



Nitrogen Generation Systems

Bulletin N2



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Parker Hannifin Corporation
Filtration and Separation Division
Haverhill, MA



Balston
Membrane Nitrogen Generator

Lower cost...eliminates the need for costly gas cylinders

Complete package with prefilters, carbon filter, and membrane filter

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

No electrical line required

Applications	
Purging or testing of tanks and vessels	Analytical equipment purge
Solvent blanketing	Carburizing, hardening, sintering, annealing
Food processing and packaging	Packaging
Storage of perishables	Chemical transferring
Electronic component manufacture and storage	Sparging and mixing

Advantages of Balston® Nitrogen Generators

Balston Membrane Nitrogen Generators produce up to 99.5% pure, commercially sterile nitrogen at dewpoints to -58°F (-50°C) from a compressed air supply. All Membrane Nitrogen Generators include a 0.01 micron membrane filter which ensures the nitrogen is completely free of suspended impurities. For applications requiring monitoring and controlling, models HFXO Series and all Nitrosource NS Series include an oxygen monitor which offers LED readouts and remote alarm or chart recorder capabilities. An audible alarm signals high or low oxygen concentrations (determined by the application). The oxygen monitor 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.



**HFX Series
High Flow Nitrogen
Membrane Generator**



**Nitrosource Series
Modular Nitrogen
Membrane Generator**



Proven Technology

Balston Membrane Nitrogen Generators produce up to 99.5% pure, commercially sterile nitrogen at dewpoints to -58°F (-50°C) from a compressed air supply. All Membrane Nitrogen Generators include a 0.01 micron membrane filter which ensures the nitrogen is completely free of suspended impurities. For applications requiring monitoring and controlling, Parker Hannifin offers systems which include oxygen monitors.

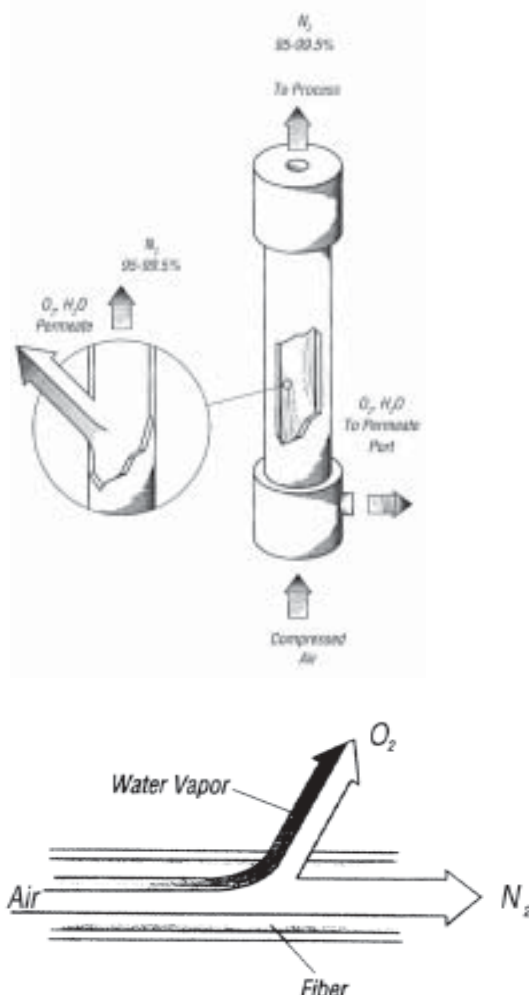
Balston Nitrogen Generators are one of the most efficient membrane systems available with higher recovery rates and lower operating costs than many other membrane systems.

Balston Nitrogen Generators utilize proprietary membrane separation technology. The membrane divides the air into two streams: one is 95%-99.5% pure nitrogen, and the other is oxygen-rich with carbon dioxide and other trace gases.

The generator separates air into its component gases by passing inexpensive, conventional compressed air through bundles of individual hollow fiber, semi-permeable membranes. Each fiber has a perfectly circular cross section and a uniform bore through its center. Because the fibers are so small, a great many can be packed into a limited space, providing an extremely large membrane surface area that can produce a relatively high volume product stream.

