

## Services

Nitrotech Engineering AS participates and contributes in all phases of a project, from feasibility study to delivery of Nitrogen Generation Systems, including feed air package.

### The activities include:

- . Project Management
- . Studies
- . Engineering Design
- . Procurement
- . Configuration / Integration
- . Start-up
- . Commissioning
- . Training
- . After Market Services

## Products

**Nitrogen Systems designed for Safe Area and delivered mainly to;**

- . Platform Supply Vessels
- . LNG Carriers
- . LPG Carriers
- . Chemical Tankers



PSV delivery 190 m3/h  
97 % N2 purity  
Ulstein Shipyard, Norway



Chemical tanker delivery 1250 m3/h  
95 % N2 purity  
ADIK Shipyard, Turkey

**Nitrogen Systems designed according to Zone II rated areas delivered mainly to;**

- . Offshore Platforms
- . Drilling Ships / Rigs
- . FPSO's

MODEL	PURITY N2 (m3/h)			SIZE (mm)		
	95 %	97 %	99 %	L	H	W
<b>NITROGEN FLOW</b>						
NTE 01	28	19	10	1000	2200	800
NTE 02	55	38	20	1000	2200	800
NTE 11	90	62	33	1000	2200	800
NTE 12	179	124	66	1000	2200	800
NTE 23	268	185	99	1400	2200	800
NTE 24	357	247	132	1400	2200	800
NTE 25	446	308	165	1400	2200	800
NTE 26	535	370	198	1400	2200	800
NTE 27	624	432	231	1400	2200	800
NTE 38	713	493	264	1800	2200	800
NTE 39	802	555	297	1800	2200	800
NTE 310	891	616	330	1800	2200	800
NTE 311	981	678	363	1800	2200	800
NTE 312	1070	740	396	1800	2200	800
NTE 313	1159	801	429	1800	2200	800
NTE 314	1248	863	462	1800	2200	800
NTE 415	1337	924	495	2900	2200	1600
NTE 416	1426	986	528	2900	2200	1600
NTE 417	1515	1048	561	3100	2200	1600
NTE 418	1604	1109	594	3100	2200	1600
NTE 419	1693	1171	627	3100	2200	1600
NTE 420	1782	1232	660	3100	2200	1600
NTE 421	1872	1294	693	3100	2200	1600
NTE 422	1960	1356	726	3100	2200	1600
NTE 423	2050	1417	759	3100	2200	1600
NTE 424	2139	1479	792	3100	2200	1600
NTE 425	2228	1540	825	3300	2200	1600
NTE 426	2317	1602	858	3300	2200	1600
NTE 427	2406	1664	891	3300	2200	1600
NTE 428	2495	1725	924	3300	2200	1600
NTE 429	2584	1787	957	3300	2200	1600
NTE 430	2673	1848	990	3300	2200	1600
NTE 431	2763	1910	1023	3300	2200	1600
NTE 432	2852	1972	1056	3300	2200	1600

Official Distributor Atlas Copco Marine Compressors



## Contact

[www.nitrotech.no](http://www.nitrotech.no)  
[sales@nitrotech.no](mailto:sales@nitrotech.no)

Visiting Address: Nitrotech Engineering AS . Gismerøyveien 89, 4515 Mandal, Norway



