

GENERATORS

NITROGEN

N₂

idealMakina®
Industrial Solution Supplier...

NITROGEN GENERATOR SYSTEMS

FOR CO₂ & FIBER LASER CUTTING MACHINES

FULL OF SUCCESS

2004 - 2024
20 years

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WHY ARE YOU PAYING MORE?

The Rent
Of Cylinder/
Liquid
Nitrogen
Vessel

Transportation

Domestic
Purchasing
Expenses

Transporting
Of Cylinders
And Labour
Expenses

Safety

DEALING WITH ALL THESE DETAILS!

PRODUCE YOUR OWN NITROGEN, FORGET YOUR CYLINDER OR LIQUID NITROGEN PURCHASING COSTS!

MOREOVER;

- The capacity you need,
- Purity as required by your manufacturing process,
- At pressure that needs to be,
- Under your control...



TOUCH CONTROL PANEL



NITROGEN GENERATOR
N₂

idealMakinA[®]
Industrial Gases Supplier

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Industrial Gases Supplier

NITROGEN GENERATOR
N₂

NITROGEN GENERATOR SYSTEMS

FOR LASER CUTTING MACHINES

**3 TIMES
FASTER THAN
OXYGEN
CUTTING**

**MUCH MORE
ECONOMIC
USAGE OF
NITROGEN**

**HIGH PURITY,
LOW ENERGY
CONSUMPTION**

**BETTER
CUTTING
SURFACE
QUALITY**

**ENHANCED
EDGE
QUALITY**

**NO NEED
DEBURRING**

**POST-CUTTING
WELDABILITY**

**PURITY RATE OF
99,999%**

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PRODUCE YOUR OWN **NITROGEN** WITH **PURITY** UP TO **99,999% BY PSA** LASER TECHNOLOGY

The nitrogen generators produce nitrogen gas from compressed air. The compressed air is pre-filtered in order to eliminate impurities such as humidity, oil vapor, particles and hydrocarbon.

The purified compressed air is being carried into the adsorption vessels filled up with CMS molecules. When the air is getting into contact with the CMS, Oxygen, Argon and Carbon Monoxide molecules are being hold by the CMS. Due to this, the dew point rate of the compressed air decreases and based on this process, a clean, dry and high-purity nitrogen gas is generated.

The produced nitrogen gas is then carried into a nitrogen buffer vessel and is subsequently compressed to the required pressure value up to 300 barg. Cylinder bundles are used as nitrogen gas buffer storage. Due to the high buffer storage capacity even high peak demand is covered without any problems. The number of cylinder bundles can be also increased related to the laser machine operational working hours and the thickness of the materials to be cut.

All values related to quality parameters, such as nitrogen purity, nitrogen pressure, compressed air temperature and pressure, as well as pressure dew point are continuously monitored via Touch Control Panel and is stored by data-logging on USB storage.

Ideal Makina Nitrogen Generator Systems provide significant cost savings compared to cylinder or liquid supply and a typical return of investment in less than 24 months.

Analyze your cylinder or liquid supply purchasing costs and compare it with the cost of your own nitrogen gas produced by Ideal Makina Nitrogen Generation System.

MAKE A BIG SAVE WITH THE IDEAL MAKINA PSA LASER NITROGEN GENERATOR SYSTEM

CLEAN COMPRESSED AIR

The air produced by screw compressor is being purified from humidity, oil vapor, particles and hydrocarbon with the help of dryers, filters activated carbon tower in the system. Ensuring the necessary purified compressed air is the most important key to produce nitrogen gas without any problem and for a long time.

The high quality of the Ideal Makina air compressors, air dryers, filters and Activated Carbon Towers guarantees a high efficient and economic running of the system.

IDEAL MAKINA NITROGEN GENERATOR

The PSA is the main core of the Laser cutting system. The nitrogen is produced by the use of high-grade activated carbon. Oxygen molecules are adsorbed by the activated carbon, the nitrogen molecules pass through the CMS and are stored in the product tank.

There are 17 generator models with capacity starting from 1 Nm³/h up to 300 Nm³/h which can produce nitrogen gas at the rate of 99,999% for Lasercutting applications.

IDEAL MAKINA HIGH PRESSURE NITROGEN BOOSTER

The produced nitrogen is compressed by the high-pressure compressor at 200 - 300 barg.