Compressed air is introduced to the center of the fibers at one end of the module and contacts the membrane as it flows through the fiber bores. While oxygen, water vapor and other trace gases permeate the membrane fiber and are discharged through a permeate port, the nitrogen is contained within the hollow fiber membrane, and flows through the outlet port of the module.

Water vapor also permeates through the membrane; therefore, the nitrogen product gas is very dry.



While "fast gases" like oxygen, carbon dioxide, and water vapor quickly permeate the membrane, most of the nitrogen flows along the membrane fiber as a separate product stream.





Savings And Convenience

The Balston Membrane 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 nitrogen gas supplies. The hassles of changing dangerous, high pressure cylinders and interruption of gas supplies are completely eliminated. The Balston Systems offer long term cost stability by eliminating uncontrollable vendor price increases, contract negotiation, 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.

The Balston Nitrogen Generators are complete systems ready to operate as delivered with carefully matched components engineered for easy installation, operation and long term reliability. The generators are free-standing and housed in an attractive cabinet. Standard features include: high efficiency coalescing prefilters with automatic drains, an activated carbon filter, and a 0.01 micron membrane final filter. Installation consists of simply connecting a standard compressed air line to the inlet and connecting the outlet to a nitrogen line. The membrane systems offer the advantages of no moving parts and no electrical requirements.⁽¹⁾

There is no complicated operating procedure to learn or labor intensive monitoring involved. Simply select the purity your process requires, set the flow and pressure, and within minutes high purity, dry nitrogen is available for use!

Once the system is operating, it requires little monitoring. The only maintenance involves changing the coalescing filter cartridges and activated carbon filter periodically. This is a simple ten minute procedure.

The Balston HFXO Series include an oxygen monitor which offers LED readouts and remote alarm or chart recorder capabilities. An audible alarm signals high or low oxygen concentrations (determined by the application). The oxygen monitor 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.

Notes:

1 No electrical power required unless used with an accessory such as an oxygen monitor.

Advantages

- Lower cost...eliminates the need for costly gas cylinders
- Complete package with prefilters, carbon filter, and membrane filter
- 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
- No electrical line required⁽¹⁾

Custom Systems Available

- Flow rates to 9200 SCFH
- Delivery pressures to customer's specifications
- Skid mounted systems with compressor, receiving tank and controls are available

Flow Rates (SCFH) @ 100 psig @ 68°F							Pressure Correction Factors (at Indicated Operating Pressure (PSIG))									
Model	95	96	97	98	99	99.5	58	73	87	101	116	130	145	160	174	190
HFX Series Nitrogen Generators																
HFX-1	40	33	26	16	10		.52	.65	.86	1	1.15	1.35	1.44	---	---	---
HFX-3	148	120	95	70	49		.54	.68	.85	1	1.14	1.3	1.43	---	---	---
HFX-5	279	229	176	131	88		.52	.65	.85	1	1.14	1.34	1.43	---	---	---
HFX-7	452	360	283	209	140		.53	.66	.86	1	1.14	1.32	1.43	---	---	---
HFX-9	752	600	452	330	236		.44	.65	.85	1	1.1	1.3	1.4	---	---	---
HFX-11	1201	992	780	572	388		.44	.65	.85	1	1.2	1.4	1.6	---	---	---
Nitrosorce Series Nitrogen Generators																
Main-Unit 159.003552	1200.7	990.6	780.5	570.4	330	210	.35	.51	.76	1	1.2	1.4	1.6	1.9	2.1	2.4
NS-1	2401.5	1981.2	1561	1140.7	660	420	.35	.51	.76	1	1.2	1.4	1.6	1.9	2.1	2.4
NS-2	3602.2	2971.8	2341.5	1711.1	990	630	.35	.51	.76	1	1.2	1.4	1.6	1.9	2.1	2.4
NS-3	4803	3962.5	3121.9	2281.4	1320	840	.35	.51	.76	1	1.2	1.4	1.6	1.9	2.1	2.4
NS-4	6003.7	4953.1	3902.4	2851.8	1650	1050	.35	.51	.76	1	1.2	1.4	1.6	1.9	2.1	2.4
NS-5	7204.5	5943.7	4682.9	3422.1	1980	1260	.35	.51	.76	1	1.2	1.4	1.6	1.9	2.1	2.4

