

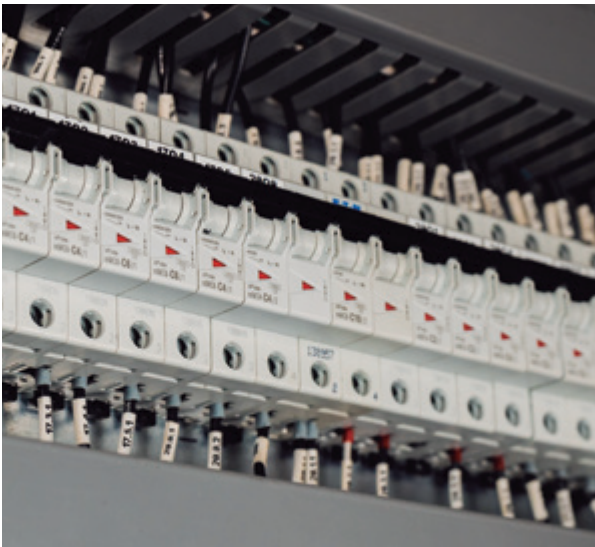


Plasma does it!

Plasma nitriding furnaces and retrofits



Plasma nitriding furnaces and retrofits



ENVIRONMENTALLY FRIENDLY

Plasma nitriding uses hydrogen and nitrogen as process gases. As they are non-corrosive, they extend equipment life, reduce maintenance costs and ensure an efficient and clean process.



www.ionheat.com
GO TO WEB



ION HEAT, your first choice

Technology that guarantees the best results of all nitriding processes.

We are the world's most innovative heat processing equipment manufacturer.
OUR TECHNOLOGICAL SOLUTIONS GUARANTEE YOU:



Best results of all nitriding processes.



Perfect temperature uniformity.



Flexibility for nitriding parts of different geometries and masses within the same batch.



Advanced metallurgical control.



Repeatable results.



Sputter cleaning of the parts to be nitrided.

If you need to modify the surface of parts made of Steel, Nickel Alloys or Titanium Alloys, with an environmentally friendly Nitriding Process, know that: **PLASMA DOES IT!**



GO TO WEB
www.ionheat.com



FAQ'S
Plasma nitriding fundamentals



www.ionheat.com
GO TO WEB



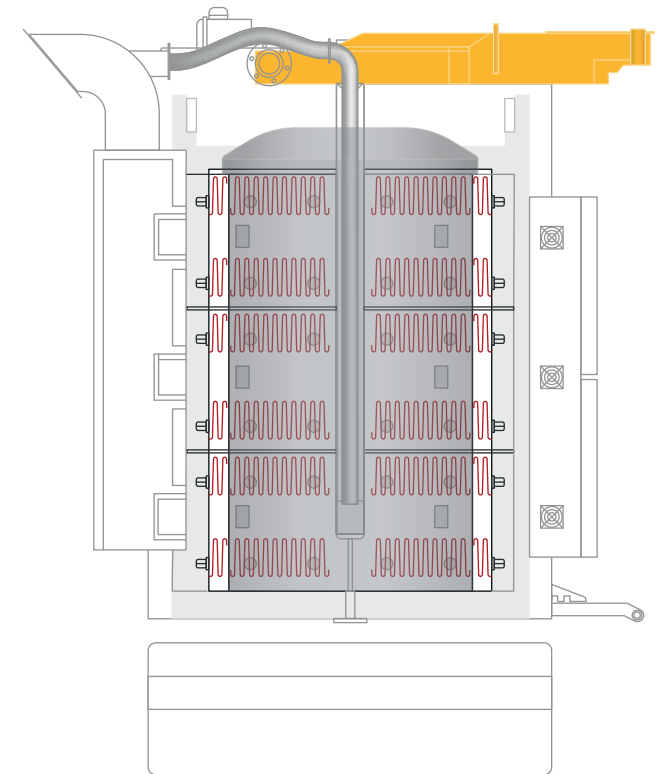
Advanced Process Engineering

High precision systems for plasma nitriding of critical parts of industrial, automotive and aerospace industries.

