

# Nitrogen PSA Generators NITROSWING® NS-1900



## Typical Applications

- Blanketing of Chemicals and Pharmaceuticals
- Gas Assisted Injection Molding (GAIM)
- Heat Treatment of Ferrous & Non-Ferrous Metals
- Inerting of Flammable Liquids
- Laser Cutting
- Prevention of Dust Explosions
- Re-flow and Wave Soldering of PCBs
- UV-Curing of Coatings

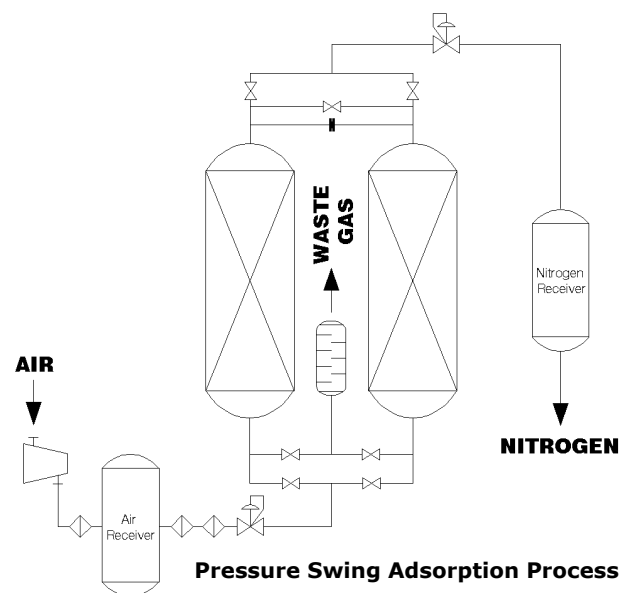
## Advantages of NITROSWING® PSA's

- **Safety:** Low Operating Pressures, no Hazardous Storage
- **Economy:** Low Operating Cost, Easily Expandable
- **Convenience:** Fully Automatic and Unattended Operation
- **Reliability:** Easy to Install and Maintain

## The Nitrogen Production Process

IGS Nitrogen PSA Generators separate nitrogen (N<sub>2</sub>) from compressed air utilizing pressure swing adsorption technology. Compressed air, which consists of approximately 21% oxygen and 78% nitrogen, is passed through a bed of carbon molecular sieve (CMS). The sieve preferentially adsorbs O<sub>2</sub> and moisture over N<sub>2</sub> allowing the N<sub>2</sub> to pass through as a product gas at pressure. While one of the towers is in the adsorption phase the other tower is regenerated by de-pressurizing at which time the sieve releases the adsorbed gases to the atmosphere and the cycle is then repeated.

A solid state programmable controller operates the process valves on an alternating cycle with built-in logic for automatic stop/start. Nitrogen flow and purity remain constant regardless of the peak usage demands. Under normal operating conditions and with correct maintenance the carbon molecular sieve will have an almost indefinite lifetime.



### Standard Components

- Air Filters
- Adsorber Vessels
- Pneumatic Valves
- Piping and Instrumentation
- Safety Valve
- Exhaust Muffler
- Nitrogen Pressure and Flow Regulator
- Control System with Allen-Bradley PLC
- Skid Mounted
- Pressure Switch for automated Idle-Mode
- Hour Meter

### Options

- Oxygen Analyzer (Zirconium Oxide type)
- Dew Point Analyzer
- Product Flow Meter
- Fail Safe Package (off-spec nitrogen automatically vented to atmosphere\*)
- Enhanced PLC with Telemetry
- Purities to 99.9999% with a De-Oxo System
- Feed Air Compressor
- Product Booster Compressor
- Monitor Package (with indication of Feed Air and Product Pressures and Temperatures, Oxygen Concentration and Product Flow on AB PanelView\*\*)
- Air Receiver Tank
- Nitrogen Buffer Tank
- Bottle Filling Station

\* Only in combination with Oxygen Analyzer Option  
\*\* Includes Oxygen Analyzer and Flow Meter

