

Most PSA Nitrogen Generator users require the highest levels of Nitrogen purity by the most cost-effective means possible.

Mikropor's brand new MDX Nitrogen Purifier System offers an extremely economic way to increase Nitrogen purity levels beyond 99.5% or 99.9% all the way up to 99.999% purity.

The MDX range increases Nitrogen purities by utilizing a specially designed catalyst with a large surface area. As a result of the reaction on the catalyst surface, the residual oxygen content is reduced to maximum 10 ppm level.

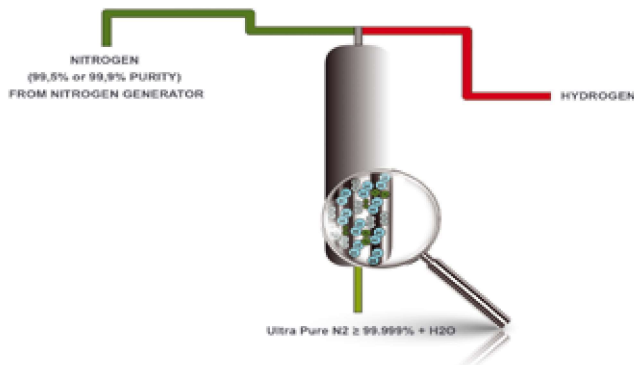
Mikropor's MDX Nitrogen Purifiers, combined with Mikropor's MNG Nitrogen Generators, utilise a small amount of Hydrogen gas during the reaction process to achieve high levels of Nitrogen purity by avoiding compressed air loss.

The MDX System, in conjunction with MNG Nitrogen Generators, will significantly reduce power consumption and still achieve the highest possible levels of Nitrogen purity.

Working Principle

In comparison to the current applications, Nitrogen produced from a nitrogen generator at 99.5% or 99.9% purity level can be converted to 99.999% by Mikropor's compact design Nitrogen Purifier System which also provides high savings in nitrogen production costs.

The system uses a catalytic reaction, whereby residual Oxygen from the MNG generator is removed from the PSA Nitrogen Generator output by utilising a reaction between the remaining Oxygen and Hydrogen gas to produce a purity of 99.999% Nitrogen. The only by-product of this catalytic reaction is water.



The total cost of hydrogen required for the reaction is very low and provides significant long-term savings.

High purity nitrogen can in fact be produced by utilizing lower capacity air compressors and downstream equipments throughout this newly developed nitrogen purification process.

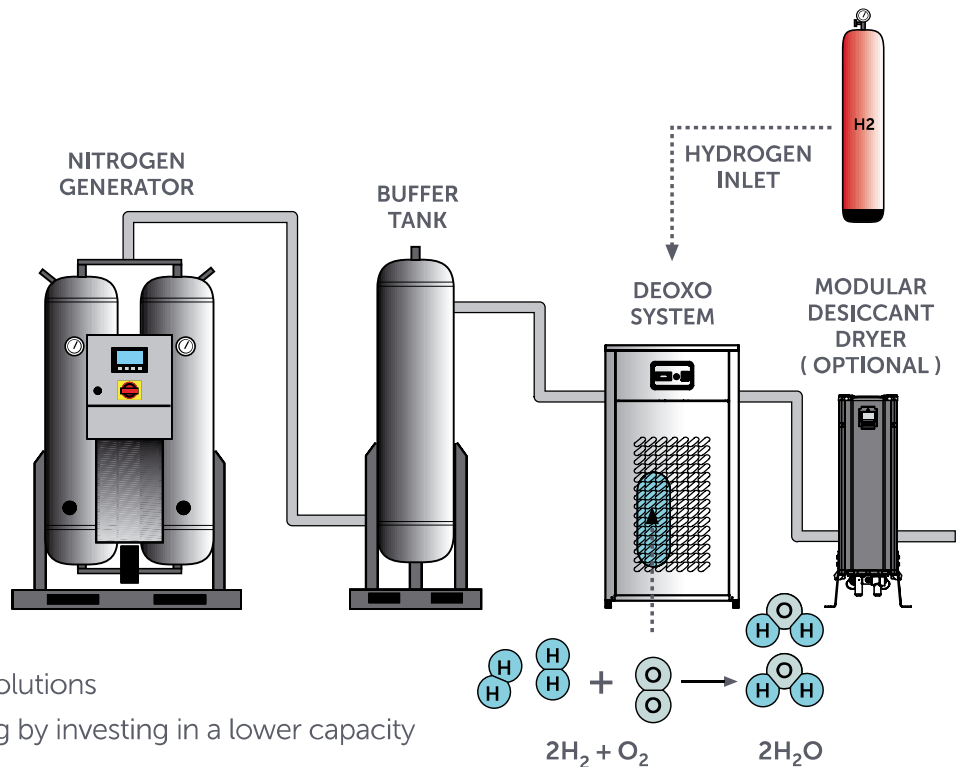
The reaction increases the Nitrogen temperature. That is why Mikropor's MDX Nitrogen Purifier System has been integrated into a High Temperature Air Dryer combining two products into a single unit to give a complete solution.



Inlet Nitrogen Purity (99.5% or 99.9%)

Model	MDX - 10	MDX - 20	MDX - 35	MDX - 60	MDX - 95	MDX - 120	MDX - 150	MDX - 250	MDX - 330
N ₂ Flow at 99.999% Purity (m ³ /h)	1	2	3.5	6	10.4	13.9	17	27.1	35.8
Model	MDX - 450	MDX - 510	MDX - 570	MDX - 730	MDX - 910	MDX - 1110	MDX - 1230	MDX - 1370	MDX - 1820
N ₂ Flow at 99.999% Purity (m ³ /h)	48.4	55.5	61.6	80.6	98.6	119.9	132.3	146.6	198.2

Nitrogen	99.999%
Oxygen	<10 ppm
Dew Point*	<3°C
*: -40°C Optional	



Advantages

- Effective pay-back period
- Minimised installation area
- Long life efficiency (> 10 years)
- Top-quality high-performance solutions
- Cost reduction and Power Saving by investing in a lower capacity MDX rather than installing a higher capacity MNG system solely for the same N₂ purity level.
- Up to 99.999% nitrogen purity with minimum space and energy requirement
- Low energy consumption
- Low CO₂ emission
- Heavy-duty construction designed for rough conditions and industrial use
- High quality & durable components
- System that delivers min. 99.999% purity with a very low A/N (air : nitrogen) ratio (3.0 instead of 8,4)
- Compact design, fully automatic system
- 24/7 Nitrogen gas production in desired purities
- High energy saving
- Low cost and customized production
- Minimum maintenance cost

SYSTEM	COMPRESOR + DRYER + MNG + DEOXO	COMPRESOR + DRYER + MNG
Required Compressor Power (kW)	37,0	90,0
Compressor Cost (EURO)	13970,0	33850,0
Dryer Model Number	MKE-375	MKE-930
Dryer Cost (EURO)	2162,0	3861,0
Nitrogen Generator Model	MNG-1110	MNG-5560
MNG Nitrogen Generator Cost (EURO)	39200,0	111700,0
Deoxo Unit Model Number	MDX-1230	-
Deoxo Unit Cost (EURO)	67252,0	-
Total Investment Cost	122.584 EUR	149.411 EUR
Total Investment Cost Saving	26.827 EUR	

Annual N2 Production Cost	53.832 EUR	55.188 EUR
Investment Pay Back Period (year) (Compared to liquid)	0,7	0,8
Investment Pay Back Period (year) (Compared to manifold)	0,3	0,4