By perfectly combining bipolar pulsed plasma and heating elements as heating sources, you can process parts of different sizes and geometries and obtain the same metallurgical results. .

Hot wall Vacuum Chamber

- Separate heating and cooling zones for high temperature uniformity between the upper and lower part of the chamber: +2C -
- Faster degassing of the walls for increased productivity.
- Fewer arc discharges
- Shower system that allows for uniform gas distribution in the chamber.
- More cleaner and uniform results.
- Easy acces and maintenance of heating elements and insulation.



MAXIMUM WALL TEMPERATURE*

850 °C

* Only for the two smaller furnaces



MAXIMUM WORKING DIMENSIONS

1500 mm x 2200 mm



MAXIMUM LOAD WEIGHT

5000 kg



www.ionheat.com

GO TO WEB

↳ Lifting System

The hydraulic system lifts and rotates the bell to facilitate the loading/unloading operation of the parts to be nitrided, also functions as an enclosure for the gas panels, PC, handling PLC. The design of the lifting system of the ION HEAT furnaces occupies a smaller footprint than many others on the market.



↳ Power Supply

A bipolar pulsed plasma power supply which generates the exact voltage to ionize the process gases and create plasma. Power electronics provide DC overcurrent protection, detect arcs in less than 200 nanoseconds, ensures frequency flexibility, turn off the pulse in less than 1 μ s and allow for duty cycles with repeatable results.



↳ Temperature Control

Precise temperature control thanks to the combination of ventilation channels outside the vacuum retort, an air cooled center anode, variable speed internal motor and fan, 3 independently controlled heating zones.



↳ Gas Panel

Subsystem that injects the precise gas mixture and ensures that the nitridding atmosphere is as per metallurgical recipe. Mass flow controllers for nitrogen and hydrogen.



↳ Vacuum System

Heavy duty dry vacuum pumping system, with sealing system that guarantees final vacuum levels in less than ten minutes.



↳ Controls and Data storage

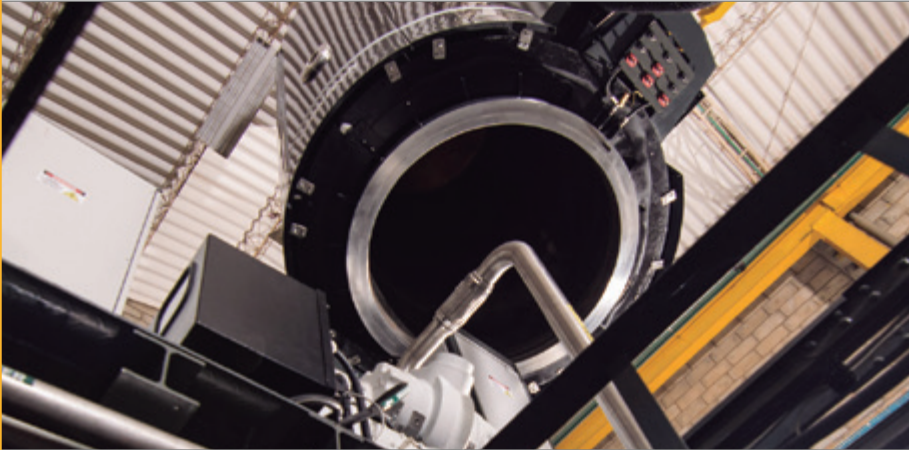
PLC automation system controls all process variables. In addition, allows to create, store and recall process recipes, as well as intuitive report generation for internal control or certification bodies. Web-based HMI and easy remote monitoring from any desktop or mobile device.



