

Where Material Science Meets System Intelligence.



On-site Nitrogen System, Re-imagined from the Core.



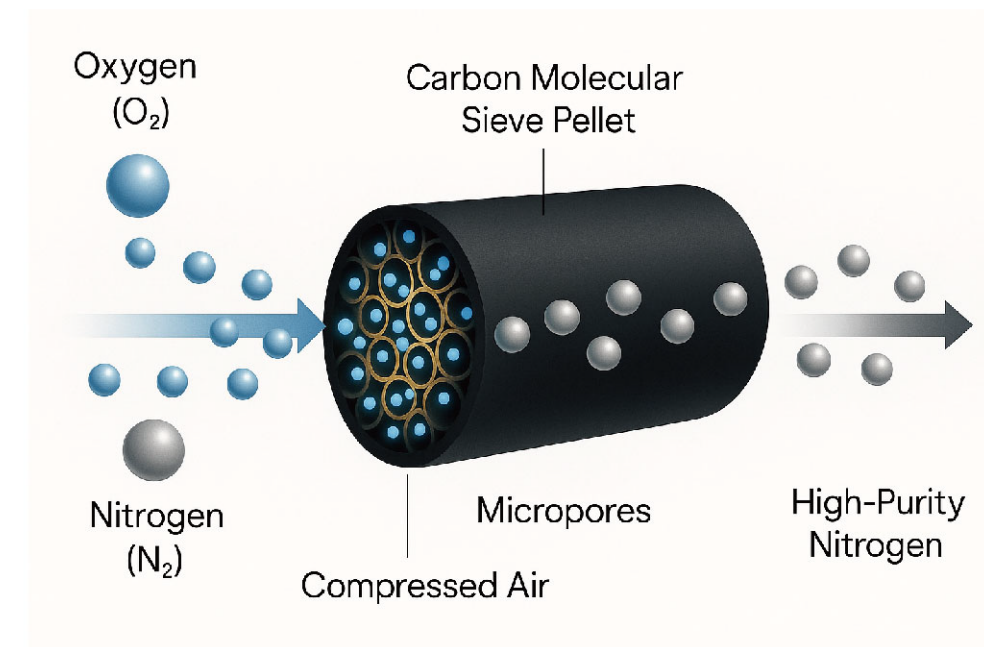
www.nitroquanta.com

Where Material Science Meets System Intelligence.



封2 空白

The Working Principle of PSA Technology



At the heart of every NitroQuanta™ PSA Nitrogen Generator lies a sophisticated process of physical separation powered by a remarkable material: Carbon Molecular Sieve (CMS).

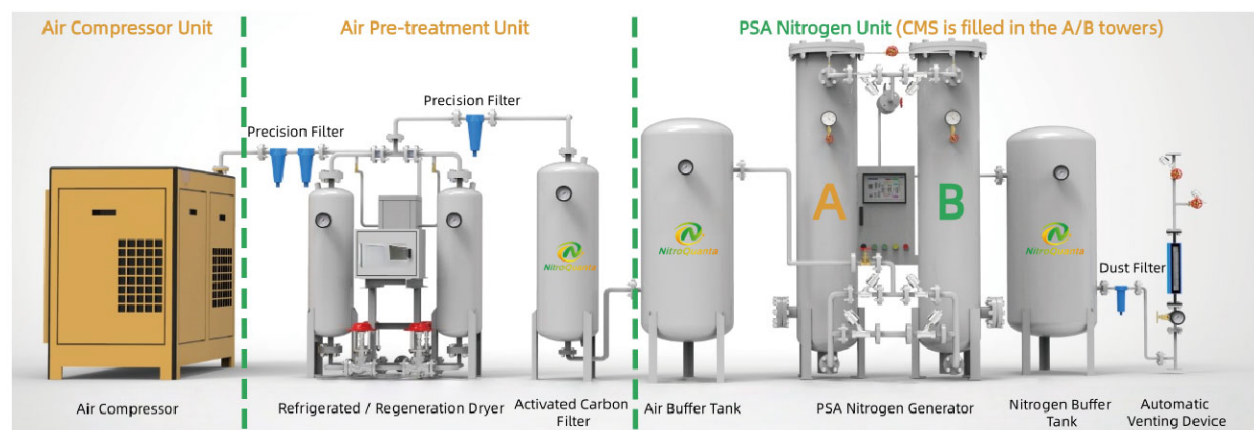
The entire principle is based on a concept known as kinetic separation. CMS is an advanced adsorbent engineered with a vast network of microscopic pores, precisely sized to differentiate between the molecules in the air based on their speed.