Principal Specifications - HFX Series Membrane Nitrogen Generators Models HFX1, HFX-3, HFX-5, HFX-7, HFX-9, HFX-11				
Model Number	HFX-1, HFX0-1	HFX-3, HFX0-3	HFX-5, HFX0-5	HFX-7, HFX0-7, HFX-9, HFX0-9, HFX-11, HFX0-11
Atmospheric Dewpoint	-58°F (-50°C)	-58°F (-50°C)	-58°F (-50°C)	-58°F (-50°C)
Commercially Sterile	Yes	Yes	Yes	Yes
Particles > 0.01 micron	None	None	None	None
Suspended Liquids	None	None	None	None
Min/Max Operating Press.(1)	60 psig/145 psig	60 psig/145 psig	60 psig/145 psig	60 psig/145 psig
Max. Press. Drop (at 95% N ₂ , 125 psig)	10 psig	10 psig	10 psig	10 psig
Recommended Ambient Operating Temperature	60°F/110°F (16°C/43°C)	77°F (25°C)	77°F (25°C)	- 77°F (25°C)
Min/Max Inlet Air Temp.	60°F/110°F (2°C/40°C)	40°F/140°F (2°C/40°C)	40°F/140°F (4°C/60°C)	40°F/140°F (4°C/60°C)
Recommended Inlet Air Temperature	68°F (20°C)	77°F (25°C)	77°F (25°C)	77°F (25°C)
Electrical Requirements (2)	None (2)	None (2)	None (2)	None (2)
Dimensions	16.3"h x 12.8"w x 7.5"d (41/4cmx32/5cmx19.1cm)	16"w x 16"d x 50"h (41cmX25cmX91cm)	16"w x 16"d x 50"h (41cmX25cmX91cm)	24"w x 20"d x 69"h (61cmX51cmX175cm)
Shipping Wt.	38 lbs. (17.3 kg)	75 lbs. (34 kg)	106 lbs. (114 kg)	250 lbs. (114 kg)

Notes:
 1 Maximum operating pressure in Europe is 8 barg. 2 No electrical power required unless used with an electrical accessory, e.g., an oxygen analyzer.

Ordering Information - Models HFX1, HFX-3, HFX-5, HFX-9, HFX-11							
For assistance, call toll-free at 1-800-343-4048 8AM to 5PM Eastern Time							
Model	Maintenance Kit	Maintenance Kit w/O2 Monitor	Maintenance Kit Components			Final Membrane Filter	Activated Carbon Filter
			Replacement Filter Cartridges 1st stage	Replacement Filter Cartridges 2nd stage	Replacement Filter Cartridges 3rd stage		
HFX-1, HFX0-1 (w/O2 monitor)	MK75005	MK750050	100-12-DXE	100-12-BXE	---	9933-05-95	1/7825-08-000
HFX-3, HFX0-3 (w/O2 monitor)	MK7579C	MK75790C	100-12-DXE	100-12-BXE	---	GS-100-12-95	75620
HFX-5, HFX0-5 (w/O2 monitor)	MK7579C	MK75790C	100-12-DXE	100-12-BXE	---	GS-100-12-95	75620
HFX-7, HFX0-7 (w/O2 monitor)	MK7576	MK76760	100-18-DXE	100-18-BXE	100-25-BXE	GS-100-25-95	75303
HFX-9, HFX0-9 (w/O2 monitor)	MK7576	MK75760	100-18-DXE	100-18-BXE	100-25-BXE	GS-100-25-95	75303
HFX-11, HFX0-11 (w/O2 monitor)	MK7576	MK76760	100-18-DXE	100-18-BXE	100-25-BXE	GS-100-25-95	75303



