

NITRON MG SERIES MEMBRANE NITROGEN GENERATORS

MG SERIES

NITRON nitrogen generators have an edge with its high performance membrane modules featured with low investment and running costs.

Megatek, as a manufacturer of nitrogen generators applying both membrane and PSA technologies, provides solutions to laser cutting industry with Nitron MG series nitrogen generators. Customized engineering studies performed with high technology and efficiency principles created the unique Nitron brand which offer lasting on-site economic and reliable nitrogen production solutions. Stand-alone units or completely turn-key basis integrated systems are designed pursuant to customer's needs.

Pressing "START" button is enough to start Nitron MG series nitrogen generators. Sole requirement of nitrogen production is adequate amount of compressed air. When nitrogen demand cease, system goes to "STAND BY" and air consumption stops. System restarts re-production when nitrogen consumption commences.

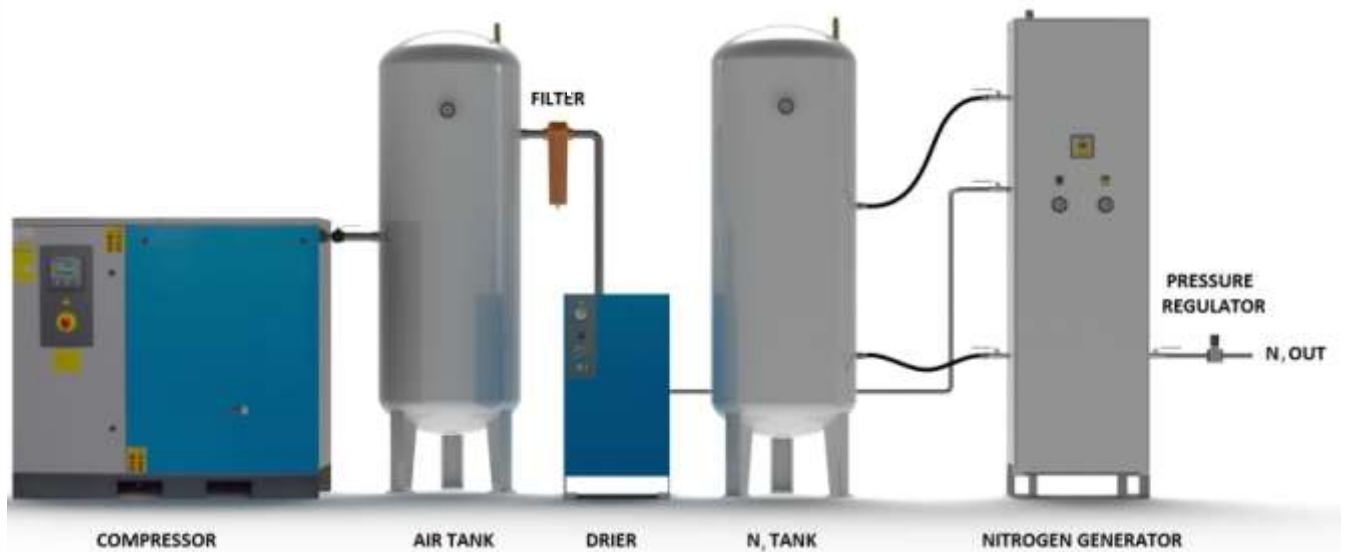
Nitron MG series nitrogen generators are designed and manufactured with experienced engineers. This solution is by far reliable when compared to alternative nitrogen supply methods owing to low pressure operation and few moving parts. Periodical maintenance can be easily performed by user and service support is given on demand.



With Nitron MG series nitrogen generators, you can produce nitrogen gas on your site. Our on-site solutions enable you to make uncomparable savings when compared to alternative supply methods (compressed gas cylinder and bulk liquid supply).

- Highest efficient membrane technology
- Top quality membranes with the highest permeability feature
- Nitrogen purity range between %95 and % 99.5
- Few moving parts
- Compact and ergonomic design
- Integrated skid mounted design with air treatment package
- Activated carbon tower instead of activated carbon filter
- Application-specific design
- Automatic stand-by function
- Technical support from local distributor
- Spare parts from own stock
- Continuous oxygen monitoring and off

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SAFETY AND STANDARDS

Pressure Vessels:

Pressure vessels are designed in reference to EN-13445:3 code standard. A special quality steel is used in the manufacturing process of pressure vessels pursuant to EN standards.

Piping and pressure vessels: DIN

Electrical works: IEC

Noise level: 62 dB (A)

Surface treatment and painting: Three layer of epoxy primer and aliphatic polyurathane.

Adherence to safety, environment, health management standards and regulations is the basic principle of Megatek. Besides, our strength is built upon 15-years of extensive experience on industrial

PROCESS DESCRIPTION

Standard membrane nitrogen production system consists of four main parts. Air compressor, air treatment, air separation and nitrogen control system.

Air compressor

Air is the raw material of the nitrogen generator. Air compressor pressurize the air absorbed from the atmosphere to the ideal pressure and supply it to the nitrogen generator. Oil injected screw compressors or oil free compressors are convenient type of air compressors.

Air treatment

Quality of compressed air is essential in preserving the performance of membrane nitrogen generators. Water, oil, dust particles and steam of water and oil must be kept away from air treatment system. Nitron nitrogen generators include basic air treatment within the skid.