## NITROSWING NS-1900L Series Specifications & Performance

Standard	SI 7.5 Bar(g) feed pressure and 21° C					US 109 PSIG feed Pressure and 70° F				
Oxygen %	Nitrogen Nm <sup>3</sup> /h	Nitrogen Pressure Bar (g)	Feed Air Nm <sup>3</sup> /h	Air Receiver Liters <sup>(3)</sup>	Nitrogen Receiver Liters <sup>(3)</sup>	Nitrogen SCFH	Nitrogen Pressure PSIG	Feed Air SCFH	Air Receiver Gallons <sup>(3)</sup>	Nitrogen Receiver Gallons <sup>(3)</sup>
3	3,262	5.5	6,560	22,730	*	115,208	80	231,668	5,000	*
2	2,879	5.7	6,197	22,730	*	101,654	83	218,858	5,000	*
1	2,367	6.0	5,593	22,730	*	83,582	87	197,501	5,000	*
0.5	2,047	6.1	5,733	22,730	*	72,287	88	202,452	5,000	*
0.1	1,087	6.2	4,238	22,730	40,915	38,403	90	149,656	5,000	9,000
0.05	839	6.2	3,878	22,730	22,730	29,618	90	136,949	5,000	5,000
0.01	640	6.2	3,476	22,730	17,275	22,590	90	122,771	5,000	3,800
0.005	498	6.2	3,380	22,730	13,638	17,570	90	119,360	5,000	3,000
0.001	347	6.2	2,982	22,730	11,638	12,271	90	105,300	5,000	2,560
Dew Point <sup>(2)</sup>	-40°C / -40°F									
Sound Level	< 85 dB(A)									

## NITROSWING NS-1900H Series Specification & Performance

Standard	SI 10 Bar(g) feed pressure and 21° C					US 145 PSIG feed Pressure and 70° F				
Oxygen %	Nitrogen Nm <sup>3</sup> /h	Nitrogen Pressure Bar (g)	Feed Air Nm <sup>3</sup> /h	Air Receiver Liters <sup>(3)</sup>	Nitrogen Receiver Liters <sup>(3)</sup>	Nitrogen SCFH	Nitrogen Pressure PSIG	Feed Air SCFH	Air Receiver Gallons <sup>(3)</sup>	Nitrogen Receiver Gallons <sup>(3)</sup>
3	4,343	8.0	8,734	40,915	*	153,388	116	308,442	9,000	*
2	4,107	8.2	8,841	40,915	*	145,021	119	312,225	9,000	*
1	3,080	8.5	7,278	40,915	*	108,766	123	257,008	9,000	*
0.5	2,290	8.6	6,414	40,915	*	80,877	125	226,509	9,000	*
0.1	1,185	8.7	4,616	40,915	40,915	41,833	126	163,025	9,000	9,000
0.05	965	8.7	4,463	40,915	40,915	34,086	126	157,610	9,000	9,000
0.01	790	8.7	4,292	40,915	22,730	27,889	126	151,569	9,000	5,000
0.005	553	8.7	3,755	40,915	17,275	19,522	126	132,623	9,000	3,800
0.001	411	8.7	3,524	40,915	13,638	14,502	126	124,446	9,000	3,000
Dew Point <sup>(2)</sup>	-40°C / -40°F									
Sound Level	< 85 dB(A)									

\* Consult IGS for vessel size

### Connections

Connections available in ANSI Flange, DIN Flange or NPT

### Approximate Weight and Dimensions

L	W	H	Weight
4,216	4,216	3,785 mm	16,588 kg
166	166	149 in.	36,570 lb

### Power Requirements

Power Supply 110-230 V / 50-60 Hz  
Power Consumption max. 0.3 kW

Consult IGS for specifications on specific model and desired options.

### Notes:

- (1) Flow rates at standard atmospheric conditions (70 °F, 14.7 psi / 20 °C, 1013 mbar and 60% RH)
- (2) Dew point at atmospheric pressure.
- (3) Receiver size is recommended minimum capacity. Smaller receiver volumes will result in lower product pressures. Please contact IGS for details.
- (4) NITROSWING PSA nitrogen generators can be configured for use in food processing and packaging applications however, it is recommended that you consult IGS before purchasing a generator for any food application.
- (5) Min. Air Quality: ISO 8573.1 / Class 1.4.1, improve feed air quality may cause damage to the nitrogen generator not covered under warranty.
- (6) Other pressures and purities available, consult IGS for specifications.
- (7) IGS reserves the right to change data without notice.
- (8) Only in case of an on-board installation of an oxygen analyzer and/or product flow meter.



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