



PLASMA NITRIDING SOLUTIONS
Efficient and environmentally friendly technology





GlowTech, NitrEos and GlowFit

3 plasma nitriding solutions
tailored to your business needs

- Highly advanced Ion/plasma nitriding systems
- Efficient and environmentally friendly technology
- Production and Lab-results data correlation software.

Our furnaces offer an environmentally friendly process which uses plasma as a source of energy for chemically modifying the surface of parts made of steel by adding Nitrogen, or Nitrogen + Carbon into the part's surface aiming to:

Increase surface hardness

Increase wear resistance

Increase corrosion resistance

Increase fatigue resistance

Lower the friction coefficient

Avoid conventional heat treatment distortions



WE ARE IONHEAT

Advanced materials and process engineering

APPLICATIONS

- Bearings, gears, shafts, precision screws y sliding components.
- Energy generation components and synchronizing rings.
- High efficiency engines, engine valves and valve seats.
- Dynamic hydraulic and pneumatic elements.
- Stamping and pressing dies.
- Cutting tools.
- Injection molds.
- Forging tools.
- Aircraft components.



ADVANCED PROCESS ENGINEERING

Due to its capabilities of sputter cleaning the parts to be nitrided, and the repeatability of the process based on advanced control engineering, ion/plasma technology offers the best results of all nitriding processes.

Our GlowTech and NitrEos systems, offer cutting edge plasma nitriding technology including the following characteristics.

Hot-Wall

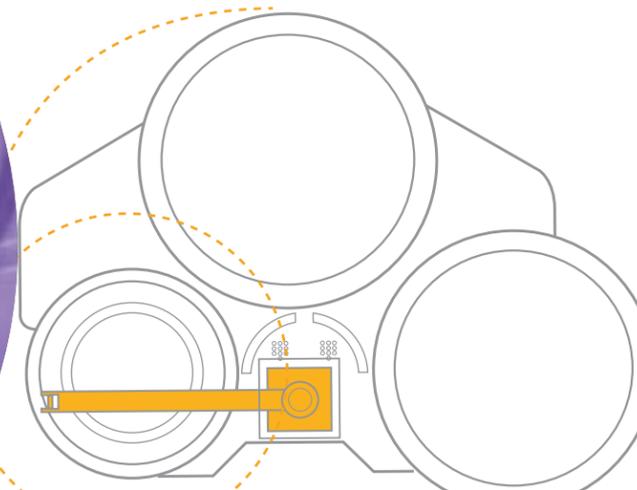
The hot-wall systems yield better process control through perfect temperature uniformity. This type of system allows higher flexibility of the loads to be processed since different masses and surface areas among parts in the same load are possible. The system is equipped with independent heating and cooling zones to guarantee a uniform temperature.

Small footprint

Our system's design, occupies a smaller footprint than many others in the market. A single rotating (Glow-Tech), or lifting (NitrEos) column, lifts and/or rotates vessels as needed for loading/unloading operation.

Bipolar Pulsed Plasma

The right power electronics were developed in order to be able to manufacture a power supply with the highest standards. DC over current protection, ultra-fast arc detection system and frequency and duty cycle flexibility allows for perfect and repeatable results.





Complementary Nitriding Treatments

GlowTech systems can perform any nitriding related treatment, be it nitrocarburizing control of white layer, or post oxidation, necessary to meet the high and vast demands on parts and tools of today's industry.

Advanced and user-friendly control software

GlowTech systems can perform any nitriding related treatment, be it nitrocarburizing control of white layer, or post oxidation, necessary to meet the high and vast demands on parts and tools of today's industry.

Equipment tailored to your needs

Our bell type plants are available in different dimensions, and can be adapted to customer demands. New designs provide the option of placing plant base on floor or to have it built in such that loading of the system occurs at ground level, the latter being a good option in case height of the installation site is a limiting factor.

Plug and play installation system

Our plants are equipped with an efficient plug and play system, allowing for an easy and highly cost effective installation.

OUR SOLUTIONS FOR YOU....



GlowTech

MODULAR SYSTEM TO ASSEMBLE THE FURNACE AS YOUR BUSINESS REQUIRES

With a highly advanced automation, our GlowTech systems reach new heights in Ion/Plasma Nitriding processes. Due to its modularity, these systems allow the user to build up capabilities step by step on the same equipment as production volumes require it. The plant can be easily expanded after purchase to a semi-tandem, or a full tandem system, and different features like NADCAP compliance add-ons, or controlled post-oxidation can be also added. This model offers the most consistent results of all solutions and guarantees perfectly controlled metallurgical results.



