nitrogen generation for laboratories

"Bo Wenrich, sales engineer with Compressed Air Systems (FL) teamed up with nano to upgrade our nitrogen gas generation systems and improve reliability."

-Infiniti Labs, Tampa, FL

Research and Medical labs use a variety of compressed gases like oxygen, argon, CO & nitrogen for testing. While on-site production of argon & CO aren't currently available, nitrogen & oxygen generators provide cost savings and convenience versus buying from a gas supply company.

Infiniti Labs in Western FL recognized these benefits and purchased a nitrogen generator through a lab equipment supply company, but incurred issues with maintaining the equipment after only a few years of service. Bo Wenrich, sales engineer for local compressed air & gas distributor, Compressed Air Systems teamed up with nano-purification solutions, helping Infiniti Labs match their current air compressor system with the best nitrogen generator technology.

While lab supply companies are well entrenched with customers, their experience with air compressors, filters & separation technology is far less than an industrial compressed air distributor. Compressed Air Systems' compressed air & gas experience and local support provided the best solution for Infiniti Labs.

Experience. Customer. Service.

products & processes include:

- magnetic resonance
- spectroscopy
- coordinate measurement
- iquid chromatography
- mass spectrometry

nano-purification solutions llc
charlotte, north carolina
united states

nano-purification solutions
st. catharines, ontario
canada

nano-purification solutions ltd
gateshead, tyne and wear
united kingdom

tel: 704.897.2182
fax: 704.897.2183
email: support@n-psi.com

www.n-psi.com

pressure swing adsorption (PSA) nitrogen generator

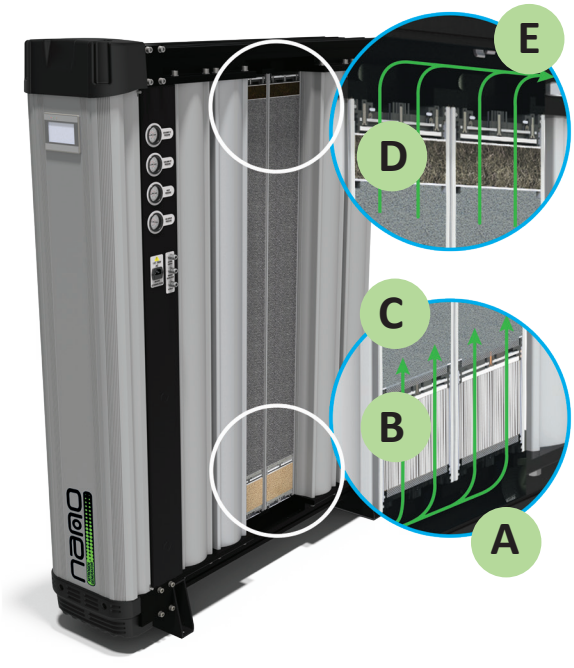
Pressure-swing adsorption, commonly known as (PSA) is used in many industrial applications to separate individual molecules & compounds from a gas stream. nano uses PSA technology in their desiccant dryers, Nitrogen generators and breathing air purifiers by selecting the correct media to trap, separate or adsorb specific gas molecules or combination or molecules.

The technologically advanced nano GEN2 nitrogen generator operates on the PSA principle to produce a continuous uninterrupted stream of nitrogen gas from clean dry compressed air.

Pairs of dual chamber extruded aluminum columns are filled with Carbon Molecular Sieve (CMS). Joined via an upper and lower manifold, the high density filled columns produce a dual bed system.

Compressed air enters through the inlet manifold (A) to the bottom of the 'online' bed and flows up through the CMS to separate the compressed air. The clean and dry air then flows up through the CMS stage (C) where oxygen and other trace gases are preferentially adsorbed allowing the nitrogen to pass through. The nitrogen then passes through the supporting bed layer (D) and outlet manifold (E) to the buffer vessel and a nano F[1] buffer vessel filter before reentering the GEN2 nitrogen generator for purity monitoring.

After a preset time the control system automatically switches the beds. One bed is always online generating nitrogen while the other is being regenerated.
During regeneration, the oxygen that has been collected in the CMS stage and the moisture that has been collected in the optional integrated dryer stage are exhausted to atmosphere. A small portion of the outlet nitrogen gas is expanded into the bed to accelerate the regeneration process.



A	inlet manifold
B	integrated dryer (optional)
C	Carbon Molecular Sieve (CMS)
D	integrated bed support layer
E	outlet manifold

publication ref. n-psi-AR101-04-US