

Nitrogen Generators

- HP Plus N₂ Tower
- Mistral Evolution
- Mini Whisper
- Whisper

Life Gets Better Through Your Analysis



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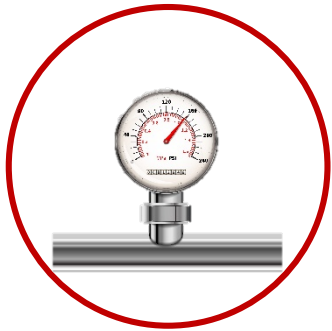
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01

Benefits of N₂ Generator



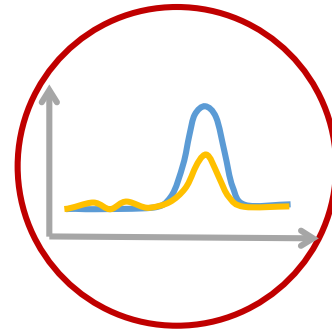
Dangerous

high pressure of
gas cylinder



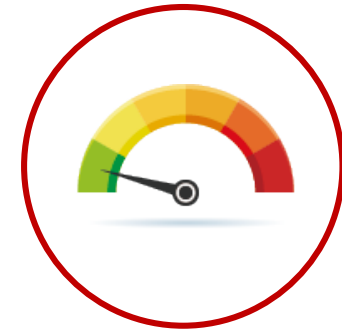
Expensive

Regular cylinder
replacement costs



Poor Reliability

Unstable baseline and low
sensitivity by inconsistent flow
and uncertainty of gas purity



Low Throughput

Instrument down time
due to the limited
capacity of gas

Benefits of N₂ Generator

1

Improved Safety

No risk of the use of high pressure of gas cylinder

2

Cost-Saving

Low maintenance and no need of regular gas cylinder replacement

3

Reliable Purity

No need to worry about poor reliability caused by consistent

4

Superior Lab Efficiency

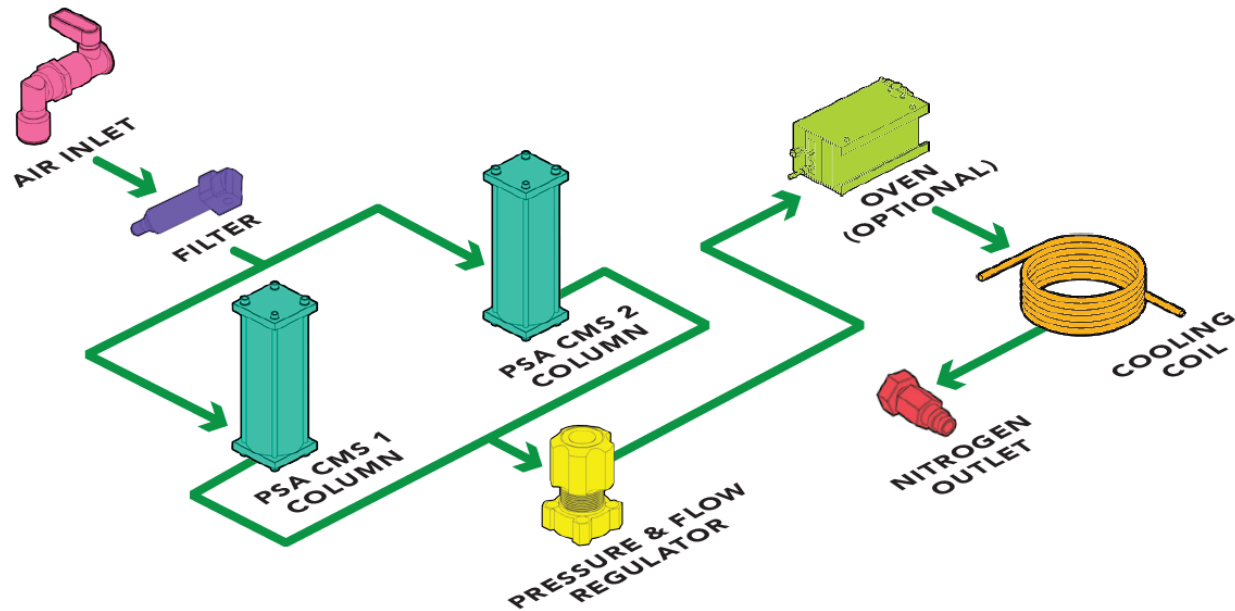
High throughput and no instrument down time