NitrEos

COMPACT FURNACE SYSTEM FOR STANDARDIZED PROCESSES AND REPEATABILITY OF RESULTS

NitrEos is an all-new compact and light weighted single furnace design. In order to create it IonHeat reinvented a classic model. We simplified our GlowTech system and refined it even further to introduce an off the shelf solution into the market without detriment of the exceptional ion nitriding technology that characterizes our products. Precision and simplicity best describe our NitrEos plants.



GlowFit

A NEW HEART TO MODERNIZE YOUR OLD FURNACE

Those pioneer Ion nitriders from the past century can still plasma nitride your parts like a champ. Introducing our Retrofitting kit will allow customers to upgrade existing plants with new controls, gas panels, top of the line plasma power supplies and our unique SCADA man/machine software.

A COMMON BRAIN FOR ALL SOLUTIONS...

Our control software includes a 19" screen, a user-friendly interface, and data logging of all production variables. The software package includes a module for inserting lab results from each production order for perfect traceability and combined customer reports.



AMONG ITS CHARACTERISTICS ARE:

- Different users and security levels, configurable by the customer.
- Centralized control for different furnaces and portability so from your phone or tablet you can monitor what's happening with your nitriding processes.
- Recipe module, for creating and managing recipes as well as their modifications. The system has a friendly recipe creation wizard which allows the user to easily create them by typing only the right parameter on each step (time, temperature, atmosphere composition, plasma power supply voltage, current, pulses etc). Recipes are stored to run them over and over again for a given product allowing the process to yield the same results every time.
- Production Orders Module allows linking a specific production order to already existing commercial documents like work orders etc.
- Pictures of the load, taken by the mobile app, or pictures taken by the cameras of the system can also be linked to production order for nice customer's reports.
- Lab Report Module allows the user to introduce the results obtained from the lab and relate those to a specific production order.

Some of the information that can be inserted is:

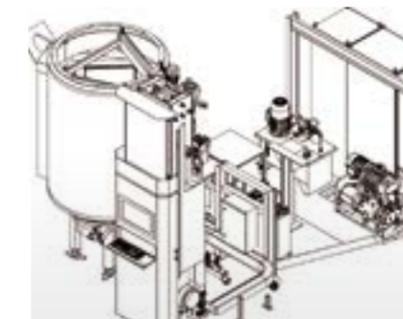
+ Location of the test coupon inside the vessel. 24 possibilities by simply clicking on a preset diagram.

+ Micro hardness profiles
+ Micrographs
+ Surface hardness in HRc and HR15N

GlowTech

Tailored to your needs

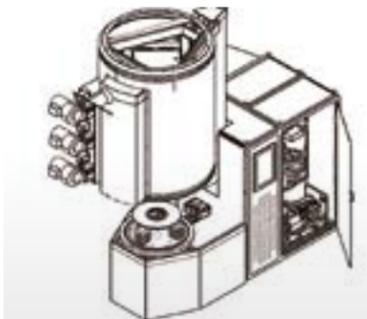
- Modularity
- User expandable
- Semi or full Tandem
- NADCAP compliant



NitrEos

Powerful utility System

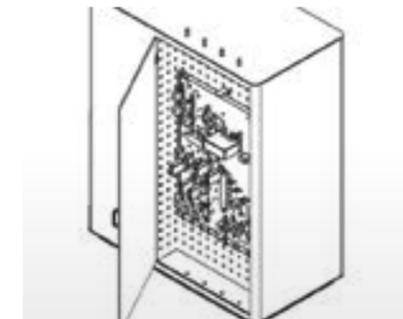
- Compact and light
- Simplified system
- Precision and Simplicity



GlowFit

A new heart for your furnace

- Advanced and precise atmosphere control
- Production control software
- Bipolar pulsed plasma power supplies



	System Size			
	0610	0815	1220	1522
Useful diameter mm/in	600/24	800/31	1200/47	1500/59
Useful height mm/in	1000/39	1500/59	2000/79	2200/87
Available semi tandem	YES			NO
Available full tandem	YES			NO
Number of Heating Zones	3	3	3	3
Standard number of power supplies included	1	2	3	3
Total plasma generator power (kW)	40	80	120	120
Peak power for a single system (kW)	95	110	205	300
Peak power for a semi tandem system (kW)	100	120	215	310
Peak power for a full tandem system	145	180	330	480

	System Size			
	0610	0815	1220	1522
Useful diameter mm/in	600/24	800/31	1200/47	1500/59
Useful height mm/in	1000/39	1500/59	2000/79	2200/87
Available semi tandem	NO			NO
Available full tandem	NO			NO
Number of Heating Zones	2	2	3	3
Standard number of power supplies included	1	2	2	2
Total plasma generator power (kW)	40	80	80	80
Peak power for a single system (kW)	85	110	210	240
Peak power for a semi tandem system (kW)	NOT APPLICABLE			
Peak power for a full tandem system	NOT APPLICABLE			

Our GlowFit unit is configurable in all its main functions.

