

NITROGEN GENERATOR SYSTEMS



Together creating pure
oil, gas and water.

ProSep offers high-efficiency membrane separators for nitrogen generation, both to the oil and gas industry and the shipping industry. Through cooperation with leading membrane manufacturers, ProSep has access to state-of-the-art hollow fiber membrane technology. These experienced manufacturers are the market leaders in the areas of development, manufacturing and supply of nitrogen membranes to the international process industry.



SYSTEM DESIGN

The ProSep Membrane System is designed to generate dry nitrogen from compressed feed air. A typical turnkey system consists of the following components:

- Feed air compressors (if required)
- Feed air filter
- Feed air heater
- Membrane separators
- Instrumentation piping and valves

The system has the following specifications:

- Product capacity: 10-2000 Nm³/h
- Product purity: 90-99.9%
- Product pressure: Up to 14 barg without product compression

BENEFITS

- Low maintenance frequency
- Automatic operation at normal conditions
- Normal maintenance without shut-down requirements
- Easy installation and hook-up
- Adjustable purity

TECHNOLOGY

Air at atmospheric pressure enters into the compressor through an intake filter and is compressed to the desired pressure. The compressed air is then dried, purified, and heated to the operating temperature. The membranes selectively remove O_2 , H_2O , and CO_2 from the feed, leaving a nitrogen-enriched stream as the primary product, as shown in the illustration.

Air separation is accomplished through a solution-diffusion mechanism in modules of hollow fiber polymeric membranes. Each module contains several hundred thousand of these fibers in bundles. Air fed under pressure to one side of the membrane dissolves and diffuses across the polymeric material. It desorbs permeate at the lower pressure side of the membrane. Each constituent dissolves in the polymer matrix to a different extent and permeates at a different rate.

As a result, the more rapidly permeating components such as O_2 , CO_2 , and water vapor will concentrate in the low pressure stream, which is safely vented to atmosphere. The more slowly permeating components (e.g., nitrogen and argon) are retained in the high pressure stream and are removed as the inert gas product.

CONTROL AND BACKUP SYSTEMS

The controls are normally selected in close cooperation with the client, based on requirements for purity, product pressure, flow rate and turndown. Both manual and automatic control systems may be employed. Monitoring may be local or integrated in the central plant control system.

ProSep can also offer nitrogen compressors/intensifiers and buffer tanks downstream nitrogen membranes, in order to meet demands during peak production periods.

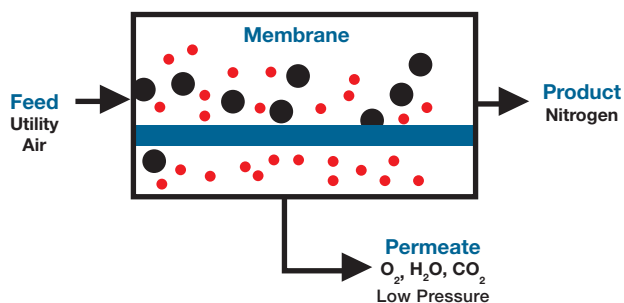
REFERENCES

Available upon request.

FOR MORE INFORMATION

Contact your nearest ProSep office
www.prosep.com

NITROGEN MEMBRANE SYSTEM



About ProSep



ProSep is a technology-based process solutions provider for the upstream oil and gas industry.

The Company designs, develops, manufactures and commercializes technologies to separate oil, gas and water generated by oil and gas production.

ProSep's innovative offerings have been awarded three Spotlight on New Technology Awards from the annual Offshore Technology Conference in Houston in 2005 and onwards, comprising the proprietary technologies ProScav, CTour and ProSalt.

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