19.2 | 16.2 | 12.5 | 7.4 | 5.9 |
| nitroPAK 33 | 60.0 | 57.0 | 40.0 | 33.4 | 25.6 | 21.6 | 16.7 | 9.8 | 7.9 |
| nitroPAK 41 | 75.0 | 71.3 | 50.0 | 41.8 | 32.0 | 27.0 | 20.9 | 12.3 | 9.8 |
| nitroPAK 50 | 90.0 | 85.5 | 60.0 | 50.1 | 38.3 | 32.4 | 25.1 | 14.7 | 11.8 |
| nitroPAK 58 | 105.0 | 99.8 | 70.0 | 58.5 | 44.7 | 37.9 | 29.3 | 17.2 | 13.8 |
| nitroPAK 66 | 120.0 | 114.1 | 80.0 | 66.9 | 51.1 | 43.3 | 33.4 | 19.7 | 15.7 |
| nitroPAK 75 | 135.0 | 128.3 | 90.0 | 75.2 | 57.5 | 48.7 | 37.6 | 22.1 | 17.7 |
| nitroPAK 83 | 150.0 | 142.6 | 100.0 | 83.6 | 63.9 | 54.1 | 41.8 | 24.6 | 19.7 |





## Twin Tower

| MODEL | Free Nitrogen delivery (FND) in $Nm^3/hr$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $N_2$ Purity (%) | 95 | 97 | 99 | 99.5 | 99.9 | 99.95 | 99.99 | 99.995 | 99.999 |
| nitroPAK 100 | 222.2 | 170.0 | 113.0 | 100.0 | 75.0 | 65.0 | 49.0 | 30.0 | 23.5 |
| nitroPAK 150 | 333.3 | 255.0 | 169.5 | 150.0 | 112.5 | 97.5 | 73.5 | 45.1 | 35.2 |
| nitroPAK 200 | 444.4 | 340.0 | 226.0 | 200.0 | 150.0 | 130.0 | 98.0 | 60.1 | 46.9 |
| nitroPAK 250 | 555.5 | 425.0 | 282.5 | 250.0 | 187.5 | 162.5 | 122.5 | 75.1 | 58.6 |
| nitroPAK 300 | 666.6 | 510.0 | 339.0 | 300.0 | 225.0 | 195.0 | 147.0 | 90.1 | 70.4 |
| nitroPAK 350 | 777.7 | 595.0 | 395.5 | 350.0 | 262.5 | 227.5 | 171.5 | 105.1 | 82.1 |
| nitroPAK 400 | 888.8 | 680.0 | 452.0 | 400.0 | 300.0 | 260.0 | 196.0 | 120.2 | 93.8 |
| nitroPAK 450 | 999.9 | 765.0 | 508.5 | 450.0 | 337.5 | 292.5 | 220.5 | 135.2 | 105.6 |
| nitroPAK 500 | 1111.0 | 850.0 | 565.0 | 500.0 | 375.0 | 325.0 | 245.0 | 150.2 | 117.3 |

## Reference Conditions

Ambient temperature : 5°C/45°C

Feed air pressure : 7.0 bar(g)

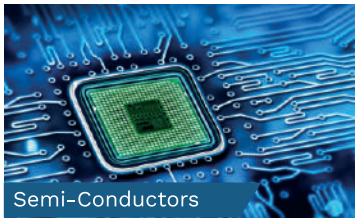
Nitrogen outlet pressure : 5.0 bar (g)

Pressure dew point of nitrogen : minus 40°C

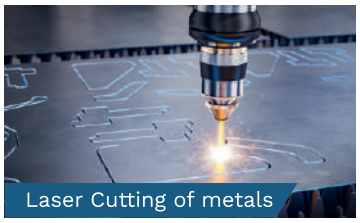
Inlet air quality 1.4.1 according to ISO 8573-1:2010.

Typical nitrogen quality 1.2.1 according to ISO 8573-1:2010.

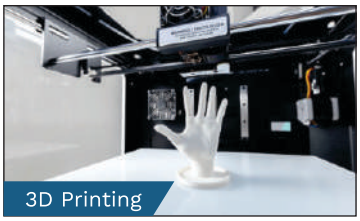
# Applications

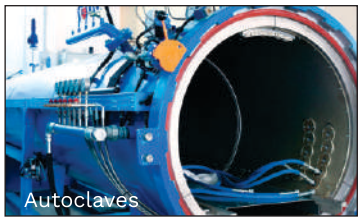














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