



## **MDX NITROGEN PURIFIER SYSTEM**

Manufacturing Forward





Mikropor began its journey in 1987 with a passion to create “Tomorrow’s Technology” and has become one of the leading manufacturers of atmospheric air filtration solutions and compressed air treatment systems for a variety of industries.

By closely following the latest developments in technology, Mikropor’s “Best in Class” products and solutions are appreciated by customers in more than 140 countries.

The company’s sustainable growth has been provided by its passion for innovation and commitment to quality, as well as its dedication to technology. Mikropor is an environmentally conscious company that values people, while developing products that extend the needs and expectations of customers.

With this mission, Mikropor continues to become one of the most recognized brands in the world by expanding its global penetration in the field of technological filtration and contributes to a healthier planet.

[www.mikropor.com](http://www.mikropor.com)

## MDX NITROGEN PURIFIER SYSTEM

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.

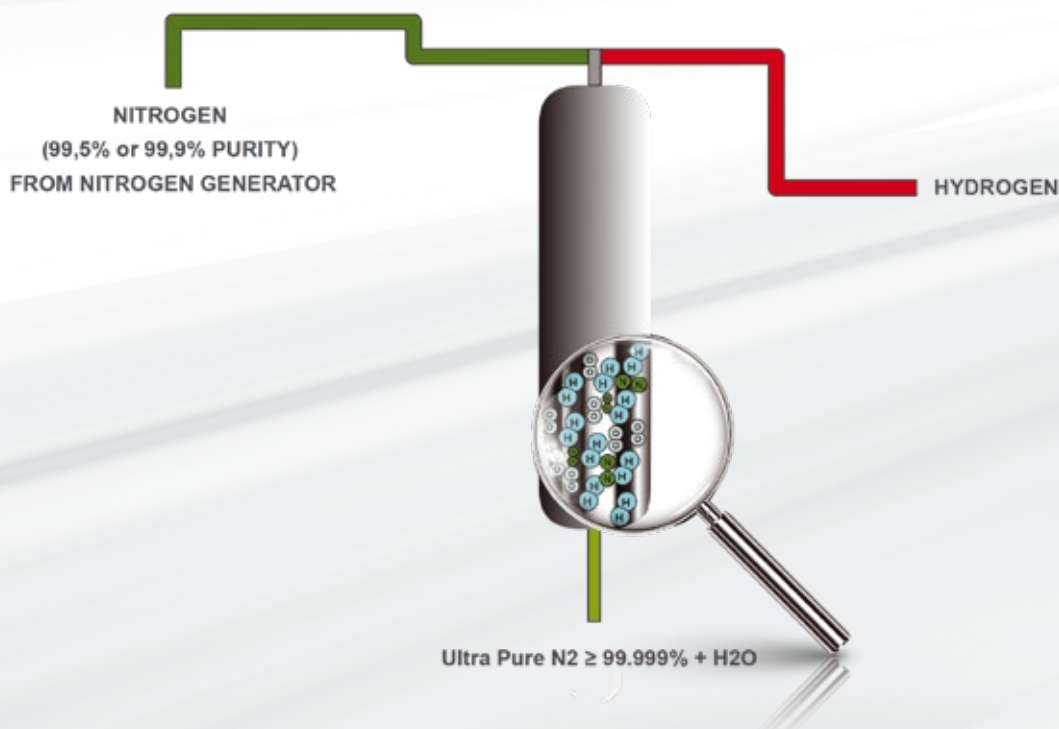
Mikropor's MDX Nitrogen Purifiers, combined with Mikropor's MNG Nitrogen Generators, utilise a small amount of Hydrogen gas during the reaction process to achieve high levels of Nitrogen purity by avoiding compressed air loss.

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.

