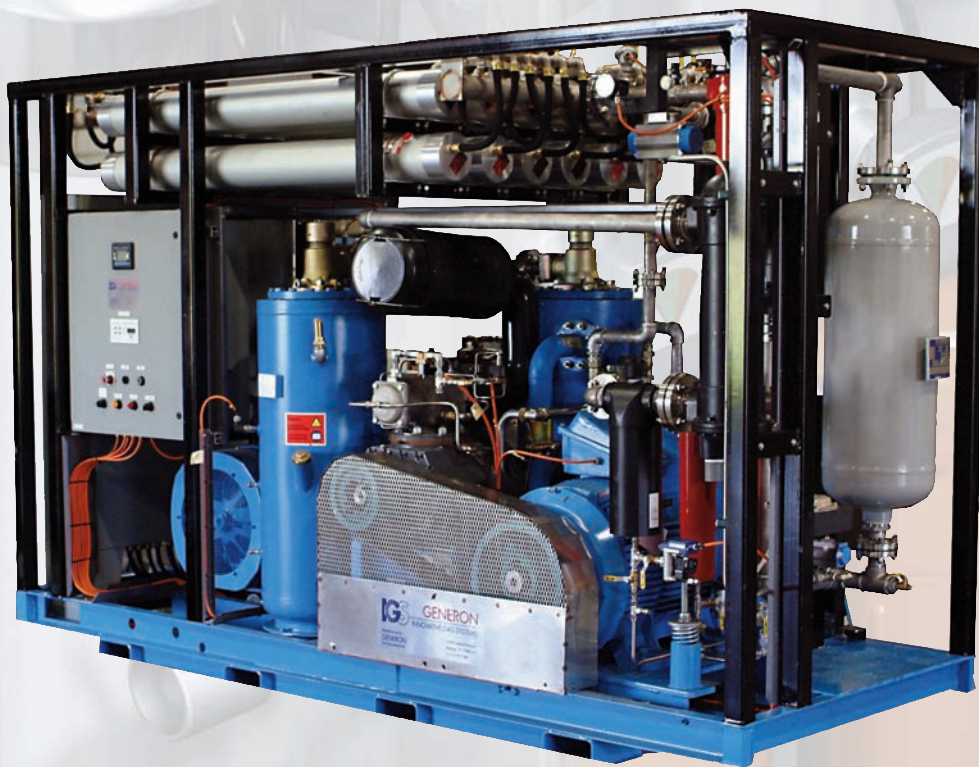


IGS INNOVATIVE GAS SYSTEMS

*INTEGRATED
MARINE
NITROGEN
PACKAGE*

GENERON® MARINE NITROGEN SYSTEMS



*50% SPACE
SAVINGS*

*SIMPLIFIED
INSTALLATION*

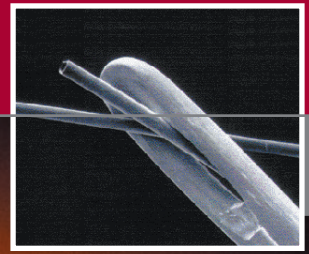
- *NO INTERCONNECTING PIPING*
- *NO INTERCONNECTING ELECTRICAL*

*SUPPLIED AS
A FULLY
ASSEMBLED AND
CERTIFIED UNIT*



***From Concept to Completion,
We Provide Solutions!***

Generon® Membrane Technology



TECHNOLOGY

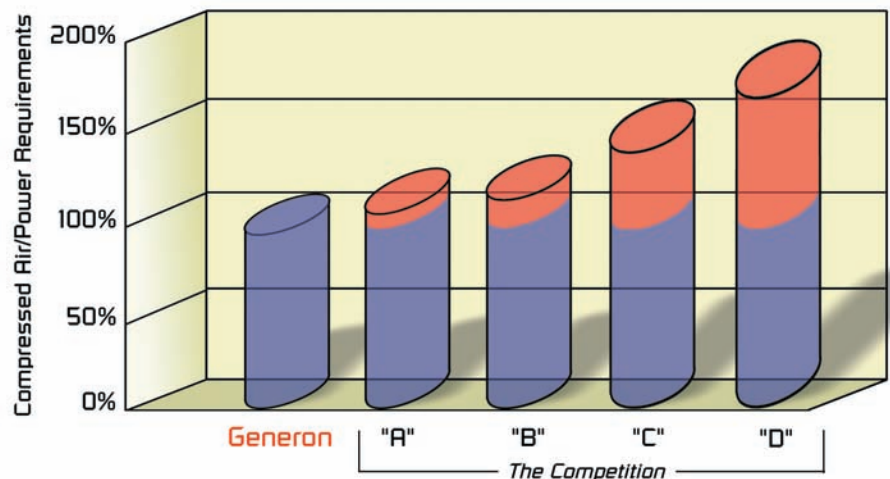
- Highest efficiency membranes on the market
- Long term commitment to R&D at our California module fabrication and research center
- Generon® has over 37 patents for its innovative polymer design
- Systems are designed by our experienced engineering team and assembled in our Houston manufacturing facility
- Generon® maintains a staff of engineers with extensive experience in system design and compression packaging to meet your individual needs