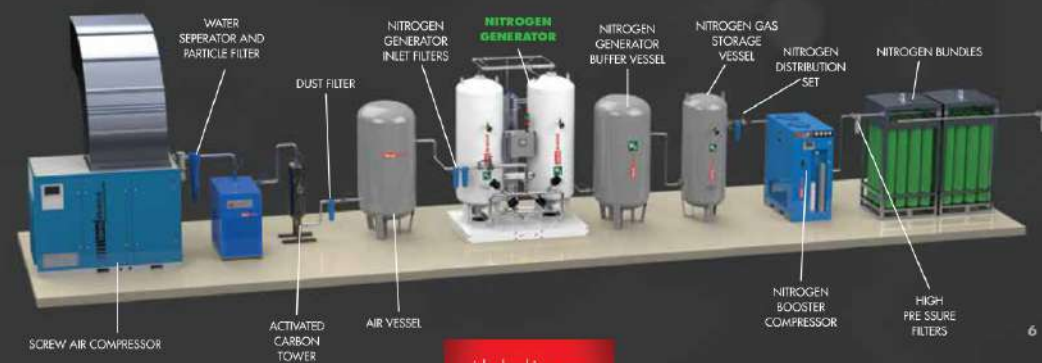
By using energy efficient motors and top quality high-pressure filtration system, all requirements go the manufacturers are satisfied on a cost effective basis.

NITROGEN BUNDLES

For the storage of the nitrogen there are cylinder bundles of 300 barg. When 12 pieces of cylinders are filled up with a pressure of 300 barg, 164 Nm³ of produced nitrogen gas will be ready to use for your laser cutting applications.

According to laser cutting machine type and quantity the capacity of nitrogen gas storage can be extended by increasing the number of nitrogen bundles.

NITROGEN GENERATOR SYSTEM LAYOUT PLAN (300 BARG)



CATOX NITROGEN PURIFIER

**50%
ENERGY
SAVING**

**INNOVATIVE
TECHNOLOGIE**

**GREEN
ENERGY,
LOW CARBON
FOOTPRINT**

**PURITY
UP TO
99,9999%**

NITROGEN PURITIES UP TO 99,9999% (Class 6.0) WITH AN AIR FACTOR 3.0

Some laser cutting machine users require the highest Nitrogen purity with the most cost-effective means possible.

IDEAL MAKINA CATOX Nitrogen Purifier System offers an extremely economic way to increase nitrogen purity levels beyond 99.9% all the way up to 99.9999% (1ppm residual Oxygen) purity.

CATOX is the true add-on technology for Nitrogen Generation applications requiring 1-5 ppm ultra high purity.

CATOX can easily be integrated with already existing Nitrogen Generator System (free from brand) resulting in high purity nitrogen gas at minimum costs.



idealMixer120 FOR MIX GAS CUTTING

High quality processing of thick mild steel

**CUT THICKER
MILD STEEL ON
SAME
FIBER LASER**

**FASTER
& BETTER
QUALITY
CUTTING**

**REMOTE
CONTROL
OVER LASER
OPERATOR
PANEL**

**COMPATIBLE
WITH ANY
FIBER LASER**

Gas mixing is another alternative to pure nitrogen or oxygen cutting, where a specific blend of those two gases is used. This process behaves very much like a nitrogen cutting process; however, the addition of a small amount of oxygen increases the available Energy in the cut. This mixture allows for the cutting speed to increase compared to cutting with nitrogen at the same laser power (as much as 30 percent faster linear feed rate) and at the same time, it reduces burr formation, resulting in a better-quality cut edge in thicker mild (carbon) steels.



**PLUG &
PLAY**

idealMakina®
Industrial Gases Supplier



SKID MOUNTED NITROGEN GENERATOR SYSTEMS

**MINIMUM
SPACE,
MAXIMUM
EFFICIENCY**

**COMPACT
DESIGN,
ALL IN ONE
SKID**

**NO
INSTALLATION
ON SITE,
READY TO
USE**

**SINGLE
TOUCH
CONTROL
PANEL**

ALL IN ONE, READY TO USE!

It is possible to produce your own nitrogen gas at indoor area in your plant with special designed Plug & Play, Skid Mounted Ideal Makina Nitrogen Generator Systems!

It is ready to use! All components of the system, including compressed air set, Nitrogen Generator, vessels and high pressure booster are installed onto the skid, mechanical and electrical connections are completed. The function and capacity tests of the systems are performed at Ideal Makina Factory. Operators can easily control the system from the main control panel.



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**PLUG &
PLAY**

idealMakina®
Industrial Gases Supplier



CONTAINERIZED NITROGEN GENERATOR SYSTEMS

**NO NEED
FOR
INDOOR
AREA**

**COMPACT
DESIGN,
ALL IN ONE
CONTAINER**

**HEAVY
DUTY,
MOBILE
CONTAINER**

**SINGLE
TOUCH
CONTROL
PANEL**

ALL IN ONE CONTAINER, READY TO USE!

Ideal Makina mobile, heavy duty, sound and heat insulated, ISO locked Containerized Nitrogen Generator Systems provide nitrogen production in any place you need.