1. Oxygen (O_2) molecules, having a smaller kinetic diameter, diffuse rapidly into the micro-pores of the CMS and are captured.
2. Nitrogen (N_2) molecules, being slightly larger, diffuse at a much slower rate and therefore pass through the CMS bed as the desired high-purity product gas.

This separation effect is amplified and made continuous through the Pressure Swing Adsorption (PSA) cycle. An automated control system orchestrates a rapid, repeating sequence between two adsorption towers:

1. Pressurized Adsorption: One tower is pressurized with clean, compressed air, causing the CMS to rapidly adsorb oxygen.
2. Depressurized Regeneration: Simultaneously, the other tower is depressurized to ambient pressure, causing it to release the previously captured oxygen and "regenerate" its adsorbent capability. By continuously "swinging" between these two states, the system produces a constant, uninterrupted flow of high-purity nitrogen.

The Complete PSA Nitrogen System: A Synergistic Ecosystem



The process described above is the core PSA Generator Unit. However, a complete and reliable system requires two critical partner units to work in synergy:

- 1.The Air Compressor Unit: Its mission is to provide a stable and sufficient supply of the "raw material"—compressed air—for the entire system.
- 2.The Air Pre-treatment Unit: This is the critical defense line for the system's "heart." It is responsible for thoroughly removing impurities (such as oil, water, and dust) from the raw air. This is crucial, as these contaminants can clog the delicate micro-pores of the CMS, leading to performance degradation. The ultimate efficiency, reliability, and lifespan of this process are fundamentally determined by the quality of the CMS and the synergistic design of the entire system. At NitroQuanta™, our entire brand philosophy is built upon mastering this core science and system engineering.



Why NitroQuanta™ ?