PERFORMANCE

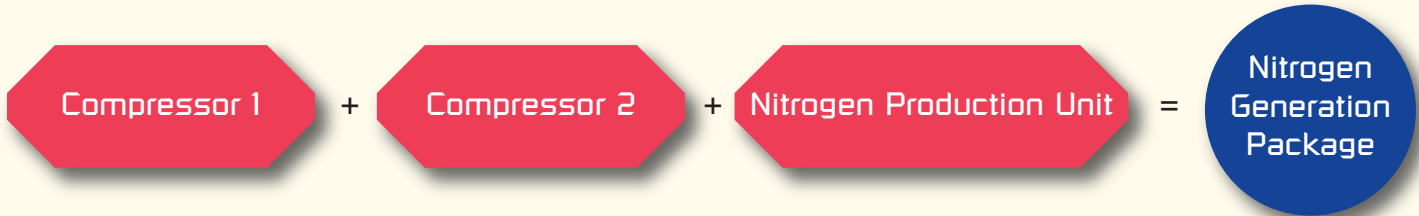
- Significant savings over bulk liquid or bottled Nitrogen
- Utilizes 12-90% less feed air than competitive systems
- Product durability assured through extensive product testing
Every membrane design must pass a 10,000 cycle pressure/temperature durability test simulating 10 years of operation
- Quality Manufacturing Operations
ISO 9001:2000 Certified

Power/Air Consumption Per Unit Of N2 Produced
(Product comparisons at 99% purity)



- ▲ Nitrogen purities to 99.9%
- ▲ Product Dew Point to -70°F (-57°C)
- ▲ Extensive product range for the smallest module producing 25 scfh (.7 Nm³/h) to large integrated system producing 167,000 scfh (4,915 Nm³/h)
- ▲ Product pressures available in two standards 200 psig / 14 barg and 330 psig / 23 barg
- ▲ System designed to 10,000 psig / 689 barg with post compression