It is ready to use! All components of the system, including compressed air set, Nitrogen Generator, vessels and high pressure booster are installed into the 10 ft, 20 ft, 30 ft, 40 ft or tailor-made designed containers, mechanical and electrical connections are completed. The function and capacity tests of the systems are performed at Ideal Makina Factory. Operators can easily control the system from the main control panel.

Thanks to our strong structural design, our systems can be easily transported to anywhere in the world by sea, road or air. Air conditioner, heater and rockwool insulation options enable the Nitrogen Generator System to operate in harsh climatic conditions.



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OUR NITROGEN GENERATOR MODELS

Models	Capacity (Nm ³ /h)	Nitrogen Purity (%)								
		95,0	97,0	98,0	99,0	99,5	99,9	99,99	99,995	99,999
		Quality: Corrected on O ₂ content								
		10.000 ppm								
		5.000 ppm								
		1.000 ppm								
		100 ppm								
		50 ppm								
		10 ppm								
IM-GN-25	6,20	5,40	4,80	3,90	3,10	2,20	1,50	1,10	0,90	
IM-GN-50	12,00	9,90	9,00	7,00	5,80	4,00	2,20	1,90	1,50	
IM-GN-80	19,00	15,00	13,50	10,50	9,50	6,00	3,30	2,70	2,20	
IM-GN-100	27,00	21,00	19,00	15,00	12,50	8,50	4,50	3,50	2,90	
IM-GN-150	34,00	30,00	27,50	22,00	18,00	12,00	8,50	6,40	4,70	
IM-GN-250	55,00	45,00	39,50	31,00	27,50	19,00	12,00	10,00	7,50	
IM-GN-330	68,00	53,00	47,00	39,50	35,00	24,00	16,00	13,50	9,20	
IM-GN-400	90,00	66,00	59,50	52,00	46,00	31,50	20,00	17,00	11,00	
IM-GN-450	96,00	74,00	67,00	58,00	50,00	40,00	25,00	21,00	15,00	
IM-GN-500	112,00	90,00	82,00	70,00	58,00	45,00	29,50	24,50	19,00	
IM-GN-700	148,00	122,00	103,00	84,00	75,00	55,50	38,00	29,00	24,50	
IM-GN-1000	219,00	178,00	154,00	118,00	102,00	76,00	48,00	40,50	31,00	
IM-GN-1200	266,00	219,00	194,00	150,00	130,00	97,00	63,00	54,00	44,50	
IM-GN-1400	312,00	260,00	233,00	180,00	151,00	114,00	72,00	62,00	52,00	
IM-GN-1700	381,00	320,00	290,00	220,00	183,00	139,00	85,00	74,00	63,00	
IM-GN-2000	446,00	372,00	325,00	255,00	222,00	164,00	105,00	91,00	72,00	
IM-GN-3000	638,00	530,00	464,00	371,00	326,00	241,00	151,00	124,00	99,00	
IM-GN-4000	920,00	780,00	680,00	515,00	440,00	328,00	207,00	178,00	140,00	
IM-GN-5500	1170,00	955,00	840,00	650,00	599,00	427,00	263,00	208,00	172,00	
IM-GN-6500	1380,00	1140,00	990,00	755,00	655,00	485,00	299,00	242,00	197,00	
IM-GN-7500	1600,00	1325,00	1160,00	880,00	750,00	565,00	347,00	289,00	229,00	
IM-GN-8500	1830,00	1515,00	1325,00	1000,00	850,00	625,00	388,00	325,00	250,00	
IM-GN-10000	2150,00	1790,00	1550,00	1200,00	1000,00	740,00	445,00	360,00	282,00	
IM-GN-12500	2400,00	2125,00	1790,00	1380,00	1200,00	845,00	535,00	405,00	313,00	

* All values were measured under 7 bars compressor pressure and +25°C air/ambient temperature.

* Please contact our engineers for different capacity and purity values.

COMPRESSED AIR REQUIREMENTS

Temperature Range +5 ... +50°C

Air Quality ISO 8573-1 Class 1.4.1

Dew Point +3°C

AMBIENT CONDITIONS

Temperature Range +5 ... +40°C

Option -50 ... +60°C

TECHNICAL FEATURES

Max. Working Pressure 11 bar

Power Connection 230V, 50Hz

Noise Level 55 → max. 85 dB(A)

Energy Consumption 150W

Protection Class IP 54

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SOME OF OUR REFERENCES



LASER MACHINE BRANDS USED BY OUR CUSTOMERS



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SOME OF OUR REFERENCE PROJECTS

