ies *innovative energy solution*















SELF-PRODUCTION OF NITROGEN AND OXYGEN

ies
AIR COMPRESSOR

ies
AIR COMPRESSOR

SKILLS AND STRATEGIES FOR THE FUTURE



I.E.S (Innovative Energy Solutions)

Twenty years of experience acquired in the field of compressed air have allowed **IES** to plan a complete range of systems for supplying compressed air: plants for production, treatment and distribution, particularly innovative and elegant, which combine the merits of quality and reliability with a particular attention to the user's requirements.

As well as offering a complete range of technological solutions for compressed air production, **IES** is committed to understanding your sector, your requirements and your production and service needs, to ensure you of the best solutions for achieving your business.

Energy saving is the inspiring principle of our design: **IES** innovative products are based on sustainability, creating an opportunity to guarantee new solutions for long-term business strategies.

MADE IN ITALY

NITROGEN



Nitrogen is an inert gas, but it is precisely this characteristic that makes it extremely important: thanks to its molecular structure, it has a very wide use for counteracting **oxidation** phenomena in various fields of industry:

- **Food**
- **Electronics**
- **Laser cutting**
- **Chemistry and pharmaceutical chemistry**
- **3D printing with metals**

NITROGEN AND OXYGEN

From air to industry thanks to IES, wherever you want, how you want, when you want

Nitrogen and **oxygen** are two gases necessary for many human activities. They are present in the air in different percentages: **78% Nitrogen and 21% Oxygen** make these 'raw materials' available naturally!

But how is it possible to capture them from the air and make them ready-to-use gases? The enormous potential and opportunities associated with the applications of these gases are the basis of **IES**'s ongoing research into the design and manufacture of **Nitrogen** and **Oxygen** generators that are capable of meeting any requirement in terms of functionality, safety and production volumes.

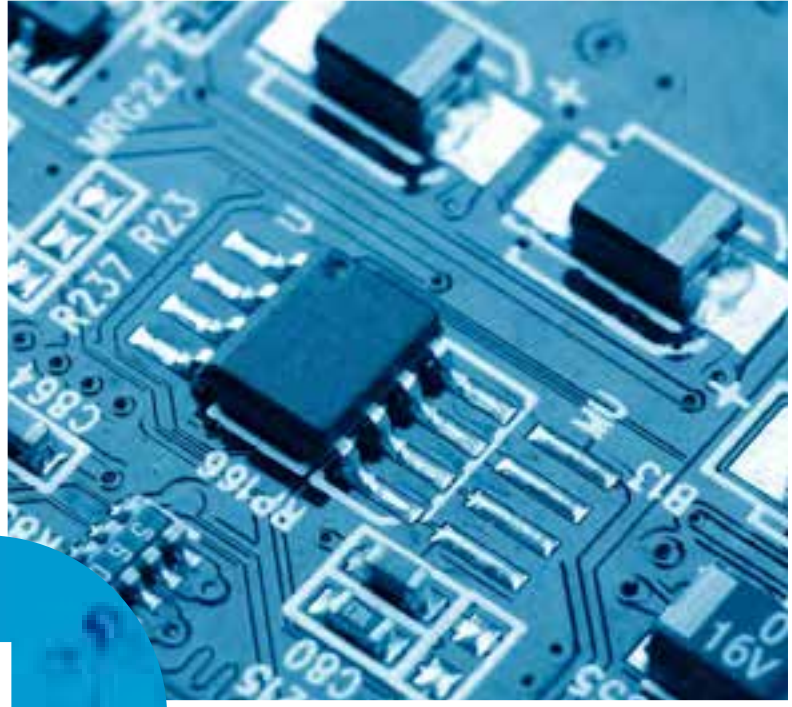
OXYGEN



Oxygen is the gas of life, extremely reactive. Its applications are manifold, linked precisely to its fundamental characteristic: oxygen is **necessary for life**, which is why its supply is required in the sectors:

- **Medical**
- **Veterinary**
- **Fish breeding**
- **Food**
- **Biogas**
- **Glass blowers**





N_2







FIELDS OF NITROGEN APPLICATION



FIELDS OF **OXYGEN** APPLICATION



O_2







Guaranteed benefits

Gas at your fingertips with no ties to suppliers.

Simplified administration: no more repeat orders, dozens of invoices and even advance payments.

Freedom from dangerous gas price fluctuations.

Maximum safety of use, with no risk of handling high pressure cylinders or cryogenic gases at -190°C.

Total control over the **purity** of the product **gas** supplied.

Minimum operating costs.

Minimum space requirement.

By producing your own gas, you can help the environment by **drastically reducing CO2 emissions** through the elimination of road transport, effectively branding your company as environmentally friendly.

Nitrogen can be generated in your company from compressed air.

The nitrogen and oxygen generator powered by a compressor separates the main components of the air, concentrating the nitrogen and oxygen to very high purity percentages.