Our Core Technology

1.The Heart of the System: Why CMS Defines Everything

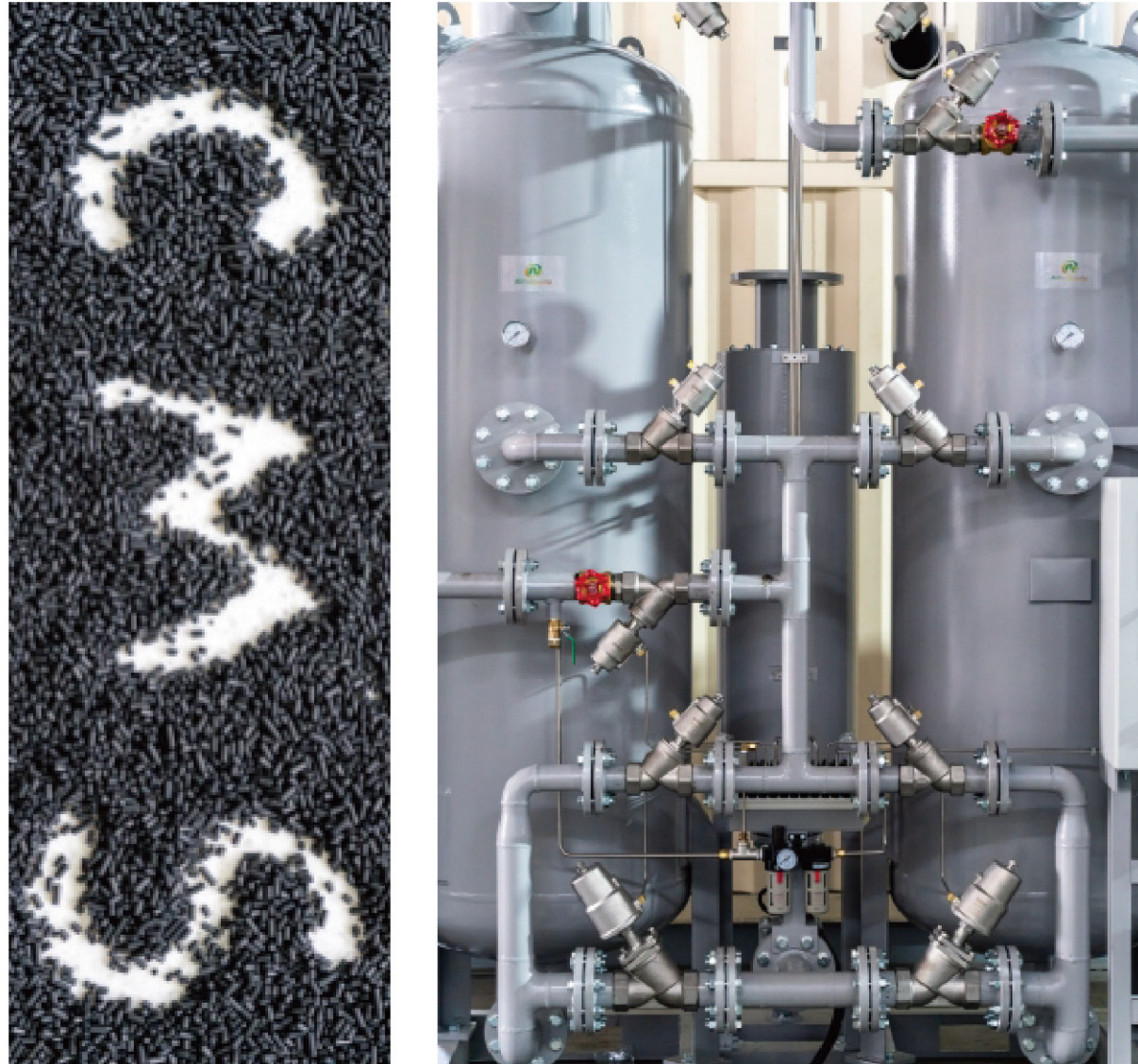
The principle of any PSA nitrogen generator is simple: use Carbon Molecular Sieve (CMS) to filter nitrogen from the air. But the quality and nature of that CMS is what separates an average system from a superior one.

(1)Defines System Efficiency: A better CMS requires less compressed air to produce the same amount of nitrogen, directly lowering your energy costs.

(2)Determines System Lifespan: A durable CMS withstands millions of pressure cycles without degrading, protecting your investment and ensuring long-term reliability.

(3)Dictates System Size: A more efficient CMS allows for a more compact design, saving you valuable floor space and reducing manufacturing costs.

The NitroQuanta Advantage: A Synergy of Material & Machine



While others assemble, we architect. NitroQuanta is built upon a unique foundation that no other brand can claim. We don't just *use* the core; we are born from it.

- (1) Our team's DNA comes from a deep, generational expertise in manufacturing the Carbon Molecular Sieve itself. We understand its potential at a molecular level.
- (2) We fuse this material science knowledge with decades of proven experience in building robust, reliable PSA systems.
- (3) Every NitroQuanta™ system is designed to create the perfect environment to unlock the absolute maximum performance of our proprietary Fuxing™ CMS core.

Our Story

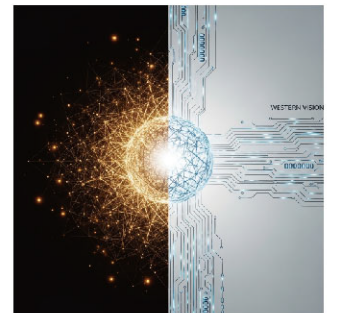
The Vision: A Global Engineering Perspective

This deep material science knowledge was then fused with a global engineering perspective, honed during our founder's six-year educational journey in the United States, culminating in a Master's degree from the University of Maryland. This experience brought a relentless focus on system efficiency, data-driven design, and the uncompromising quality standards demanded by the world's leading industrial markets.