02

How It Works



How it Works --- PSA Type



PSA Type Flow Chart

Features of PSA Type

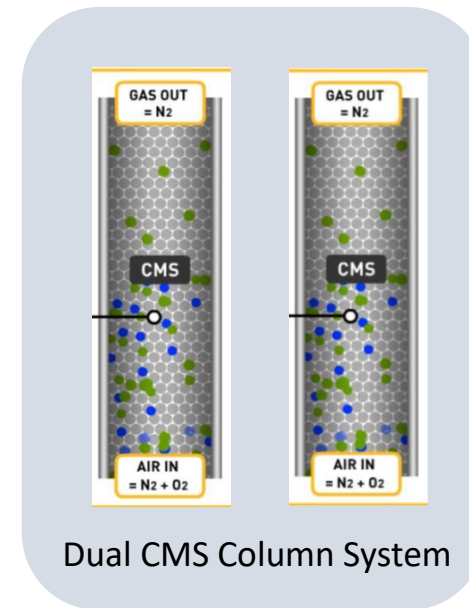
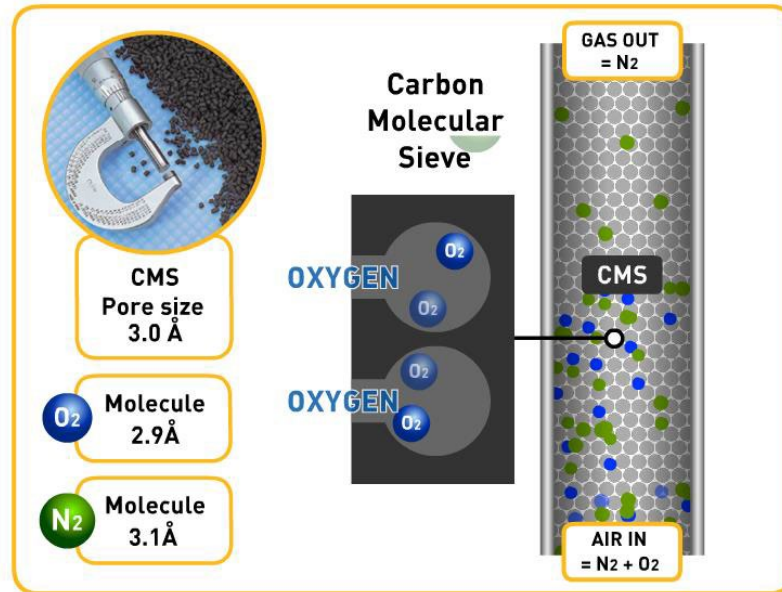
- Semi-permanent use
- Great reliability
- Regeneration system
- Higher purity



How it Works --- PSA Type

PSA (Pressure Swing Adsorption)