Traditional Supply Method



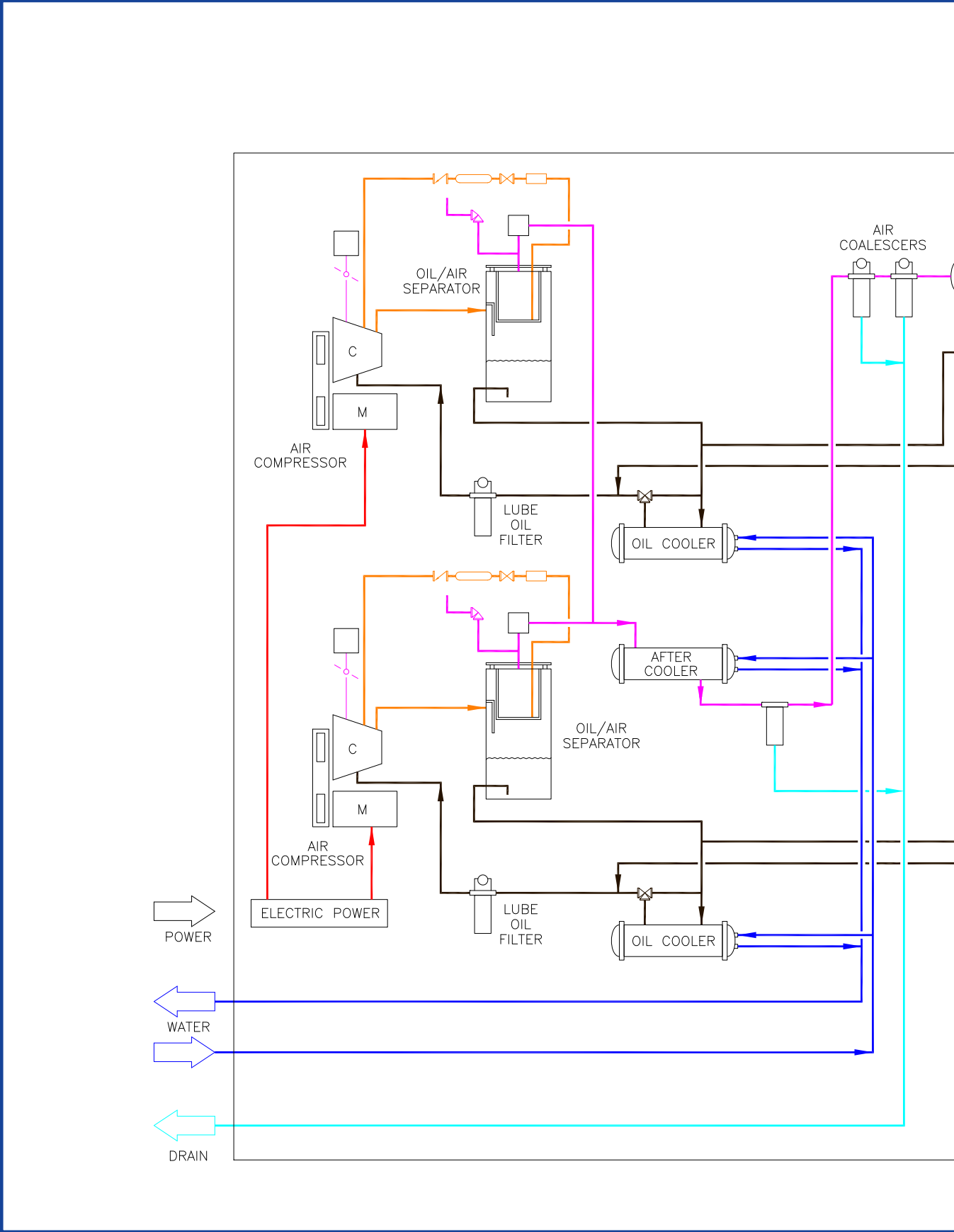
New Integrated Solution



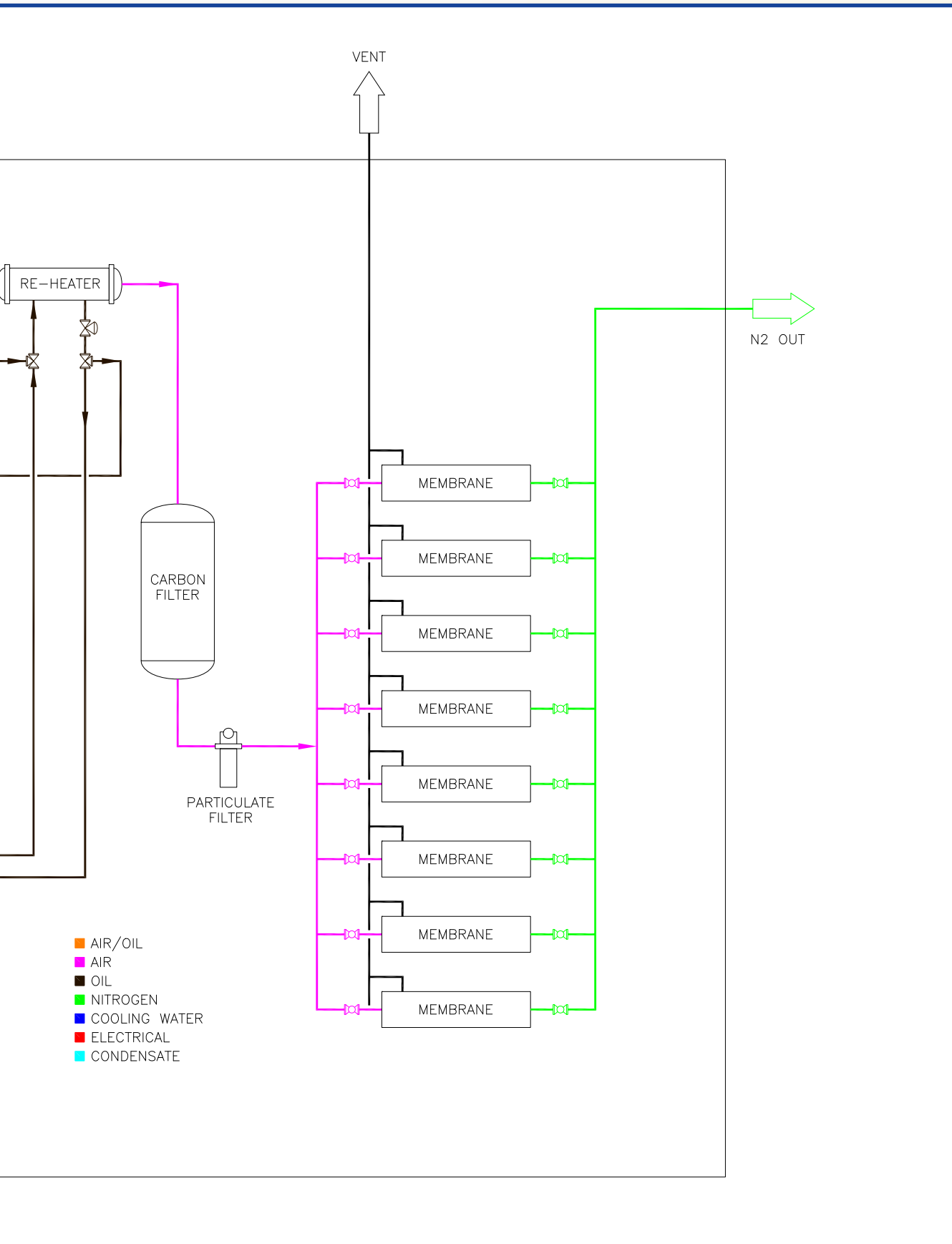
- Space savings of over	55%
- One power connection vs. three	66%
- Two cooling water connections vs. four	50%
- One condensate drain vs. three	66%
- No interconnecting air lines	100%
- No interconnecting compressor – skid wiring	100%
- High efficiency design due to the nitrogen and compression process integration	10%
- Equipment accessibility is greatly enhanced due to optimized equipment layout	+
- Fully automatic and manual operation as a standard feature	+

