BOGE COMPRESSED AIR SYSTEMS

Ideal for use on the high seas:
BOGE Nitrogen Membrane Generators

Free air delivery rate from 5.6 to 350.4 m³/h
Purity from 0.5 to 5.0 vol.% O_2
Output pressure 5.7 to 11.2 bar

Reliable, easy to maintain, long-lasting
– and certified in accordance with IMO!

BOGE Quality

HIGH QUALITY
To combine the maximum reliability with a long service life, only high-quality process components are used in BOGE Nitrogen Membrane Generators. This uncompromising quality awareness also results in very low maintenance and service costs.

SMART DESIGN
The modular concept allows for flexible configuration of up to eight modules in two housing variants. This makes it possible to integrate 1-4 or 5-8 modules without taking up too much space in every ship. Easy access is assured in every case - all terminals are accessible from one side.

MODERN CONTROL
High-quality touch control panel (TCP) from Siemens Interactive, whose 7" touch screen with colour display has an Ethernet connection, ensures exceptionally easy, intuitive operation. An optional app allows for comfortable „remote monitoring" by smartphone or tablet.

COMPREHENSIVE CERTIFICATION
BOGE Nitrogen Membrane Generators comply with all applicable requirements and guidelines of both SOLAS (Safety of Life at Sea) and IMO (International Maritime Organisation) for inert gas systems. A type approval certificate (TAC) by Lloyd's Register is available as an option.

Whether LNG carriers or support vessels - they will all profit from the new, compact BOGE Nitrogen Membrane Generators: they provide high-quality nitrogen with a residual oxygen content of ≤ 5.0 vol.%, which rules out any risk of explosion. Even damage caused by ice formation due to flushing insulation cavities around the tanks with N2 is finally history with its dew point of up to -70°C. These generators are thus the ideal complement to the starting air and service air compressors made by BOGE, specially tailored to the shipping industry.

BOGE KOMPRESSOREN
Otto Boge GmbH & Co. KG
Otto-Boge-Straße 1–7 · 33739 Bielefeld
P.O. Box 10 07 13 · 33507 Bielefeld
Tel. +49 5206 601-0 · Fax +49 5206 601-200
marine@boge.com · **www.boge.com**

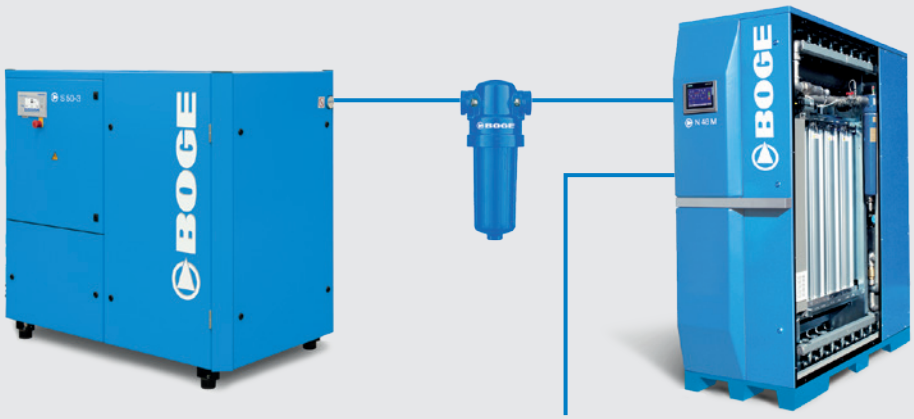
HOW IT WORKS

In membrane technology, the compressed air supplied is separated from other gases such as oxygen, carbon dioxide, and steam using a membrane made of hollow plastic fibres, so that enriched nitrogen forms. Unlike in the PSA technology, there are few mechanically stressed components, the generators are more compact, and the product dew point is considerably lower with up to -70°. In addition, there is no need for an adsorption or refrigeration dryer, nor for an air tank between the air compressor and the nitrogen generator.

oil-injected screw compressor (S-3)

cyclone separator

Nitrogen Membrane Generator



onboard/offshore-platform

Max. inlet pressure 13 bar

"ALL INCLUSIVE" SOLUTION

BOGE Nitrogen Membrane Generators are equipped ex works with a combination of pre-and microfilters, and an activated carbon filter plus an afterfilter.

A WIDE RANGE OF APPLICATIONS

BOGE Nitrogen Membrane Generators, with their high volume flow rates, are ideal for the specific requirements of the shipping industry - be it a propellant, fire and explosion protection, or for rinsing and blowing off of transport tanks. In addition, inertisation has proved useful for oxygen-sensitive freights, moisture, or highly flammable freight.

OVERVIEW OF BOGE NITROGEN MEMBRANE GENERATORS

purity	(% O_2)	0,5 Vol.-%			1,0 Vol.-%			2,0 Vol.-%			3,0 Vol.-%			5,0 Vol.-%		
inlet pressure	(bar)	7,5	10	13	7,5	10	13	7,5	10	13	7,5	10	13	7,5	10	13
N 6 M	Nm³/h	5,6	7,6	10,1	7,9	11,0	14,6	11,4	16,5	22,2	15,2	21,5	28,5	22,5	32,2	43,8
N 12 M	Nm³/h	11,2	15,2	20,2	15,8	22,0	29,2	22,8	33,0	44,4	30,4	43,0	57,0	45,0	64,4	87,6
N 18 M	Nm³/h	16,8	22,8	30,3	23,7	33,0	43,8	34,2	49,5	66,6	45,6	64,5	85,5	67,5	96,6	131,4
N 24 M	Nm³/h	22,4	30,4	40,4	31,6	44,0	58,4	45,6	66,0	88,8	60,8	86,0	114,0	90,0	128,8	175,2
N 30 M	Nm³/h	28,0	38,0	50,5	39,5	55,0	73,0	57,0	82,5	111,0	76,0	107,5	142,5	112,5	161,0	219,0
N 36 M	Nm³/h	33,6	45,6	60,6	47,4	66,0	87,6	68,4	99,0	133,2	91,2	129,0	171,0	135,0	193,2	262,8
N 42 M	Nm³/h	39,2	53,2	70,7	55,3	77,0	102,2	79,8	115,5	155,4	106,4	150,5	199,5	157,5	225,4	306,6
N 48 M	Nm³/h	44,8	60,8	80,8	63,2	88,0	116,8	91,2	132,0	177,6	121,6	172,0	228,0	180,0	257,6	350,4
outlet pressure	(bar)	5,7	8,2	11,2	5,7	8,2	11,2	5,7	8,2	11,2	5,7	8,2	11,2	5,7	8,2	11,2

The data provided is based on standard conditions at an ambient temperature of 20°C/ 70°F, 60% air humidity, ±0 altitude and dew point of -70°C/ -94°F.
Apart from the cyclone separator, the Nitrogen Membrane Generator requires no further processing elements or containers.

393-EN-BI-1.5-11.2015/d · Technical changes and errors reserved.