Mono-Bed (MB) Series PSA Nitrogen Gas Generation Systems

PSA Nitrogen Generators

Nitrogen is used as a clean, dry, inert gas primarily for removing oxygen from products and/or production processes. Nitrogen gas is used in a wide range of industries including food, beverage, pharmaceutical, laboratory, chemical, heat treatment, electronics, transportation, oil & gas, mining and marine.

Nitrogen generators offer a cost effective, reliable, and safe alternative to traditional cylinder or liquid nitrogen gas supplies. Using a supply of clean, dry compressed air, nitrogen generators can provide an on-demand, continuous source of high-quality nitrogen gas.

Pressure Swing Adsorption (PSA) technology uses 2 sets of vessels filled with carbon molecular sieve (CMS) to separate compressed air. Oxygen and other waste gases are selectively adsorbed under pressure by the CMS, allowing nitrogen to pass through to the application.

The CMS is regenerated by releasing the pressure in one the vessels and venting the waste gases to atmosphere, while the other vessel(s) continues to separate air and deliver a continuous supply of nitrogen.

Parker's MB Series is a range of industrial PSA nitrogen generators take a supply of compressed air and deliver nitrogen with purities up to 99.99% at dewpoints down to -58°F (-50°C). This unique design is tailored to applications that require medium to high nitrogen purity at lower flow rates.

Advantages

- Compact, portable design maximizes floor space.
- Hassle-free design: easy to install, easy to operate.
- Continuous, on-demand supply of nitrogen with purities ranging from 95 to 99.99%.
- High efficiency pre-filtration removes inlet air particles down to 0.1 micron.
- SS sterile air final filter provides outlet filtration efficiency of 99.9999+% at 0.01um and has full compliance with FDA and USDA requirements.
- Includes nitrogen flow meter, outlet pressure regulator, 60-gallon buffer tank, and an oxygen analyzer with display as standard.
- Optional Stand-By Mode saves energy during periods of low demand.
- Purity can be easily adjusted and set on-site.
- Improves safety, reliability, and lowers operating costs versus traditional cylinder or liquid nitrogen gas supplies.
- Expendable design allows for future N2 flow expansion.

Parker

ENGINEERING YOUR SUCCESS.

Product Selection

Series		-	Model		-	O2 Analyzer		Example: MB-3-PCT
MB	Mono-Bed		1	See Product Selection below for flow rates		PCT	Purities between 95-99.9%	
			2			PPM	Purities between 99.95-99.99%	
			3					

Nitrogen Flow Rates in SCFH (Nm^3/hr)

N2 Purity	99.99%	99.95%	99.9%	99.5%	99%	98%	97%	96%	95%
O2 Content	100 ppm	500 ppm	0.10%	0.50%	1%	2%	3%	4%	6%
MB-1-[*]	37 (1.1)	56 (1.6)	76 (2.2)	99 (2.8)	109 (3.1)	135 (3.8)	154 (4.4)	174 (4.9)	194 (5.5)
MB-3-[*]	74 (2.1)	110 (3.1)	152 (4.3)	197 (5.6)	218 (6.2)	270 (7.6)	309 (8.7)	349 (9.9)	388 (11.0)
MB-5-[*]	112 (3.2)	165 (4.7)	228 (6.5)	296 (8.4)	327 (9.3)	405 (11.5)	463 (13.1)	523 (14.8)	583 (16.5)

1. Flow Rates based on inlet of 110 psi g (7.6 bar g) and 77°F (25°C). Nitrogen generator purity is pressure, temperature, and flow dependent.
2. Higher flow and purities can be accomplished at higher pressures. Consult factory for assistance with sizing.

Technical Specifications

Model Number[1]	Min. Ambient Temperature	Max. Ambient Temperature	Min. Inlet Temperature	Max. Inlet Temperature	Min. Inlet Pressure	Max. Inlet Pressure	N2 Outlet Pressure[2]	Nitrogen Dewpoint	Power Supply
MB-1-[*]	40°F (5°C)	95°F (35°C)	60°F (16°C)	105°F (40°C)	80 psi g (5.5 bar g)	140 psi g (9.7 bar g)	80 psi g (5.5 bar g)	-58°F (-50°C)	120V-1Ph-60Hz 180 Watts
MB-3-[*]									
MB-5-[*]									

1. Replace [*] with “PCT” for percent analyzer (purities 95-99.9%) or “PPM” for parts per million analyzer (purities 99.95-99.99%).
2. Outlet pressure based on operating parameters of 110 psig inlet and 96-99.99% purity. Pressure to be 5-10 psig lower when operating at < 95% purity.

Weights and Dimensions

Model Number	Dimensions (W x D x H)	Shipping Weight	Buffer Tank (D x H)	Buffer Tank Volume	Inlet / Outlet Port Size
MB-1-[*]	29" x 27" x 77" (74 cm x 69 cm x 196 cm)	724 lb (328 kg)	24" x 53" (61 cm x 135 cm)	60 gal. (277 liters)	1/2” NPT
MB-3-[*]		766 lb (347 kg)			
MB-5-[*]		835 lb (379 kg)			

1. Weights and dimensions shown for all models are approximate. Parker reserves the right to make changes without notification. Consult factory for general arrangement drawings.