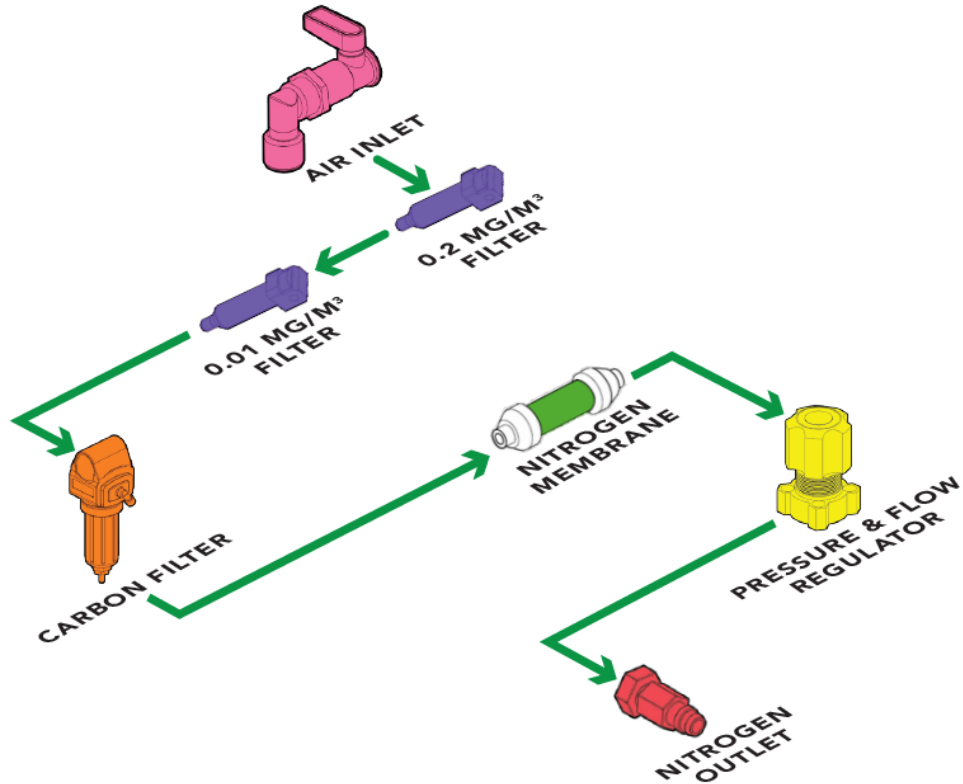
Pressure Swing Adsorption Technology
using Carbon Molecular Sieve Material



CMS(Carbon Molecular Sieve)s are activated carbons to selectively separate gases based on sizes



How it Works --- Membrane Type



Membrane Type Flow Chart

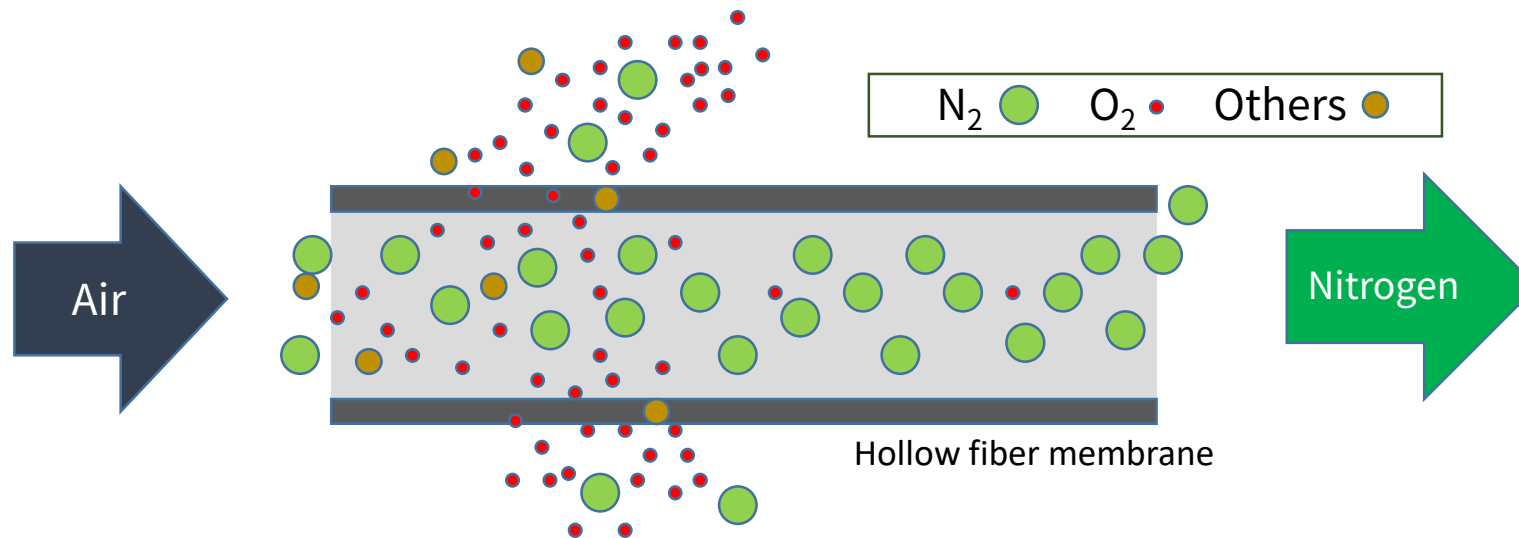
Features of Membrane Type

- Quiet operation
- Compact size
- Low maintenance
- Higher Productivity



How it Works --- Membrane Type

Membrane Separation



Membrane which is the wall of hollow porous fiber allows to separate nitrogen from compressed air.