PLASMA POWER SUPPLIES

From 1 power supply with 40kW plasma power up to 4 units in parallel for a total of 160kW total plasma power the customer can choose or grow their system as needed.

GAS PANEL

Whether NADCAP is, or is not a must for the customer, the gas panel can be configured accordingly. Argon and Methane MFC's can also be added as needed. Everything is controlled from our central control software.

ELECTRICAL CABINET

Our electrical cabinet can be set so that a cold wall system, as well as a hot wall system can be retrofitted. Fast configurations are possible.

CONTROL SOFTWARE

Our unique control software is always included with our GlowFit unit.

GlowTech

NitrEos

GlowFit

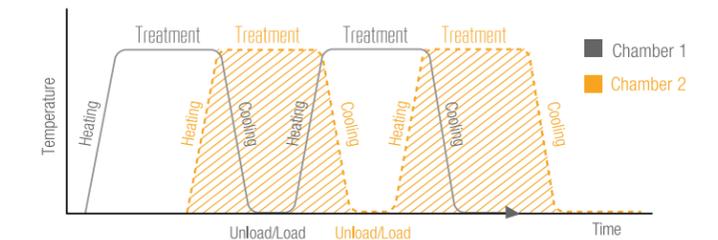
- Extra Power supply** Extra power supplies are always good when the customer has a high surface area which needs a lot of plasma power. Up to 4 plasma power supplies can be factory or customer added in parallel to the ones that come as standard in the equipment.
- Extra Gases** Argon and Methane Mass Flow Controllers can be added as needed for processing of stainless steel and/or Ferritic nitrocarburizing. This feature is only available factory added.
- Post Oxidation** Our GlowTech system can be upgraded with post oxidation capabilities. Standard, or controlled with a vacuum safe oxygen sensor, the Post-Oxidation process provides a nice black corrosion protective finish to the nitride parts.
- Top Camera-Viewport** Our GlowTech system can be improved with a top viewport which includes a digital camera for monitoring the plasma process from the control software interface. Pictures can be captured to be added to customer reports. This feature can only be factory added.
- Aerospace package** Our aerospace package allows the user to qualify its furnace to comply with NADCAP requirements. This option can be factory or customer added at a later stage.
- Air cooled center anode** An air-cooled center anode can be factory or customer added to our GlowTech system. The center anode provides improved temperature uniformity between the peripherals and the center of the bell by removing extra heat concentrated in the middle of the vessel.
- Internal recirculation fan** A vacuum safe, internal recirculation fan can be added to our GlowTech system for further improved convection heating and cooling of the load during processing. This feature can be factory or customer added at any point in time.
- Side Viewports** Up to two side Viewports can be added to our system if the customer would like to look at the plasma discharge inside the furnace. This feature can only be factory added.
- Tandem Systems Available** If the budget calls for a semi-tandem or full tandem system, ION-HEAT can do it for you. Tandem systems use the same power supply, vacuum systems and gas input for two separated chambers. This gives the customer the flexibility needed for increased productivity at a lower initial investment.

GlowTech tandem systems are the most efficient of its class in the market, they allow continuous treatment between the two chambers when maximum productivity is needed. This is due to a unique feature of our plant which allows sharing resources between different production order being ran in the two different chambers.

Adding modules like a second base to convert the system to a semi-tandem furnace and a second bell to convert it to a full tandem system, is a great advantage to our GlowTech units. Modules can be easily added at any point in time with very little installation efforts.



GlowTech



TYPE OF SYSTEMS AVAILABLE

- Single Systems: Just one base and one top vessel.
- Semi-Tandem systems: Two bases and just one top Vessel which uses both bases.
- Full tandem systems: Two Bases and two Top Vessels.



CONTACT

Colombia | Rionegro

Engineering - Manufacture of plasma
nitriding furnaces - Export logistics

📍 Zona Franca de Rionegro, Bodega 132

📞 +57 (4) 520 3280

✉️ +57 310 426 4843

United States

Heat Treating Equipment & Thermal

📞 +1 864 915 7584

✉️ rmonahan@htetps.com

Europe

Electron Thermal Processing Equipment BV

📞 +31 33 246 0888

✉️ j.koelewijn@elecron-tpe.com

Brazil

LMTERM - Thermal Processing Technology

📞 +55 (12) 3021 4781

✉️ luciano@lmterm.com.br

