Products for Chromatography

Nitrogen Generators with Research Grade Purity

- Produce a continuous supply of high purity nitrogen gas from existing compressed air
- Eliminate the need for costly, dangerous, inconvenient nitrogen cylinders in the laboratory
- Compact design frees up valuable laboratory floor space
- Offers long term cost stability - uncontrollable vendor price increases, contract negotiations, long term commitments and tank rentals are no longer a concern
- Ideal for carrier gas, make-up gas applications

Model UHPN2-1100

The Parker Balston® Models HPN2 and UHPN2 Series Nitrogen Generators are completely engineered to transform standard compressed air into 99.99% or 99.9999% nitrogen, exceeding the specification of UHP cylinder gas. These systems can produce up to 1.1 lpm of UHP nitrogen gas and up to 2.0 lpm of research grade purity nitrogen gas. Nitrogen is produced by utilizing a combination of state-of-the art purification technologies and high efficiency filtration.

Pressure swing adsorption removes O_2, CO_2, and water vapor. A catalyst module is incorporated in the UHPN2 Series to oxidize hydrocarbons from the inlet air supply. High efficiency coalescing prefilters and a 0.01 micron (absolute) membrane filter is also incorporated into the design of the generators.

The Parker Balston UHPN2 and HPN2 Series Nitrogen Generators are engineered and packaged in a small cabinet to fit on or under any bench-top. The systems eliminate the need for costly, inconvenient high pressure nitrogen cylinders.

Typical applications include GC carrier and make-up gas and low flow sample concentrators.

Flow Table

Inlet Air Pressure (psig)	Max Outlet Flow (cc/min.)	Max Outlet Pressure (psig)
Models HPN2-1100 and UHPN2-1100		
125	1100	85
110	1000	75
100	900	65
90	800	60
80	700	50
70	600	45
60	500	35
Model HPN2-2000		
75-120	2000	90

Nitrogen Generators with Research Grade Purity

Principal Specifications

Model	HPN2-1100, UHPN2-1100	HPN2-2000
Max Nitrogen flow rate	See Flow Table	2 lpm
Nitrogen Purity	99.9999%	99.99%
Max Nitrogen output pressure	See Table	90 psig
CO concentration	< 1 ppm	NA
CO_2 concentration	< 1 ppm	< 1 ppm
O_2 concentration	< 1 ppm	< 100 ppm
H_2O Concentration	< 1 ppm	< 2 ppm
Hydrocarbon concentration (1)	< 0.1 ppm	NA
Argon concentration (2)	0.9%	0.9%
Min/Max inlet pressure	60 psig/125 psig	75 psig/120 psig
Recommended inlet temperature	78°F (25°C)	78°F (25°C)
Ambient operating temperature	60°F-100°F (16°C-38°C)	60°F-100°F (16°C-38°C)
Max air consumption	42 lpm (1.5 scfm)	42 lpm (1.5 scfm)
Inlet connection	1/4" NPT (female)	1/4" NPT (female)
Outlet connection	1/8" compression	1/8" NPT compression
Electrical requirements (3, 4)	120 VAC/60 Hz	120 VAC/60 Hz
Dimensions	12" w x 16" d x 35" h (30cm x 41cm x 89cm)	12" w x 16" d x 35" h (30cm x 41cm x 89cm)

Notes:

1 Models HPN2-1100 and HPN2-2000 do not remove hydrocarbons and carbon monoxide.

2 Purity specification for Nitrogen does not include Argon concentration.

3 Power Consumption is as follows: Model HPN2-1100 = 25 Watts, Model UHPN2-1100 = 700 Watts, Model HPN2-2000 = 25 Watts.

4 Refer to voltage appendixfor electrical and plug configurations for outside North America.

Ordering Information call 800-343-4048, 8 to 5 EST

Description	Model Numbers
High Purity Nitrogen Generator	HPN2-2000
Ultra High Purity Nitrogen Generator	HPN2-1100 and UHPN2-1100
Purity Indicator/Scrubber	72092
Optional Prefilter Scrubber Assembly	76080
Pressure Regulator	W-425-4032-000
Maintenance Kit	MK7692, MK7694, MKHPN22000
Installation Kit for All Models	IK7694
Preventive Maintenance Plan	HPN2-1000-PM, UHPN2-1100-PM, HPN2-2000-PM
Extended Support with 24 Month Warranty	HPN2-1100-DN2, UHPN2-1100-DN2, HPN2-2000-DN2