www.ionheat.com
↳ GO TO WEB

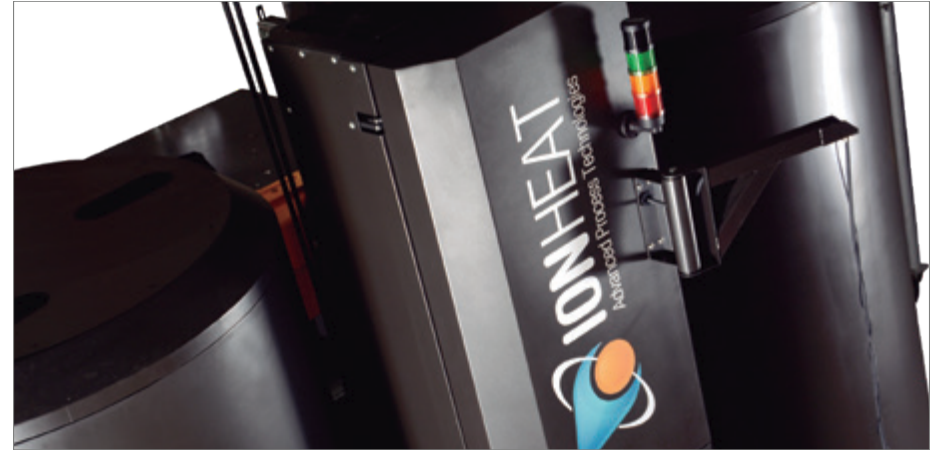


ADVANTAGES



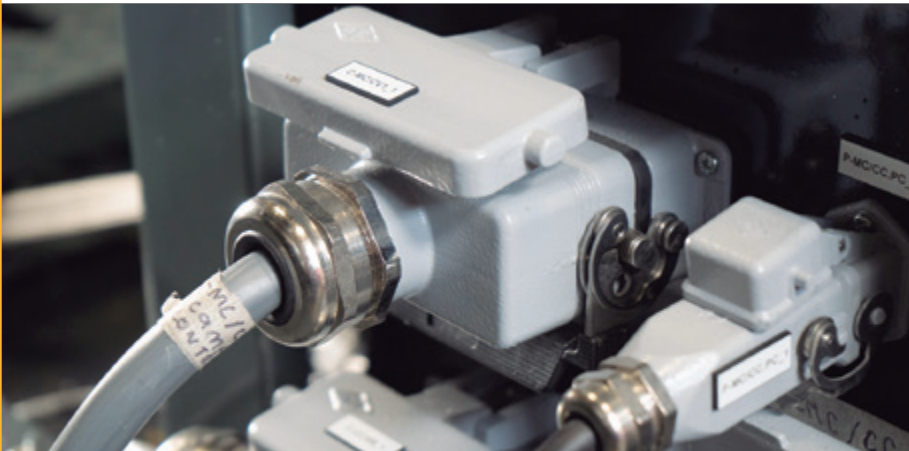
SMALL FOOTPRINT

System's design requires a smaller footprint than many others in the market.



PRESET MEASUREMENTS

Bell type plants are available in different dimensions, and can be adapted to customer demands



PLUG AND PLAY

ION HEAT furnaces and retrofits are equipped with an easy and cost-effective installation system



CUSTOMIZED FIXTURE

We design the fixture so that your parts achieve perfect nitriding on all surfaces, optimize batch space and obtain precise results.



www.ionheat.com
GO TO WEB



Choose your furnace

ION HEAT offers 3 different Plasma Nitriding Solutions:

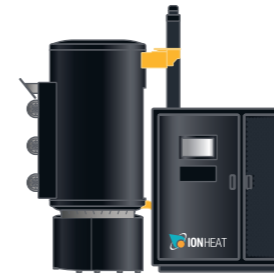


GlowTech

Modular system to assemble the furnace as your business requires.

Tailored to your needs

Tandem system allows the user to build up furnace capabilities step by step on the same equipment as production volumes require it.



NitrEos

Compact fit for standardized processes and repeatability of results.

Powerful utility System

Lightweight single furnace design simplifies the GlowTech system for standardized performance and recipe-tested.



GlowFit

Retrofit kit for modernizing old plasma nitriding furnaces.

