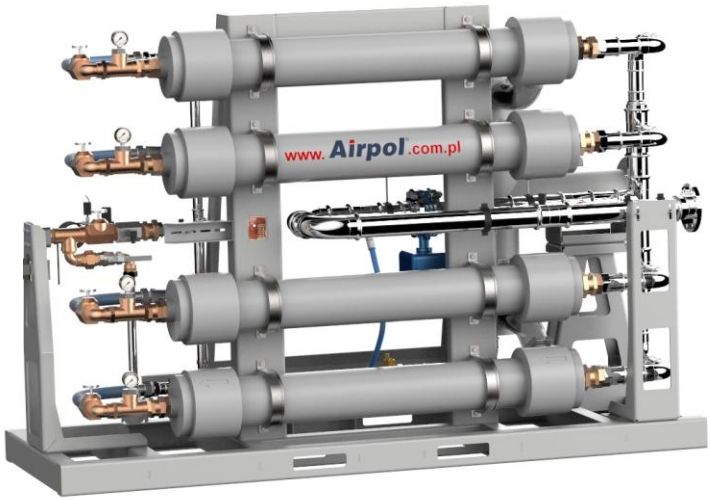
MEMBRANE NITROGEN GENERATORS

NGS-M generators produce nitrogen using membrane air separation.

Generators are designed to separate nitrogen from other air components which consists of approximately 78% nitrogen, 21% oxygen and trace gases with 0.9% argon.

NGS-M nitrogen generators are manufactured to meet individual customer requirements in terms of nitrogen purity, target location (container design is available). This allows optimisation of costs while effectively substituting traditional nitrogen supply methods in gas cylinders or as a liquid.

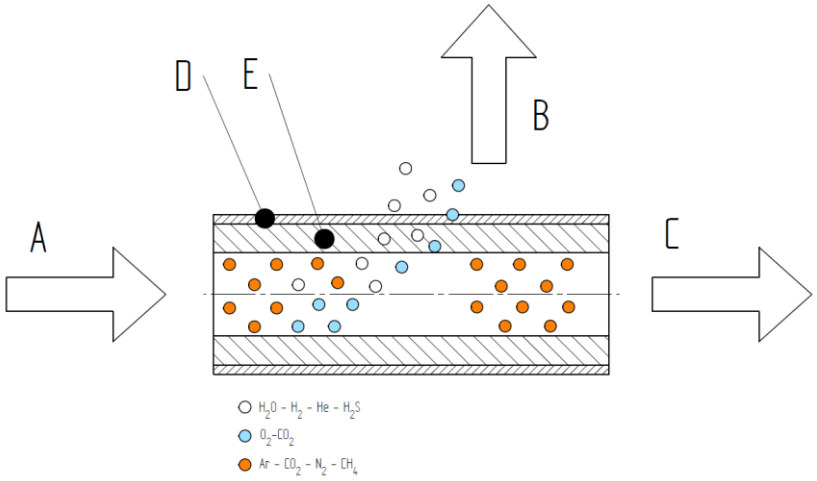


Membrane Nitrogen Generators	NGS-M
Medium	compressed air
Working pressure	6 - 13 bar
Compressed air temperature	max. 50°C
Particulate matter in compressed air	< 0,01 µm
Oil content in compressed air	< 0,003 mg/m³
Recommended compressed air dew point	+3°C
Ambient temperature	+5°C to +40°C
Nitrogen output	up to 500 m³/h
Particulate matter in nitrogen	< 0,01 µm
Nitrogen purity	up to 99,5%

Operating principle:

Membranes of NGS-M nitrogen generators operate continuously and do not require regeneration. Compressed air is fed to a control system and then to individual membrane bundles filled with fibres (membranes), which have a with a thin layer separating various gas molecules.

Separation process is shown in the following diagram.



A – Compressed air inlet
B – Oxygen-enriched air exhaust
C – Nitrogen-enriched compressed air exhaust
D – Membrane layer
E – Auxiliary layer

Separated nitrogen is fed to membrane bundle exhaust connector and then through manifold to nitrogen purity measurement and control system. Oxygen-enriched air is fed to the manifold from which it is released outside.
For maximum effectiveness, operational safety and extended life of membrane generator it should be equipped with an appropriate compressed air treatment system. Such a system should include coalescing filters ensuring maximum oil content in compressed air at 0.01 mg/m3 (recommenced content is 0.003 mg/m3 which can be achieved using coalescing and carbon filters). Allowable particulate matter content is 0.01 µm. Upstream the nitrogen generator a carbon column filter should be installed for cleaning of compressed air from hydrocarbon vapours and ozone which have an adverse effect on the membrane. Additionally the pressure dew point of the compressed air should be maintained at least of +3°C.