ICP Spectrometer Nitrogen Generator

Products for Spectroscopy

- Produces a continuous supply of ultra high purity nitrogen gas from existing compressed air
- Eliminates the need for costly, dangerous, inconvenient nitrogen cylinders or dewars in the laboratory
- Extends ICP Analysis into far-UV range below 170 (nm)
- Compact design frees up valuable laboratory floor space
- Offers long term cost stability - uncontrollable vendor price increases, contract negotiations, long term commitments and tank rentals are no longer a concern

Model 76-98NA
Nitrogen Generator

The Parker Balston® 76-97NA and 76-98NA UHP Nitrogen Generators can produce 5-12 lpm of ultra high purity nitrogen gas. These systems are completely engineered to transform standard compressed air into 99.9999% of 99.995% pure nitrogen, exceeding the specification of UHP cylinder gas and dewars. Nitrogen is produced by utilizing a combination of state-of-the-art purification technologies and high efficiency filtration. Pressure swing absorption is utilized for the removal of 0_2, CO_2, and water vapor. A catalyst module is incorporated in the 76-98NA to oxidize hydrocarbons from the inlet air supply. The generators also have a combination of high efficiency prefilters and a 0.01 micron (absolute) membrane filter incorporated into their design. The Parker Balston UHP Nitrogen Generators are engineered and packaged in a laboratory cabinet to fit nearly any laboratory. The systems eliminate the needs for costly, inconvenient high pressure nitrogen cylinders or dewars. The 76-97NA and 76-98NA are ideal for ICP Purge gas applications.

Applications

Other applications include high flow GC carrier gas needs, DNA Synthesis and Sequencing Equipment, Mocon Moisture Analyzers, Circular Dichroism and Gel Permeation needs.

Products for Spectroscopy

ICP Spectrometer Nitrogen Generator

Flow Table@ 99.9999% Purity

Inlet Air Pressure (psig) Models 76-97NA and 76-98NA	Max Outlet Flow (lpm)	Max Outlet Pressure (psig)
120	5	83
110	5	73
100	5	63
90	4	62
80	4	51
70	2	50
60	2	42

Flow Table@ 99.995% Purity

Inlet Air Pressure (psig) Models 76-97NA and 76-98NA	Max Outlet Flow (lpm)	Max Outlet Pressure (psig)
120	12	60
110	12	55
100	12	45
90	10	45
80	8	40
70	8	35
60	6	33

Principal Specifications

Model	76-97NA/76-98NA
Nitrogen Purity	99.995% and 99.9999%
Max Nitrogen Output Pressure	See Table
CO Concentration	< 1 ppm
CO_2 Concentration	< 1 ppm
O_2 Concentration	< 1 ppm
H_2O Concentration	< 2 ppm
Hydrocarbon Concentration (1)	< 0.1 ppm
Argon Concentration (2)	0.9%
Min/Max Inlet Pressure	60 psig/120 psig
Recommended Inlet Temperature	78°F (25°C)
Ambient Operating Temperature	60°F-100°F (16°C-38°C)
Average Air Consumption	3.0 scfm
Inlet Connection	1/4" NPT
Outlet Connection	1/8" NPT, convertible to 1/4" NPT
Electrical Requirements (3, 4)	120 VAC/60 Hz
Dimensions	41"h x 25"w x 25"d (104cm x 64cm x 64cm)
Shipping Weight	500 lbs (227 kg)

Ordering Information

Model Numbers	Description
76-97NA and 76-98NA	Ultra High Purity Nitrogen Generator
76-97-PM, 76-98-PM	Preventive Maintenance Plan
76-97-DN2, 76-98-DN2	Extended Support with 24 Month Warranty

Notes:
1 Model 76-97NA does not remove hydrocarbons.

