On-Site Membrane Nitrogen Generation Systems

GASTEC®

On-site production of nitrogen gas for offshore / marine applications

Benefits

- ✓ Economical - saves 20 to 30% over cylinders gas cost
- ✓ Convenient - reduced cylinder handling
- ✓ Environmentally friendly
- ✓ Safe - reduced high pressure gas inventory
- ✓ Improves productivity

Features

- ✓ High energy efficiency
- ✓ Rugged & durable design
- ✓ Easy to install & maintain
- ✓ Gas on demand technology
- ✓ Reliable, continuous round the clock operations
- ✓ User friendly, fully automated controls

Applications

- ✓ Tank blanketing
- ✓ Pipeline purging
- ✓ Compressor gas seals
- ✓ Pressure transfer
- ✓ Drying

GasTec Membrane Nitrogen Generator

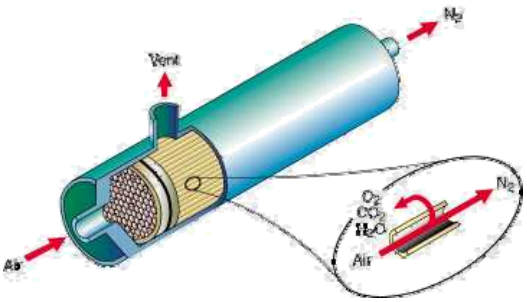
Atmospheric air contains approx 21% oxygen & 79% nitrogen. The GasTec Membrane Nitrogen Generator produces N_2 by removing the oxygen in air using membrane separators.

Membrane Separators

Membrane separators are made from hollow polymeric fibers arranged in a shell & tube arrangement. Fast permeate gas such as water vapor & oxygen diffuses thru the wall whilst slow permeating nitrogen travels the length of the hollow fibre as shown below.

Low Nitrogen Production Cost

The average N_2 production cost is <0.4 kWh per normal cubic meter at 95% purity, 7 bar output.



Membrane separator cross section

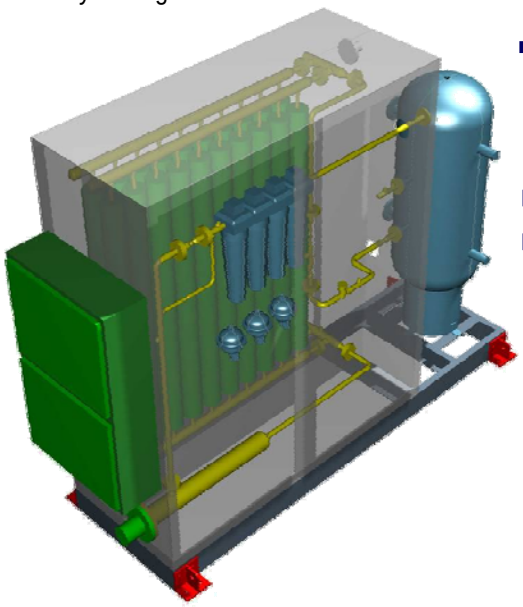
Designed for offshore applications

GasTec supplies a wide range of nitrogen systems that meets Zone 2, Group IIB, Temperature Class T3 hazardous area duty requirements.

Equipment are fully skid mounted, factory pre-tested for fast site installation & commissioning.

Convenient & Economical

GasTec nitrogen systems are easy to operate and maintain. It provides the convenience of on-site gas generation and attractive savings over cylinder gases.



Membrane Nitrogen Generator

Specifications

Purity (%)	99.5	99.0	98.0	97.0	96.0	95.0
Model	Nitrogen Output (Nm^3/hr)					
HMN20	6.4	8.8	12.8	16.5	20.2	24.2
HMN40	12.8	17.7	25.6	32.9	40.4	48.4
HMN60	19.3	26.5	38.3	49.4	60.6	72.5
HMN80	25.7	35.3	51.1	65.8	80.8	96.7
HMN100	32.1	44.2	63.9	82.3	101.0	120.9
HMN120	38.5	53.0	76.7	98.7	121.2	145.1
HMN140	45.0	61.9	89.5	115.2	141.4	169.3
HMN160	51.4	70.7	102.2	131.7	161.6	193.5
HMN180	57.8	79.5	115.0	148.1	181.8	217.6
HMN200	64.2	88.4	127.8	164.6	202.0	241.8
HMN220	70.7	97.2	140.6	181.0	222.2	266.0
HMN240	77.1	106.0	153.4	197.5	242.4	290.2
HMN260	83.5	114.9	166.1	213.9	262.6	314.4
HMN280	89.9	123.7	178.9	230.4	282.8	338.6
HMN300	96.3	132.6	191.7	246.8	303.0	362.7
HMN320	102.8	141.4	204.5	263.3	323.2	386.9
HMN340	109.2	150.2	217.3	279.8	343.4	411.1
HMN360	115.6	159.1	230.0	296.2	363.7	435.3
HMN380	122.0	167.9	242.8	312.7	383.9	459.5
HMN400	128.5	176.7	255.6	329.1	404.1	483.6
HMN500	160.6	220.9	319.5	411.4	505.1	604.6
HMN600	192.7	265.1	383.4	493.7	606.1	725.5
HMN700	224.8	309.3	447.3	576.0	707.1	846.4
HMN800	256.9	353.5	511.2	658.3	808.1	967.3
HMN900	289.0	397.7	575.1	740.5	909.1	1,088.2
HMN1000	321.2	441.8	639.0	822.8	1,010.1	1,209.1
Purity (%)	99.5	99.0	98.0	97.0	96.0	95.0
Air factor	5.4	4.2	3.3	2.8	2.5	2.3

Inlet pressure (Bar)	6.9	7.6	8.3	9.0	10.3	11.0	11.7	12.4
Correction factor	0.78	0.89	1.00	1.11	1.22	1.44	1.55	1.67

- Typical N_2 dew point is - 60 ^oC, 7 bar g output
- Performance base on feed air pressure of 8.3 bar and 49 ^oC process air temperature at membrane inlet
- Feed air must be free of liquid water or oil, (max dew point 40 ^oC; max size of solids/liquids = 0.01 micron, max oil content = 0.001 ppm w/w)
- Nitrogen generator power input, 230V/1ph/50Hz for HMN100 and below. 415V/3ph/60Hz for models above HMN100. Consult factory for power consumption.
- Multiply air factor to obtain air consumption
- Use pressure correction table for air pressure other than 8.3 bar (g).

GASTEC®
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