Air separation system

Compressed air which passed through air treatment system reaches to air separation system and at this stage nitrogen and air are separated from each other. In membrane-type nitrogen generators, air separation process works in such a

principle where oxygen molecules skip from the membrane surface and nitrogen molecules stay in the membrane inner surface.

Membrane is a polymer material produced in the form of hollow fiber and in parallel modules.

Nitrogen control system

Purity of the nitrogen produced in the air separation system can be adjusted according to the application field.

Oxygen in the product nitrogen is continuously measured. If oxygen concentration in product gas is higher than preset value, product valve is automatically closed and off-spec valve open till product purity is reached to preset value. In critical applications, off-spec / product valve system is very important for quality assurance.

Adjustable product purity option can be added if different product purity is required. In that case operators will be able to set maximum oxygen concentration in product line. In those plants higher product purity can be achieved by lower product flowrate which is the general rule of nitrogen generators.



Membrane modules



Membrane fiber



Cross section of membrane fibers

FEATURES

- Efficient membrane technology
- Product purity range between % 95- % 99.5
- Top quality membranes with the highest permeability feature.
- Few moving parts
- Compact and ergonomic design
- Integrated skid mounted air treatment system
- Active Carbon Tower, instead of Active Carbon Filter
- Aging of membrane modules at factory during production
- Improved control system
- Stand-by function
- Service supply from manufacturer or local distributor company
- Spare parts from own stock
- Continuous oxygen monitoring and off-spec vent system

ADVANTAGES

- Lower cost of nitrogen production on-site
- Product purity required for application. Lower nitrogen cost if low purity is enough.
- Highest production efficiency even at lower air feed pressure and without electric heater.
- Lower maintenance costs
- Minimum space requirement
- Easy installation on site.
- Keeping membrane performance tens of years
- Newer lost of membrane efficiency due to aging
- User friendly fully automatic control system
- No air (energy) consumption incase of no nitrogen demand
- Lower cost of maintenance and quick service
- Faster supply of spare parts
- Continuous quality assurance

OPTIONS

Remote production control
Adjustable purity
Air compressor
Air receiver
Nitrogen receiver
Dual oxygen analyser

Product flow totalizer
Dew point measurement
Special design for harsh environments
Nitrogen booster compressor
High pressure nitrogen storage vessel
Nitrogen cylinder filling system

NITRON MG SERIES MEMBRANE NITROGEN GENERATORS PRODUCTION CAPACITIES, Nm³/hr

MODEL	% 95	% 96	% 97	% 98	% 99	% 99.5	A (mm)	B (mm)	C (mm)
MG 10	11	9	7	5	3	2	2,000	450	600
MG 20	23	18	14	10	7	5	2,000	450	600
MG 30	34	28	22	16	10	7	2,000	450	600
MG 40	46	37	29	21	13	10	2,000	450	600
MG 50	57	46	36	26	17	12	2,000	900	800
MG 60	68	55	43	31	20	14	2,000	900	800
MG 70	80	64	50	36	23	17	2,000	900	800
MG 80	91	74	58	42	26	19	2,000	900	800
MG 90	103	83	65	47	30	22	2,000	900	800
MG 100	114	92	72	52	33	24	2,000	900	800

*Performance values are given for 7 barg air supply pressure

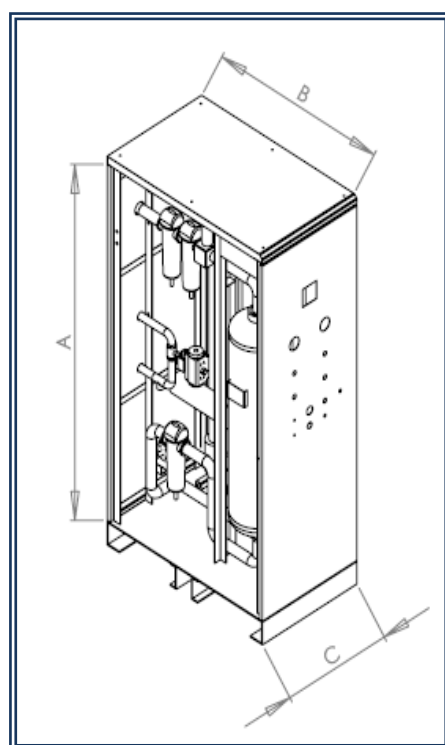
*Nm³/h is flow calculated at 0 °C ve 1013 mbar

* Megatek can change dimensions and specifications

*Consult manufacturer for higher purities and capacities



MG 60



Air requirement

Nitrogen purity	% 95	% 96	% 97	% 98	% 99	% 99.5
Air / nitrogen	2.6	3.0	3.5	4.3	6.3	8.5

Air pressure factor on production capacity

Air pressure, barg	5	6	7	9	10	11
Nitrogen production capacity factor	0.65	0.85	1	1.4	1.6	1.8

Temperature factor on production capacity

Ambient temperature, °C	% 95	% 96	% 97	% 98	% 99	% 99.5
0 °C	0.9	0.9	0.9	0.9	0.9	0.9
30 °C	1	1	1	1	1	1
40 °C	1.1	1.1	1	1	0.8	0.6