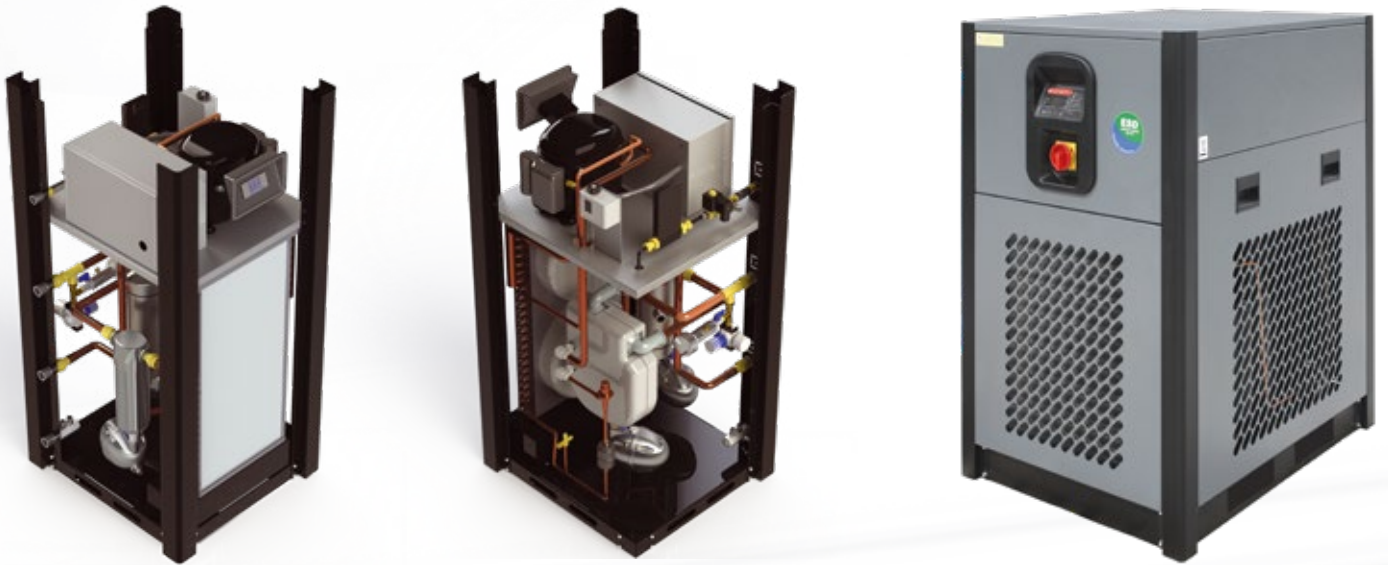
The system uses a catalytic reaction, whereby residual Oxygen from the MNG generator is removed from the PSA Nitrogen Generator output by utilising a reaction between the remaining Oxygen and Hydrogen gas to produce a purity of 99.999% Nitrogen. The only by-product of this catalytic reaction is water.



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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.