Gas available
24 hours a day, 7 days a week

Continuous production:
no more delivery times

Guaranteed purity

Total safety

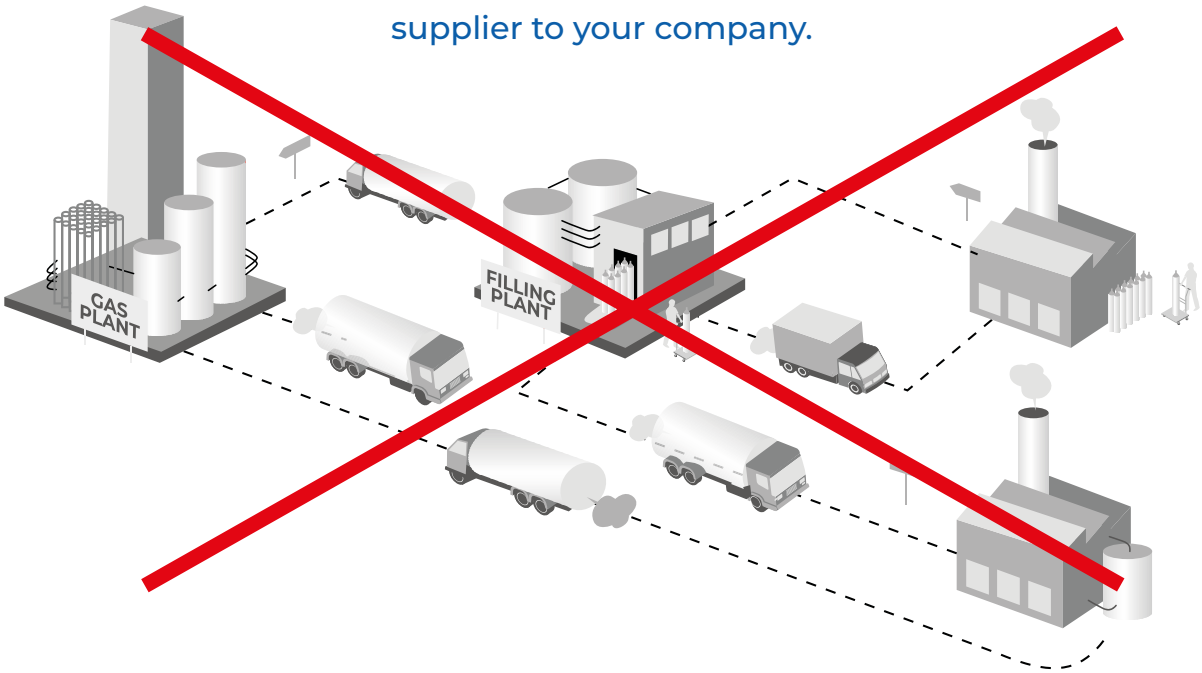
Savings
proven

No moreconstraints
logistical

Ecological solution:
zero pollutant emissions

No more supply chain failures

Traditional supply with the transport chain from the gas supplier to your company.





NITROIES - AN RANGE

With the nitrogen skid designed by **IES** you have a sustainable and cost-effective alternative to gas cylinders or liquid nitrogen supply.

With **IES** you can produce all the nitrogen you need for your production processes directly in your company.



1 - Screw compressor
2 - De-oiling filter
3 - Refrigeration dryer
4 - Air tank
5 - Nitrogen generator
6 - Nitrogen tank
7 - Booster
8 - Cylinder pack





PATENTED MODULAR PSA TECHNOLOGY

The NITROIES modular PSA (acronym: Pressure Swing Adsorpion) nitrogen generator is based on an unprecedented technology Unlike twin-tower plants, NITROIES plants consist of an assembly of modules containing the molecular setting and are based on an optimised and patented PSA process.

NITROIES - TECHNICAL DATA NITROGEN PRODUCTION RATE m3/h
NITROIES operates from 7 to 13 bar, nitrogen pressure up to 11 bar

40 bar N_2 SKID

MODEL	Gas purity	99,999	99,995	99,95	Compressor	Air tank	Nitrogen Generator	Nitrogen Tank	Booster	45 bar tank
	Residual O_2	10 ppm	50 ppm	500 ppm						
AN7-40		2,4	3,2	5,4	ECB 4	270	NI 7	270	BI 40	270
AN14-40		4,6	6,3	10,7	ECB 5,5	270	NI 14	270	BI 40	270
AN21-40		7,1	9,3	16,0	ECB 7,5	500	NI 21	500	BI 40	500
AN28-40		9,4	12,4	21,2	ECB 11	500	NI 28	500	BI 40	500
AN37-40		11,7	15,4	25,5	ECB 11	500	NI 37	500	BI 40	500
AN42-40		13,9	18,6	31,5	ECB 15	725	NI 42	725	BI 40	500
AN49-40		16,2	21,4	35,4	ECB 18	725	NI 49	725	BI 40	500
AN56-40		18,4	24,3	41,6	ECB 22	900	NI 56	900	BI 40	1000