NITROGEN GENERATION UNIT SUPPLIED AS A FULLY ASSEMBLED AND CERTIFIED UNIT

Process Flow Diagram -



Intergrated Marine Nitrogen Generator



Custom-Designed Systems To Your Exact Specifications

- ▲ Generon® manufactures nitrogen production units from 0.5 Nm³/h to 5,500 Nm³/h at 95% nitrogen up to 99.9% nitrogen

- ▲ Standard system offerings
 - Single and dual compressors
 - Single or multiple purities available
 - Nitrogen supply pressures available in multiple pressures from 0.1 barg to 12 barg
 - System supplied with fully automatic plc control with manual override capabilities.
 - Systems conform and are certified to all class society rules

- ▲ Compact modular design for below deck installation

- ▲ Designed for easy access for maintenance

- ▲ Single source responsibility for membranes & compression

GENERON NITROGEN PRODUCTION UNITS

IGS Generon® References, Standards and Track Record

Sampling of Customer Reference List

- | | | |
|-----------------------|-------------------------------|-----------------------|
| ▲ ADM | ▲ Global Santa Fe | ▲ Sener Petrol |
| ▲ Adrasan Denizcilik | ▲ Halliburton | ▲ Shell |
| ▲ Aker Kvaerner | ▲ Hamworthy | ▲ Smit |
| ▲ Allied Signal | ▲ Hibernia | ▲ Statoil |
| ▲ Amerada Hess | ▲ Hyundai | ▲ Stolt |
| ▲ Aramco | ▲ KBR | ▲ Tersan Tersanecilik |
| ▲ Armona Denizcilik | ▲ KGS Shipping | ▲ Torlak Denizcilik |
| ▲ Birlesik Denizcilik | ▲ Linde | ▲ Transocean |
| ▲ BOC | ▲ Mitsubishi Heavy Industries | ▲ Unitor |
| ▲ BP | ▲ Odra Gas | ▲ VSEL |
| ▲ Chevron/Texaco | ▲ Oilvest | ▲ Weatherford |
| ▲ Conoco/Phillips | ▲ Pemex | ▲ Yildirim SY |
| ▲ Daewoo | ▲ Petromarine | ▲ Unitor |
| ▲ Desan Shipbuilding | ▲ Rexroth | ▲ And Many More |
| ▲ Dow Chemical | ▲ Seatrade | |

Industry Standards

- | | |
|---------------------------|------------------|
| ▲ ASME | ▲ ABS |
| ▲ CE | ▲ Beseefa |
| ▲ CENELEC | ▲ IEC |
| ▲ DNV | ▲ NFPA RINA |
| ▲ Lloyds | ▲ Class I Div 2 |
| ▲ CSA | ▲ Class 1 Zone 2 |
| ▲ Customer Specifications | ▲ GOST |
| ▲ Bureau Veritas | ▲ Class NK |
| ▲ Germanischer Lloyd | |

System History

- ▲ Over 30,000 Membranes Sold To Date
- Including:
 - 200+ Nitrogen Production Systems
 - 1000+ Engineered and Marine Systems
 - 500+ Cabinet Systems



IGS INNOVATIVE GAS SYSTEMS

- ❑ Innovative Gas Systems is a global technology company with operational centers in North America, Europe, Russia, Asia and the Middle East.
- ❑ Our products are world class with over 75 patents supporting our innovative technology in Nitrogen / Dehydration membranes, Nitrogen PSA and Oxygen PSA.
- ❑ Please visit our website for a review of the complete list of products from IGS or contact one of our local sales associates directly. .



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