Principal Specifications - Nitrosource Series Membrane Nitrogen Generators - Models NS-1, NS-2, NS-3

Model Number	Main Unit	NS-1	NS-2
Atmospheric Dewpoint	-58°F (-50°C)	-58°F (-50°C)	-58°F (-50°C)
Commercially Sterile	Yes	Yes	Yes
Particles > 0.01 micron	None	None	None
Suspended Liquids	None	None	None
Min/Max Operating Pressure (1)	60 psig/145 psig	60 psig/145 psig	60 psig/145 psig
Max. Pressure Drop	15 psig	15 psig	15 psig
Recommended Ambient			
Operating Temp.	70°F (21°C)	70°F (21°C)	70°F (21°C)
Min/Max Inlet Air Temp.	50°F/104°F (10°C/40°C)	50°F/104°F (10°C/40°C)	50°F/104°F (10°C/40°C)
Recommended Inlet Air Temp.	70°F (21°C)	70°F (21°C)	70°F (21°C)
Electrical Requirements (2)	90-250 VAC 50-60 Hz	90-250 VAC 50-60 Hz	90-250 VAC 50-60 Hz
Dimensions	29"w x 20"d x 76"h (74cmX107cmX193cm)	29"w x 31"d x 76"h (74cmX51cmX193cm)	29"w x 42"d x 76"h (74cmX79cmX193cm)
Shipping Wt.	450 lbs.	660 lbs.	870 lbs.

Principal Specifications - Nitrosource Series Membrane Nitrogen Generators - Models NS-4, NS-5, Main Unit

Model Number	NS-3	NS-4	NS-5
Atmospheric Dewpoint	-58°F (-50°C)	-58°F (-50°C)	-58°F (-50°C)
Commercially Sterile	Yes	Yes	Yes
Particles > 0.01 micron	None	None	None
Suspended Liquids	None	None	None
Min/Max Operating Pressure (1)	60 psig/145 psig	60 psig/145 psig	60 psig/145 psig
Max. Pressure Drop	15 psig	15 psig	15 psig
Recommended Ambient			
Operating Temp.	70°F (21°C)	70°F (21°C)	70°F (21°C)
Min/Max Inlet Air Temp.	50°F/104°F (10°C/40°C)	50°F/104°F (10°C/40°C)	50°F/104°F (10°C/40°C)
Recommended Inlet Air Temp.	70°F (21°C)	70°F (21°C)	70°F (21°C)
Electrical Requirements	90-250 VAC 50-60 Hz	90-250 VAC 50-60 Hz	90-250 VAC 50-60 Hz
Dimensions	29"w x 53"d x 76"h (74cmX107cmX193cm)	29"w x 64"d x 76"h (74cmX51cmX193cm)	29"w x 75"d x 76"h (74cmX79cmX193cm)
Shipping Wt.	1290 lbs.	1500 lbs.	1710 lbs.

Notes:

1 For temperatures less than 68°F (20°C) or pressures less than 60 psig, consult factory for flows.

Ordering Information - All Nitrosource Series Models

For assistance, call toll-free at 1-800-343-4048 8AM to 5PM Eastern Time

Description	Model #	Maintenance Kit #	O2 Sensor
Main Unit	159.003552	159.003569	2284
Sub Unit	159.003553	159.003570	
Main Unit	NS-1	159.003569	2284
Sub Unit		159.003570	
Main Unit	NS-2	159.003569	2284
2 Sub Unit		159.003570x2	
Main Unit	NS-3	159.003569	2284
3 Sub Unit		159.003570x3	
Main Unit	NS-4	159.003569	2284
4 Sub Unit		159.003570x4	
Main Unit	NS-5	159.003569	2284
5 Sub Unit		159.003570x5	