300 bar N2 SKID

MODEL	Gas purity	99,999	99,995	99,95	Compressor	Air tank	Nitrogen Generator	Nitrogen Tank	Booster	45 bar tank
	Residual O_2	10 ppm	50 ppm	500 ppm						
AN7-300		2,3	3,0	5,2	ECB 4	270	NI 7	270	BI 300	12 Cylinder rack
AN14-300		4,4	6,1	10,3	ECB 5,5	270	NI 14	270	BI 300	12 Cylinder rack
AN21-300		6,8	8,9	15,4	ECB 7,5	270	NI 21	270	BI 300	12 Cylinder rack
AN28-300		9,1	11,9	20,4	ECB 11	500	NI 28	500	BI 300	12 Cylinder rack
AN37-300		11,2	14,7	24,5	ECB 11	500	NI 37	500	BI 300	12 Cylinder rack
AN42-300		13,4	17,9	30,2	ECB 15	725	NI 42	500	BI 300	12 Cylinder rack
AN49-300		15,5	20,5	33,9	ECB 18	725	NI 49	725	BI 300	16 Cylinder rack
AN56-300		17,7	23,4	39,9	ECB 22	900	NI 56	725	BI 300	16 Cylinder rack

REFERENCE DATA:
AMBIENT TEMPERATURE 20°C / 68°F
AIR YIELD REFERRED TO Nm3/H



DUAL BANK CONCEPT

For larger production capacities, a 'DUAL BANK' can be added, which consists of a second PSA nitrogen generator without PLC. The 'DUAL BANK' master receives its power and control signals from the NITROIES nitrogen generator via a single connecting cable.

OXYIES - OX RANGE

For industries looking for a safe and autonomous source of oxygen, **IES** is pleased to introduce OXYIES, a line of oxygen generators with 95% purity manufactured in-house.



1 - Screw compressor
2 - De-oiling filter
3 - Refrigeration dryer
4 - Air tank
5 - Nitrogen generator
6 - Nitrogen tank





PATENTED MODULAR PSA TECHNOLOGY

The OXYIES modular PSA (acronym: Pressure Swing Adsorpion) oxygen generator is based on an unprecedented technology Unlike twin-tower plants, OXYIES plants consist of an assembly of modules containing the molecular setting and are based on an optimised and patented PSA process.

OXYIES Oxygen production flow - 95% PURITY

OXYIES	PSA module	Oxygen production 95%		Compressor	Oxygen generator	Air tank	Tank Oxygen
mod.		Nm3/h	SCFH	mod.	mod.	Litres	Litres
OX 8	1	2,5	95	ECB 5,5	OI 8	200	200
OX 16	2	5	190	ECB 7,5	OI 16	200	200
OX 24	3	7,5	289	ECB 11	OI 24	500	270
OX 32	4	10	380	ECB 15	OI 32	900	500
OX 40	5	12,5	475	ECB 18	OI 40	1000	500
OX 48	6	15	562	ECB 22	OI 48	1000	500

REFERENCE DATA:
SUPPLY PRESSURE 7.5 BAR - 110 PSIG
AMBIENT TEMPERATURE 5-45°C / 41-113°F



DUAL BANK CONCEPT

For larger production capacities, a 'DUAL BANK' can be added, which consists of a second PSA oxygen generator without PLC. The 'DUAL BANK' master receives its power and control signals from the OXYIES oxygen generator via a single connecting cable.



HMI SIEMENS®

Allows remote monitoring/control of major process parameters and indicates status messages such as gas purity and total instantaneous flow, working hours and maintenance alerts.

MOBILN2

Is a compact nitrogen generator that guarantees on-site nitrogen production of up to 3,8 m3/h with a purity of 1 to 0,35% residual oxygen. Based on membrane technology, this generator is a perfect alternative for industries seeking a safe, economical, convenient and reliable supply of nitrogen.



Model		Mobil N2-1						Mobil N2-2						Mobil N2-3					
Content Oxygen		0,35 vol.%		0,50 vol.%		1,00 vol.%		0,35 vol.%		0,50 vol.%		1,00 vol.%		0,35 vol.%		0,50 vol.%		1,00 vol.%	
Air pressure	bar (g)	7,5	10	7,5	10	7,5	10	7,5	10	7,5	10	7,5	10	7,5	10	7,5	10	7,5	10
Oxygen production	m3/h	0,5	0,6	0,6	0,7	0,9	1,1	1,0	1,2	1,1	1,4	1,8	2,2	2,0	2,7	2,1	3,0	2,7	3,8
Pressure	bar (g)	6,6	8,6	6,4	8,4	6,2	8,2	6,5	8,5	6,3	8,3	6,1	8,1	6,4	8,4	6,2	8,2	6,0	8,0
	psig	96	125	93	122	90	118	94	123	91	120	88	117	93	122	90	119	87	116
Air consumption	m3/h	5,2	5,9	5,4	6,1	5,8	6,8	10,4	11,8	10,8	12,2	11,6	13,6	7,3	10,0	7,6	10,3	8,3	11,2
Dew point	°C	-40°																	
Noise	dB(A)	< 65																	

CONDITION:
Ambient temperature 20°C / 68°F

AIR REQUIREMENTS
Min / Max inlet air pressure: 7-10 bar / 101-145 psig
Max. air inlet temperature: +40°C / +113°F
Air quality: ISO 8573.1 / Class 0.4.0

INNOVATIVE ENERGY SOLUTIONS

MADE IN ITALY

RIVENDITORE AUTORIZZATO

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