GERMANY

MADER

2021



TURKMENISTAN

NURLU YATIRIM

2020



İSTANBUL
TURKEY

AYVAZ

2021



SAKARYA
TURKEY

TIRSAN

1. SYSTEM 2019
2. SYSTEM 2021

SOME OF OUR REFERENCE PROJECTS

BOSNIA AND
HERZEGOVINA



2019



LEBANON

J&P STEEL

2017



QATAR



2021



ROMANIA



2021

SOME OF OUR REFERENCE PROJECTS

SOME OF OUR REFERENCE PROJECTS



POYRAZ PASLANMAZ
Steel in Black by steel concept

2020



MANİSA
TURKEY

ÖRNEK
MAKİNA

2017

SOME OF OUR REFERENCE PROJECTS



İSTANBUL
TURKEY

DEMİRCİOĞLU MAKİNE
TANIRI, TUNÇ, ve ÇELİK
SARAY, İZMİR, 1300, 500

1.SYSTEM 2014
2.SYSTEM 2018



GERMANY

stengel
steel concept

2022





SOME OF OUR REFERENCE PROJECTS

İZMİR
TURKEY



2014



İSTANBUL
TURKEY



1.SYSTEM 2016
2.SYSTEM 2018



SOME OF OUR REFERENCE PROJECTS

AKSARAY
TURKEY



1.SYSTEM 2016
2.SYSTEM 2017
3.SYSTEM 2021



ADANA
TURKEY



1.SYSTEM 2020
2.SYSTEM 2021





SOME OF OUR REFERENCE PROJECTS

KAYSERİ
TURKEY



YILMAZ
SAC PROFİL SAN. TİC. LTD. ŞTİ.

2020



BALIKESİR
TURKEY



2022



KOCAELİ
TURKEY



2022



İSTANBUL
TURKEY



2021



SOME OF OUR REFERENCE PROJECTS

BURSA
TURKEY



2018



İSTANBUL
TURKEY



2018



KOCAELİ
TURKEY



2016



İSTANBUL
TURKEY



2018



SOME OF OUR REFERENCE PROJECTS

ANTALYA
TURKEY

 **Fiberli**

2018



ANKARA
TURKEY

 **DİKTAS**

2018



SOME OF OUR REFERENCE PROJECTS

MERSİN
TURKEY

 **Letra**
REKLAM

2018



MERSİN
TURKEY

 **AK**

2018



SOME OF OUR REFERENCE PROJECTS

AMASYA
TURKEY

AKBAŞ
DİŞ TİCARET

2017



ÇORLU
TURKEY

ÖZ-SAC
İmalat san. ve tic. ltd. şti.

2017



SOME OF OUR REFERENCE PROJECTS

İZMİR
TURKEY

LAZER
İZMİR

2018



İSTANBUL
TURKEY

Legoraf
shop fitting

2015



SOME OF OUR REFERENCE PROJECTS

İSTANBUL
TURKEY

ÜNSAL
METAL

2018



SAKARYA
TURKEY

YKG

2016



AMASYA
TURKEY

TAKOZLAR

2017



BURSA
TURKEY

nuri körüstan

2016



PROJECT DESIGN AND PRODUCTION SAMPLES



OUR CERTIFICATES AND INTERNATIONAL QUALITY CERTIFICATES



HEAD OFFICE



FACTORY

DESIGN



Ideal Makina Gas Generators are designed and developed in CAD program by our R&D Engineers. In addition the Software of the PLC Control Systems are designed by our Electronical Engineers.

PRODUCTION



All pipe welding, mechanical connection and electrical wiring works of Ideal Makina Nitrogen Generators are completed in our factory by our Production Team of 25 people.

TEST



Each manufactured Ideal Makina Nitrogen Generator is tested in our Factory Test Area to confirm the parameters (capacity/performance, purity, pressure, dew point, temperature) of the final product. Based on the results, the relevant test report is prepared. In case of request, we organise FAT (Factory acceptance test) and SAT (Site acceptance test) and provide their reports.

SHIPMENT



Each Nitrogen Generator undergoes a packing procedure according to the manufacturer's instructions before shipment to the customer. If the generators are to be transported by air cargo, they are packed in special wooden boxes. For other types of shipping, generators are packed in bubble wrap and black stretch on wooden pallets.

FULL OF SUCCESS

2004 - 2024
20 years

"Industrial solution supplier Ideal Makina has started its journey in 2004.

We design and manufacture oxygen generators, nitrogen generators and special purifiers for gas generators at 5000 m² factory located in Istanbul Turkey.

Ideal Makina serves high quality tailor made solutions to its customers with PSA Gas Generators for industrial and medical applications.

Ideal Makina provides after sales service to gas generators operating in more than 70+ countries with its 20+ people technical service team and local service partners."

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Industrial Solution Supplier...

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