Sample: NS-2 Generator Requires 1 each 159.003569 and 2 each 159.003570



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

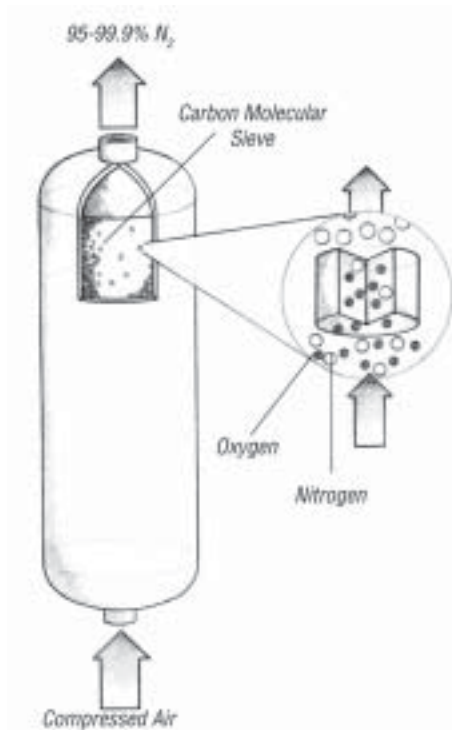
Safe and reliable

Proven Technology

Balston Monobed and Dual Bed Nitrogen Generators produce up to 99.99% pure, compressed nitrogen at dewpoints 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.

How the Technology Works

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.



Pressure swing adsorption gas separation process preferentially adsorbs oxygen over nitrogen using carbon molecular sieve (CMS).



Applications

Solder Reflow Ovens
 Food Processing and Packaging
 Electronic Component Storage and Manufacture
 Heat Treating
 Degassing Aluminum
 Plastic Extrusion and Molding
 Gas Assist
 Laser Cutting

Savings and Convenience

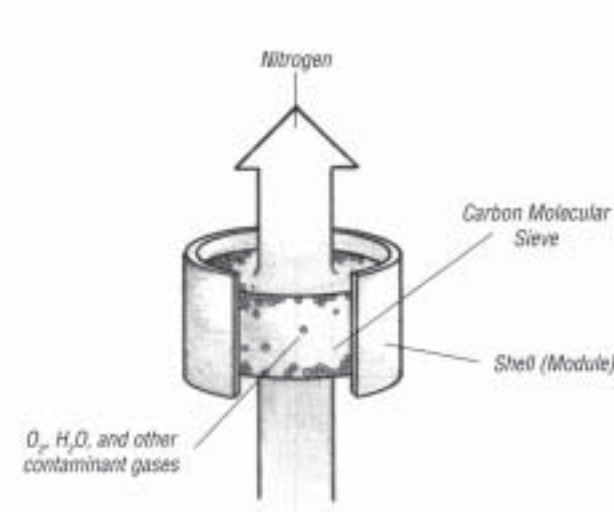
The Balston PSA Nitrogen Generators completely eliminate the inconvenience and the high costs of nitrogen Dewars, bulk nitrogen supplies, and cylinders. There is no need to depend on outside vendors for your nitrogen gas supplies. The hassles of changing dangerous, high pressure cylinders, and interruption 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.

Easy to Operate and Maintain

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 - Monobed Nitrogen Generators Models MB-200, MB-400, MB-600, MB-800, MB-1000

Model Number	MB-200	MB-400	MB-600	MB-800	MB-1000
Atmospheric Dewpoint	-70°F (-21°C)				
Commercially Sterile	Yes				
Particles > 0.01 micron	None				
Suspended Liquids	None				
Recommended Inlet Pressure	110 psig (7.6 barg)				
Min/Max Ambient Temperature	40°F/95°F (4°C/35°C)				
Inlet Port Size	3/4" NPT (female)	3/4" NPT (female)	1 1/2" NPT (female)	1 1/2" NPT (female)	1 1/2" NPT (female)
Outlet Port Size	1/4" NPT (female)	1/4" NPT (female)	1/2" NPT (female)	1/2" NPT (female)	1" NPT (female)
Electrical Requirements	120VAC/60 Hz				
Dimensions	56"w x 36"d x 87"h 143cmx92cmx214cm	56"w x 42"d x 89"h 143cmx107cmx226cm	78"w x 48"d x 102"h 198cmx122cmx260cm	78"w x 48"d x 103"h 198cmx122cmx262cm	84"w x 60"d x 114"h 214cmx153cmx290cm
Shipping Wt.	1100 lbs. (500 kg)	1800 lbs. (818 kg)	2100lbs. (955 kg)	2300lbs. (1045 kg)	4500 lbs. (2045 kg)