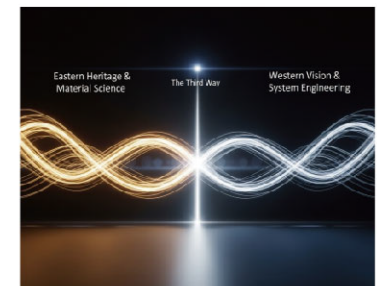
The Synergy: Forging a "Third Way"

Upon returning, our founder saw a frustrating gap in the global market: clients were forced into a painful choice between overpriced European/American brands and low-cost products with inconsistent quality. This became our founding mission. We created NitroQuanta™ to break this old paradigm. We are dedicated to providing a "Third Way": a brand that delivers world-class performance and reliability, but with the agility and intelligence of a modern, globally-integrated supply chain. The result is NitroQuanta™—a partnership forged between the masters of the material "soul" and the masters of the mechanical "body." We exist not just to compete, but to establish a new benchmark defined by "Quality-to-Cost Ratio"—delivering a smarter, more competitive value proposition without ever compromising on quality.



Our Promise to You: The Best of Both Worlds

When you choose NitroQuanta™, you are not simply buying a product. You are investing in a solution where you no longer have to compromise. You get a system where: 1. Eastern expertise in core materials meets Western principles of system engineering. 2. Decades of heritage meet a forward-thinking, global vision. 3. World-class performance meets a smarter, more accessible value. This is the "Third Way." This is our promise.



Who We Are



NitroQuanta™ is a premier brand dedicated to providing high-performance on-site nitrogen systems to global industrial clients. Our unique strength is rooted in a fully integrated value chain, where we fuse our proprietary core material science with world-class system manufacturing. Our brand is built upon two centers of excellence: a National "Specialized, Refined, and Innovative" Enterprise with 15+ years of expertise in Carbon Molecular Sieve (CMS) manufacturing, and a leading ISO-certified manufacturing base with 22+ years of experience, 60+ national patents, and a proven track record as a supplier to Global 500 energy giants.



With over 2,000 systems in reliable operation across 10+ countries, our dedicated force of 100+ professionals is committed to delivering solutions of the highest quality and reliability, backed by a powerful and transparent technology foundation.

Application



The NitroQuanta™ PSA Nitrogen System

Engineered for Unmatched Performance, Built for Absolute Reliability.

Feature: Wide Performance Range

Benefit: Purity up to 99.9999%, Flow up to 5,000 Nm³/h.

Feature: Rapid, On-Demand Nitrogen Supply

Benefit: Reach target purity within 1 hour from a cold start, with 24/7 autonomous operation.

Feature: Proprietary CMS Core Technology

Benefit: Engineered in-house for lower energy costs and a superior operational lifespan.

Feature: Intuitive Smart Control

Benefit: Real-time data & remote access on a HMI.



Flexible Architectures

Integrated Skid-mounted



Containerized



Stand-alone



Flexible Supply Scopes: Get Exactly What You Need

1. Complete "Plug & Gas" System

Includes

- (1) ✓ Air Compressor
- (2) ✓ Air Pre-treatment Package
- (3) ✓ NitroQuanta PSA Generator Core

Best for

New installations or users seeking a single, fully-integrated, and guaranteed solution.

2. Nitrogen Generator Package

- (1) ✓ Air Pre-treatment Package
- (2) ✓ NitroQuanta PSA Generator Core

Best for

Clients who already have a suitable, existing compressed air system.

3. Generator Core Unit

- (1) ✓ NitroQuanta PSA Generator Core

Best for

Facilities with existing, high-quality "instrument air" supply, or system integrators.

Find the Perfect NitroQuanta System for Your Needs

NitroQuanta Prime Series

(For Global Leaders Demanding World-Class Excellence)

The Prime Series is our flagship, engineered to compete head-to-head with the best German and American brands. Every component is selected to meet or exceed the most stringent international standards, such as ASME and CE. Powered by our Fuxing™ Prime series CMS (or optional Japanese CMS) and a Siemens PLC, this series is obsessed with one thing: achieving the absolute lowest nitrogen-to-air ratio and unparalleled reliability. It's the ultimate choice for mission-critical applications.