2 Purity specification for Nitrogen does not include Argon concentration.

3 Power Consumption is as follows:
Model 76-97NA = 10 Watts, Model 76-98NA = 1 KW

4 Refer to voltage appendix for electrical and plug configurations for outside North America.

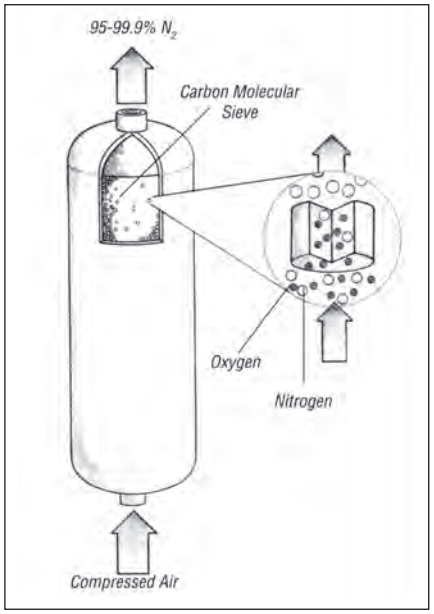
High Flow Nitrogen Generators

- Lower cost...eliminates the need for costly gas cylinders
- Complete package with prefilters, final filters, and receiving tank
- Compact - frees up valuable floor space
- Eliminates unexpected shutdowns due to a “bad” or empty cylinder
- Hassle-free, easy to install, easy to operate
- Safe and reliable

Parker Balston
Dual Bed Nitrogen Generators

Parker Balston® Monobed Nitrogen Generators produce up to 99.95% pure, compressed nitrogen at dew-points to -70°F (-21°C) from nearly any compressed air supply. The generators are designed to continually transform standard compressed air into nitrogen at safe, regulated pressures without operator attention.

Parker Balston PSA Nitrogen Generators utilize a combination of filtration and pressure swing adsorption technologies. High efficiency prefiltration pretreats the compressed air to remove all contaminants down to 0.1 micron. Air entering the generator consists of 21% oxygen and 78% nitrogen. The gas separation process preferentially adsorbs oxygen over nitrogen using carbon molecular sieve (CMS). At high pressures the CMS has a greater affinity for oxygen, carbon dioxide, and water vapor than it does at low pressures. By raising and lowering the pressure within the CMS bed, all contaminants are captured and released, leaving the CMS unchanged. This process allows the nitrogen to pass through as a product gas at pressure. The depressurization phase of the CMS releases the absorbed oxygen and other contaminant gases to the atmosphere.



The Parker Balston PSA Nitrogen Generators completely eliminate the inconvenience and the high costs of nitrogen Dewars and cylinders. There is no need to depend on outside vendors for your nitrogen gas supplies. The hassles of changing dangerous, high pressure cylinders, and interruption of gas supplies are completely eliminated. The Balston PSA Nitrogen Generators offer long term cost stability eliminating uncontrollable vendor price increases, contract negotiations, long term commitments, and tank rentals. Once the generator is installed, a continuous nitrogen supply of consistent purity is available within minutes from start-up.

High Flow Nitrogen Generators

Installation consists of simply connecting a standard compressed air line to the inlet and connecting the outlet to a nitrogen line. Plug the electrical cord into a wall outlet, and the unit is ready for trouble-free operation. This system is designed to operate 24 hours per day, 7 days per week.

Once the system is operating, it requires little monitoring. The only maintenance involves changing the coalescing prefilter cartridges and final sterile air filter periodically. The PSA towers do not require any maintenance.

An oxygen monitor to measure the oxygen concentration of the nitrogen stream is available as an option. An audible alarm signals high or low oxygen concentrations (determined by the application). The oxygen analyzer is supplied with alarm relay outputs which may be used to signal a remote alarm, open a backup supply or the process stream, or close the process flow for protection of downstream equipment or processes.

Principal Specifications

Model	**AGS200, AGS400**
Nominal Conditions	
Feed Pressure	140 psig
Temperature	80°F
Ambient Pressure	1 Atm.
Compressed Air Specifications	
Maximum Pressure	140 psig
Temperature Range	60°F - 105°F
Dewpoint	40°F pressure dewpoint or better
Residual Oil Content	Trace
Particles	<.01 micron
Ambient Conditions	
Temperature	45°F-90°F
Ambient Pressure	Atmospheric
Air Quality	Clean air without contaminants
Dimensions	28.5"L x 32.25"D x 76.25"H
Weight	520 lbs (AGS200), 738 lbs (AGS400)
Inlet	1/2" NPT
Outlet	1/2" NPT

Nitrogen Purity Flow Chart

	Models AGS200 and AGS400	
	Flow Rate (SCFH)	**Flow Rate (SCFH)**
Model	99.9%, 140 psig	99.99%, 140 psig
AGS200	235	47
AGS400	470	94