03

Product Line-up

PSA type



N₂ Tower Plus
up to 99.999% purity



N₂ Mistral EVO
99.5% purity

Membrane type



N₂ Mini Whisper
up to 99% purity



N₂ Whisper Series
up to 99% purity

04

Features of N₂ Generator



HP Plus N₂ Tower

Features

- Nitrogen purity: up to 99.999%
- Flow rate: up to 4000 mL/min
- PSA (Pressure Swing Adsorption) technology
- External air compressor required
- Optional oven for getting rid of hydrocarbon
- Hydrocarbon purity option (measured as methane) < 0.1 ppm
- Applications:
GC carrier and make-up gas, ECD for GC, ELSD for HPLC...



Features of N₂ Generator --- HP Plus N₂ Tower

Model	N ₂ Tower HP 500	N ₂ Tower HP 750	N ₂ Tower HP 1300	N ₂ Tower HP 4000
Flow rate (mL/min)	500	750	1300	4000
Nitrogen purity	99.999%		99.99%	99%
Hydrocarbon purity (measured as methane)	N/A			

Model	N ₂ Tower HP 200 HC	N ₂ Tower HP 500 HC	N ₂ Tower HP 750 HC	N ₂ Tower HP 1300 HC	N ₂ Tower HP 4000 HC
Flow rate (mL/min)	200	500	750	1300	4000
Nitrogen purity	99.999%			99.99%	99%
Hydrocarbon purity (measured as methane)	0.1 ppm				



Mistral Evolution

Features

- Nitrogen purity: LC/MS grade up to 99.5%
- Flow rate: up to 40 L/min
- PSA (Pressure Swing Adsorption) technology
- Built-in air compressor (standard)
- Applications:

Nebulizing gas, electrospray gas, Jet stream gradient for LC/MS and NMR, ELSD...



Features of N₂ Generator --- Mistral Evolution

Model	Mistral EVO 10	Mistral EVO 25	Mistral EVO 35	Mistral EVO 40
Flow rate (mL/min)	10	25	35	40
Nitrogen purity	99.5%	99%	98%	97%
Hydrocarbon purity (measured as methane)	N/A			



Whisper



Mini Whisper

Features

- Nitrogen purity: LC/MS grade up to 99%
- Flow rate: up to 120 L/min
- Proprietary membrane technology
- External compressed air supply required

- Applications:

Nebulizing gas, electrospray gas, Jet stream gradient for LC/MS and NMR, ELSD...



Whisper
Hybrid



Mini Whisper
Hybrid

Features

- Nitrogen + Air
- Nitrogen purity: LC/MS grade up to 99%
- Flow rate: up to 120 L/min for N₂
- Flow rate: up to 26 mL/min for Air
- Proprietary membrane technology
- External compressed air supply required

- Applications:

Nebulizing gas, electrospray gas, Jet stream gradient for LC/MS and NMR, ELSD...



Features of N₂ Generator --- Whisper Series

Model	Mini Whisper	Whisper 40	Whisper 80	Whisper 120
Flow rate (mL/min)	12	40	80	120
Nitrogen purity	99% @ 12 L/min	97% @ 40 L/min 99% @ 20 L/min	97% @ 80 L/min 98% @ 50 L/min	95% @ 120 L/min 98% @ 50 L/min
Hydrocarbon purity (measured as methane)	N/A			

Model	Mini Whisper Hybrid	Whisper 10 Hybrid	Whisper 40 Hybrid	Whisper 80 Hybrid	Whisper 120 Hybrid
Flow rate (mL/min)	12	12	40	80	120
Nitrogen purity	99%	99%	97%	97%	95%
Air flow rate (source gas) (mL/min)	26	26	22	22	22

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Thank you