NitroQuanta Core Series

(The Smart Choice for an Unbeatable Quality-to-Cost Ratio)

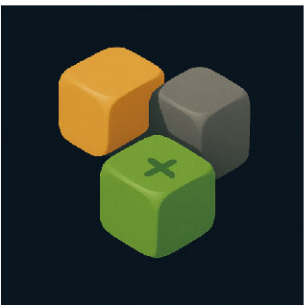
The Core Series embodies our core philosophy of delivering exceptional value. It is built entirely with top-tier components that adhere to stringent Chinese National Standards (GB Standards) and is fully ISO 9001 compliant. Featuring our reliable Fuxing™ Core series CMS and a Siemens PLC control system, this series offers the perfect balance of robust performance and intelligent cost-effectiveness. It is the workhorse of our lineup.



NitroQuanta Core Series

(Custom-Engineered Solutions for Your Unique Challenge)

No two projects are the same. The Flex Series is our platform for co-creating a solution tailored to your specific needs. Whether you require explosion-proof (ATEX) configurations for an oil rig, a fully containerized system for a remote mine, or a high-pressure solution for a special application, our engineering team will work with you to design and build the most suitable and reliable system.



Technical specifications

Reference of Common Models								
Model		Nitrogen Purity						
		97%	98%	99%	99.5%	99.9%	99.99%	99.999%
QCN-10	Nm³/h	23	20	17	15	10	6	4.7
QCN-15	Nm³/h	34	30	25	22	15	9	7
QCN-20	Nm³/h	46	40	34	30	20	12	9.4
QCN-25	Nm³/h	57	50	42	37	25	15	12
QCN-30	Nm³/h	69	60	51	45	30	18	14
QCN-35	Nm³/h	80	70	60	52	35	21	16.5
QCN-40	Nm³/h	92	80	68	60	40	24	19
QCN-50	Nm³/h	115	100	85	75	50	30	23
QCN-60	Nm³/h	138	120	102	90	60	36	28
QCN-70	Nm³/h	161	140	119	105	70	42	33
QCN-80	Nm³/h	184	160	136	120	80	48	37.6
QCN-90	Nm³/h	207	180	153	135	90	54	42.3
QCN-100	Nm³/h	230	200	170	150	100	60	47
QCN-150	Nm³/h	345	300	255	225	150	90	70.5
QCN-200	Nm³/h	460	400	340	300	200	120	94
QCN-300	Nm³/h	690	600	510	450	300	180	141
QCN-400	Nm³/h	920	800	680	600	400	240	188
QCN-500	Nm³/h	1150	1000	850	750	500	300	235
<p>* Other capacities/purity available on request.</p> <p>* Nitrogen production with compressed air input at 7 barg.</p> <p>* Performance stated at standard condition :20°C/101.325kPa.</p> <p>* Purity values are measured in oxygen Content.</p>								

Other Solution&Service

PSA System Maintenance & Performance Upgrades

Our Tiered Support Program: From DIY Guides to Expert Intervention

1.Self-Service Resource : Comprehensive Tutorials

2.Expert Remote Support

✓ Schedule a 1-on-1 Video Call with Our Engineers

✓ Real-time Remote Troubleshooting & Diagnostics

✓ Step-by-Step Guidance for Complex Maintenance Tasks

3.On-site Revitalization Service

✓ Complete System Diagnosis & Overhaul by Certified Engineers

✓ On-site Installation of Core Components & Performance Guarantee



The Heart of the Upgrade: Genuine Fuxing™Core Components

The single most effective way to restore your system's performance is to replace its aging core with a new, high-performance Carbon Molecular Sieve. Our proprietary Fuxing™ CMS is not just a spare part; it's a performance upgrade for most PSA generator brands on the market.

PSA Oxygen System

Membrane Nitrogen System

While NitroQuanta's core expertise lies in high-performance PSA nitrogen technology, we also offer a range of robust and efficient PSA oxygen and Membrane Nitrogen Systems.



封3 空白