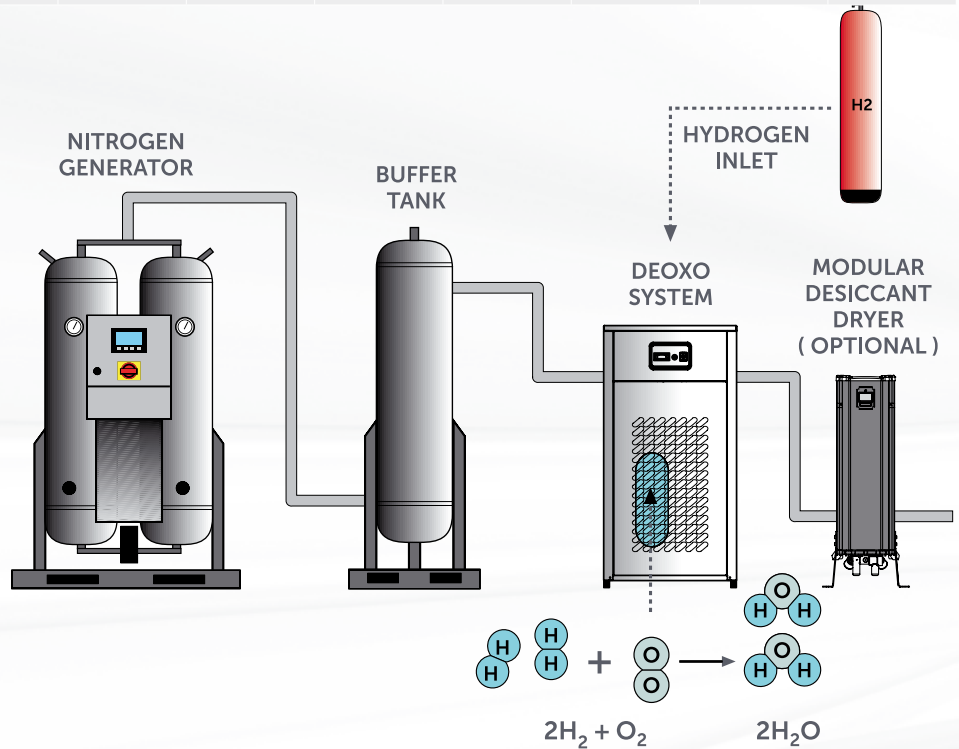


# MDX NITROGEN PURIFIER SYSTEM AIR & GAS LINE DESIGN AND CAPACITIES

## 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 <sub>2</sub> Flow at 99.999% Purity (m <sup>3</sup> /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 <sub>2</sub> Flow at 99.999% Purity (m <sup>3</sup> /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	



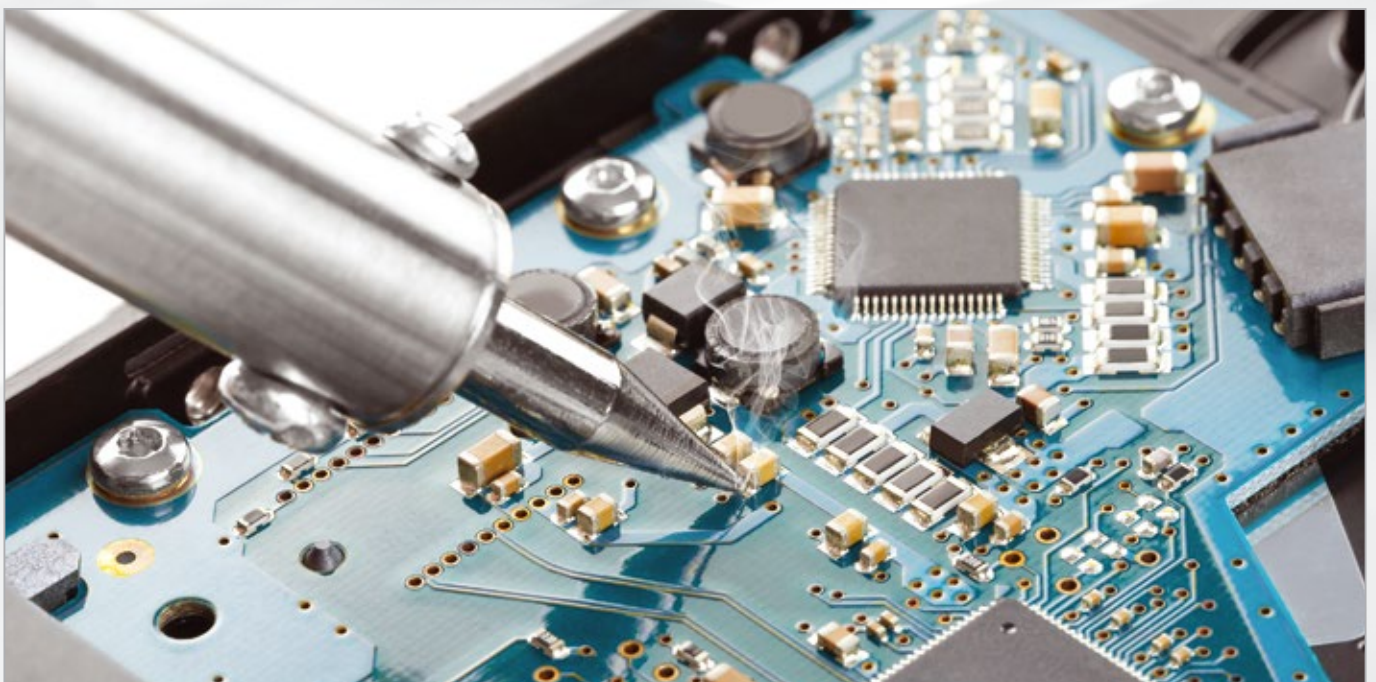
## Advantages

- 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 N<sub>2</sub> purity level.
- Up to 99.999% nitrogen purity with minimum space and energy requirement
- Low energy consumption
- Low CO<sub>2</sub> 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

## INVESTMENT AND OPERATING COST COMPARISON

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	-
<b>Total Investment Cost</b>	<b>122.584 EUR</b>	<b>149.411 EUR</b>
<b>Total Investment Cost Saving</b>	<b>26.827 EUR</b>	

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



# MDX NITROGEN PURIFIER SYSTEM



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