Ordering Information - Monobed Nitrogen Generators Models MB-200, MB-400, MB-600, MB-800, MB-1000

For assistance, call toll-free at 1-800-343-4048 8AM to 5PM Eastern Time

Model	MB-200	MB-400	MB-600	MB-800	MB-1000
Prefilter Cartridges, 1st Stage	150-19-DXE	150-19-DXE	150-19-DXE	200-35-DXE	200-80-DXE
Prefilter Cartridges, 2nd Stage	150-19-BXE	150-19-BXE	150-19-BXE	200-35-BXE	200-80-BXE
Final Sterile Air Filter	100-25-SA	100-25-SA	100-25-SA	150-19-SA	150-19-SA
Oxygen monitor (Opt.)	72-730				
Back Pressure Controller (Opt.) (1)	72-460				

Nitrogen Purity Flow Chart - Monobed Nitrogen Generators Models MB-200, MB-400, MB-600, MB-800, MB-1000

Maximum Outlet Pressure (psig)					
Purity %N2	MB-200	MB-400	MB-600	MB-800	MB-1000
95	30	30	30	30	30
96	40	40	40	40	40
97	50	50	50	50	50
98	60	60	65	60	60
99	65	65	70	65	65
99.5	70	70	70	70	70
99.9	75	75	80	75	75
99.95	80	80	80	80	80

Flow Rate (SCFH)					
Purity %N2	MB-200	MB-400	MB-600	MB-800	MB-1000
95	433	880	1310	1760	2162
96	400	815	1200	1630	2000
97	361	735	1090	1470	1802
98	311	630	940	1260	1555
99	241	490	730	980	1205
99.5	200	400	600	800	1000
99.9	135	245	374	490	619
99.95	98	200	269	361	451

Notes

1 The 72-460 is an optional accessory which will maintain a constant pressure drop across the flow control valve, thereby providing a constant nitrogen purity.



Principal Specifications - Models DB-5 and DB-10	
Model Number	DB-5, DB-10
Nominal Conditions	
Feed Pressure	110 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, Weight and Connections	
Dimensions	28.5"L x 32.25"D x 76.25"H
Weight	520 lbs (DB-5), 738 lbs (DB-10)
Inlet	1/2" NPT
Outlet	1/2" NPT

Performance Data - Model DB-5	
% Nitrogen	Nitrogen Flow (SCFH)
99.99	47
99.95	118
99.9	155
99.5	250
99	400
98	497
97	600
96	670
95	754

Performance Data - Model DB-10	
% Nitrogen	Nitrogen Flow (SCFH)
99.99	94
99.95	236
99.9	310
99.5	500
99	800
98	994
97	1200
96	1340
95	1508

Outlet Pressure - Models DB-5 and DB-10	
Based on nominal conditions and standard 20 gallon nitrogen tank	
Flow (47 - 380 scfh)	80 psig
Flow (450 - 575 scfh)	75 psig

Ordering Information - Models DB5 and DB-10		
For assistance, call toll free at 800-343-4048, 8AM to 5PM EST		
Balston Dual Bed Nitrogen Generator with Oxygen Analyzer	DB0-5	DB0-10
Balston Dual Bed Nitrogen Generator without Oxygen Analyzer	DB-5	DB-10
Maintenance Kit for Nitrogen Generator with Oxygen Analyzer	MKDB0-5	MKDB0-5
Maintenance Kit for Nitrogen Generator without Oxygen Analyzer	MKDB5	MKDB5
Oxygen Sensor	72730	72730