## Company Profile

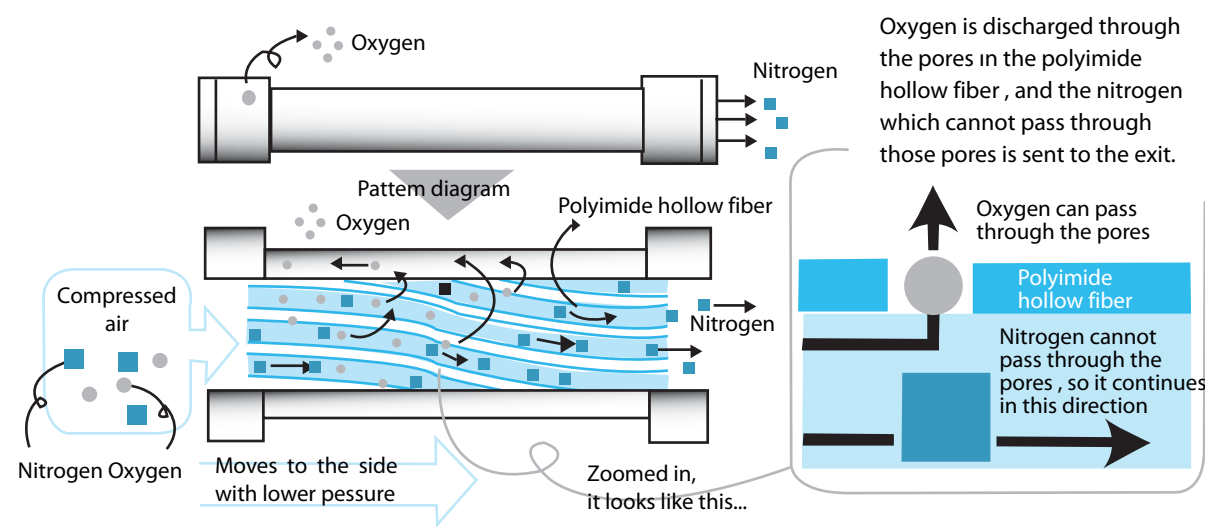
Nitrotech Engineering AS is specialized in non cryogenic air separation systems. Nitrotech designs and manufactures on-site Nitrogen Generation Systems utilizing membrane air separation technology, for the maritime as well as oil & gas industry. A reliable, high performance membrane module is the heart of a nitrogen generator. Customers around the world trust Nitrotech to provide reliable nitrogen gas generators that meet the specific needs of our customer applications.

Each system was designed and fabricated to meet the individual requirements of the end user. Systems were designed for Safe Area use as well as Zone II rated areas for CE/ ATEX designated rated areas. We also offer Nitrogen systems designed and build according to Norsok.

## Working Principle

Pressurized air is fed to one end of the hollow fiber membranes. The permeation rates of the water vapour, CO<sub>2</sub> and oxygen contained in the air stream are faster than nitrogen and argon and will rapidly diffuse through the fiber walls. The slower diffused nitrogen molecules remain in the fiber bore and are collected as the nitrogen product gas.

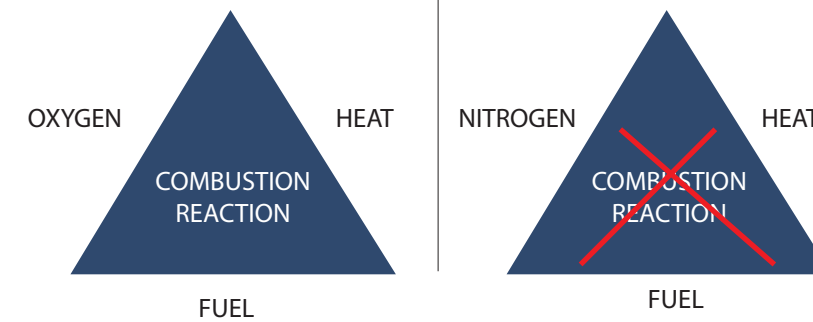
Nitrogen purity ranges from % 95 to 99.9 %. As purity level increases, more air consumption and membrane modules are required so higher investment appears. That is why precise gas specifications are important in order to obtain maximum economic solution.



## Applications

Nitrogen is used to displace oxygen, break the burning triangle and prevent explosion. Oxygen, heat, and fuel are referred to as the "fire triangle." Taking one of these components out of "the fire triangle" makes it impossible for a fire to start.

NITROTECH NITROGEN GENERATORS prevent the ignition of fuel tank vapours by inerting the tank with nitrogen enriched air.



- Inerting of cargo tanks during cargo discharge.
- Purging of fuel gas line in engine room, for purging of cargo liquid line, vapour line, gas line, vent masts and related cargo equipment.
- Blanketing the storage tanks and to ensure process safety and quality. Preventing degradation of the cargo sensitive to oxygen, moisture or combustion by-products.
- Bleeding of insulation space onboard LNG vessels. In LNG carriers the insulation space normally is to be pressurized / maintained by Nitrogen vapour from the nitrogen generator and vented to the atmosphere through vent control valves.
- It is possible to increase the production by nitrogen injection, from existing or older reservoirs.
- Nitrogen is also used for enhancing oil recovery rate on existing reservoirs.
- One of the main use of nitrogen use is to minimize risk of down-hole fires.
- Better underbalanced drilling is possible, by means of injection of nitrogen to the drilling fluid.
- Lower drilling fluid density, makes lower down hole hydrostatic pressure.