Principal Specifications - Models DB-1200, DB-1600, and DB-1900

Dual Bed Nitrogen Generator	DB-1200	DB-1600	DB-1900
Atmospheric Dewpoint	-70°F (-21°C)	-70°F (-21°C)	-70°F (-21°C)
Particles > .1 micron	None	None	None
Suspended Liquids	None	None	None
Recommended Inlet Pressure	110 psig (7.6 barg)	110 psig (7.6 barg)	110 psig (7.6 barg)
Min/Max Ambient Temperature	40°F/95°F (4°C/35°C)	40°F/95°F (4°C/35°C)	40°F/95°F (4°C/35°C)
Inlet Port Size	1-1/2" Flange 150# Rated	1-1/2" Flange 150# Rated	2" Flange 150# Rated
Outlet Port Size	1" Flange 150# Rated	1" Flange 150# Rated	1-1/2" Flange 150# Rated
Electrical Requirements	120VAC/60 Hz	120VAC/60 Hz	120VAC/60 Hz
Dimensions	84"w x 60"d x 102"h (214cm x 153cm x 259cm)	84"w x 60"d x 123"h (214cm x 153cm x 313cm)	96"w x 72"d x 108"h (244cm x 183cm x 275cm)
Shipping Wt.	3,800 lbs. (1,724 kg)	3,800 lbs. (1,724 kg)	3,800 lbs. (1,724 kg)

How To Order - Models DB-1200, DB-1600, and DB-1900

For assistance, call toll-free at 1-800-343-4048 8AM to 5PM Eastern Time

Dual Bed Nitrogen Generator	DB-1200	DB-1600	DB-1900
Prefilter Cartridges, 1st Stage	200-35-DX	200-35-DX	200-80-DX
Prefilter Cartridges, 2nd Stage	200-35-BX	200-35-BX	200-80-BX
Additional Prefilter Cartridges	200-35-DX	200-35-DX	200-80-DX
Final Air Filter	100-18-DX	150-19-DX	150-19-DX
Oxygen Monitor	72-730 (Standard) or 3290 (Optional: High Purity)	72-730 (Standard) or 3290 (Optional: High Purity)	72-730 (Standard) or 3290 (Optional: High Purity)

Nitrogen Purity Flow Chart - Dual Bed Nitrogen Generators Models DB-1200, DB-1600, and DB-1900

Maximum Outlet Pressure (psig)

Purity %N ₂	DB-1200	DB-1600	DB-1900
95	80	80	80
97	80	80	80
98	80	80	80
99	80	80	80
99.5	80	80	80
99.9	80	80	80
99.95	80	80	80
99.99	80	80	80

Flow Rate (SCFH)

Purity %N ₂	DB-1200	DB-1600	DB-1900
95	2,850	3,845	4,516
97	2,200	2,975	3,394
98	1,894	2,555	3,000
99	1,490	2,010	2,360
99.5	1,200	1,600	1,900
99.9	736	992	1,178
99.95	532	714	852
99.99	284	378	452

Principal Specifications - Dual Bed Nitrogen Generators Models DB-2500 and DB-4000

Dual Bed Nitrogen Generator	DB-2500	DB-4000
Atmospheric Dewpoint	-70°F (-21°C)	-70°F (-21°C)
Particles > .1 micron	None	None
Suspended Liquids	None	None
Recommended Inlet Pressure	110 psig (7.6 barg)	110 psig (7.6 barg)
Min/Max Ambient Temperature	40°F/95°F (4°C/35°C)	40°F/95°F (4°C/35°C)
Inlet Port Size	3" Flange 150# Rated	3" Flange 150# Rated
Outlet Port Size	1-1/2" Flange 150# Rated	1-1/2" Flange 150# Rated
Electrical Requirements	120VAC/60 Hz	120VAC/60 Hz
Dimensions	96"w x 72"d x 132"h (244cm x 183cm x 336cm)	108"w x 72"d x 138"h (275cm x 183cm x 351cm)
Shipping Wt.	4,300 lbs. (1,951 kg)	5,300 lbs. (2,404 kg)

How To Order - Dual Bed Nitrogen Generators Models DB-2500 and DB-4000

For assistance, call toll-free at 1-800-343-4048 8AM to 5PM Eastern Time

Dual Bed Nitrogen Generator	DB-2500	DB-4000
Prefilter Cartridges, 1st Stage	200-80-DX	200-80-DX
Prefilter Cartridges, 2nd Stage	200-80-BX	200-80-BX
Additional Prefilter Cartridges	200-80-DX	200-80-DX
Final Air Filter	200-35-DX	200-35-DX
Oxygen Monitor	72-730 (Standard) or 3290 (Optional: High Purity)	72-730 (Standard) or 3290 (Optional: High Purity)

Nitrogen Purity Flow Chart - Dual Bed Nitrogen Generators Models DB-2500 and DB-4000

Maximum Outlet Pressure (psig)		
Purity %N2	DB-2500	DB-4000
95	80	80
97	80	80
98	80	80
99	80	80
99.5	80	80
99.9	80	80
99.95	80	80
99.99	80	80

Flow Rate (SCFH)		
Purity %N2	DB-2500	DB-4000
95	6,022	9,618
97	4,659	7,442
98	4,000	6,388
99	3,148	5,028
99.5	2,500	4,000
99.9	1,571	2,480
99.95	1,136	1,769
99.99	602	943





Parker Hannifin Corporation
 Filtration and Separation Division
 242 Neck Road, P.O. Box 8223
 Haverhill, MA 01835-0723
 Phone: 800-343-4048 or 978-858-0505
 Fax: 978-858-0625
<http://www.parker.com/balston>

Parker Hannifin Corporation

About Parker Hannifin Corporation

Parker Hannifin is a leading global motion-control company dedicated to delivering premier customer service. A Fortune 500 corporation listed on the New York Stock Exchange (PH), our components and systems comprise over 1,400 product lines that control motion in some 1,000 industrial and aerospace markets. Parker is the only manufacturer to offer its customers a choice of hydraulic, pneumatic, and electromechanical motion-control solutions. Our Company has the largest distribution network in its field, with over 7,500 distributors serving nearly 400,000 customers worldwide.

Parker's Charter

To be a leading worldwide manufacturer of components and systems for the builders and users of durable goods. More specifically, we will design, market and manufacture products controlling motion, flow and pressure. We will achieve profitable growth through premier customer service.

Product Information

North American customers seeking product information for Balston products, the location of local sales offices or repair services will receive prompt attention by calling the Filtration and Separation Division at our toll-free number: 1-800-343-4048. For all other product information call 1-800-C-PARKER (1-800-272-7537).

The Aerospace Group is a leader in the development, design, manufacture and servicing of control systems and components for aerospace and related high-technology markets, while achieving growth through premier customer service.



The Climate & Industrial Controls Group designs, manufactures and markets system-control and fluid-handling components and systems to refrigeration, air-conditioning and industrial customers worldwide.



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The Hydraulics Group designs, produces and markets a full spectrum of hydraulic components and systems to builders and users of industrial and mobile machinery and equipment.



The Filtration Group designs, manufactures and markets quality filtration and clarification products, providing customers with the best value, quality, technical support, and global availability.



The Automation Group is a leading supplier of pneumatic and electromechanical components and systems to automator customers worldwide.



The Instrumentation Group is a global leader in the design, manufacture and distribution of high-quality critical flow components for worldwide process instrumentation, ultra-high-purity, medical and analytical applications.



Filtration Group Technical Sales & Service Locations

Filtration Group North America

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Haverhill, MA
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Oxford, MI
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Phone: (209) 521-7860
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In Europe, 00800-2727-5374
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www.parker.com/balston

Parker Worldwide Sales Offices

Contact Parker's worldwide service and distribution network by calling:

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Note: The (+) sign in front of the country code indicates that you may need to dial an additional prefix.



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