A new heart for your furnace

Retrofitting model upgrades old units with new controls, gas panels, plasma power supplies and our unique control software.

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**
 Allows additional configuration settings for NADCAP compliance and extragases of argon and methane.
- Electrical Cabinet**
 Allows retrofitting both cold wall and hot wall systems. Custom configurations are possible.
- Control Software**
 Our unique control software is always included with our GlowFit unit.

System Size	0610	0815	1220	1522	0610	0815	1220	1522
Useful diameter mm/in	600/24	800/31	1200/47	1500/59	600/24	800/31	1200/47	1500/59
Useful height mm/in	1000/39	1500/59	2000/79	2200/87	1000/39	1500/59	2000/79	2200/87
Available semi tandem	YES	YES	YES	YES	NO	NO	NO	NO
Available full tandem	YES	YES	YES	YES	NO	NO	NO	NO
Number of Heating Zones	3	3	3	3	2	2	3	3
Standard number of power supplies included	1	1	2	3	1	1	2	2
Total plasma generators power (kW)	40	40	80	120	40	40	80	80
Peak power for a single system (kW)	95	110	205	300	85	110	210	240
Peak power for a semi tandem system (kW)	100	120	215	310	N.A.	N.A.	N.A.	N.A.
Peak power for a full tandem system	145	180	330	480	N.A.	N.A.	N.A.	N.A.



www.ionheat.com
 GO TO WEB



GlowTech, overcoming the extraordinary

The precision engineering and customization flexibility of this furnace makes it the category leader. If you are looking for superior results, our GlowTech model is for you.



www.ionheat.com
GO TO WEB

FEATURES MAKE IT AN EXCEPTIONAL FURNACE

Process-driven Design

We optimize the design and performance of the furnaces according to the metallurgical recipes required by your industrial manufacturing processes, either by their materials (conventional steels, stainless steels, titanium or nickel alloys), or the processes required (NADCAP, nitriding, FNC ferritic carbonitriding, post oxidation, among others).

Tandem System

GlowlTech modular configuration offers the possibility to start with a single system and upgrade to a semi tandem or tandem in the future, bringing flexibility to your CAPEX.

- Expand your furnace as your business requires / demand grows.
- If you have a full tandem unit: Plasma nitriding the parts in one vacuum chamber while preheating the second unit, reducing the working time between batches by up to 30%. Also, perform maintenance on one chamber without stopping production.



DO YOU NEED MORE CAPACITY?

We can power your full tandem furnace with 2 units sharing the same lifting mechanism and control display. This configuration allows for plasma to run in both chambers at the same time for maximum productivity.

Almost as if you had 2 furnaces



FULL TANDEM

2 bases + 2 bells + shared resources
This configuration saves the loading, unloading preheating and cooling time.



SEMI TANDEM

2 bases + 1 bell
This configuration saves the loading and unloading time, as the bell rotates from one base position to the other.



SINGLE

1 base + 1 bell



www.ionheat.com

GO TO WEB

GlowTech tailored configuration

You can choose from optional features to get the best performance and discover all that ION HEAT equipment can do for your production:

✎ Extra Power Supply

If you need such a large surface area you need much more plasma energy (Duty cycle calculation).

✎ Extra Gases

Argon and methane mass flow controllers for processing stainless steel or running FNC (ferritic nitrocarburizing).

✎ Side Viewports and Top Camera Viewports

Side viewports to visualize the process inside the chamber and camera to capture images from the control software interface, useful when generating reports for customers or control entities.

✎ Controlled Post Oxidation

Oxygen sensor for vacuum work for post oxidation processes, with which a nice black finish is obtained, highly protective against corrosion. * Requires variable speed motor and fan.

✎ Aerospace Package

Configuration to qualify the furnace for NADCAP compliance.

✎ Air-cooled center anode

recommended for higher temperature uniformity in bigger chambers (1220-1522).

✎ Extra Temperature Add-on

To increase the temperature up to 850°C for titanium nitriding.

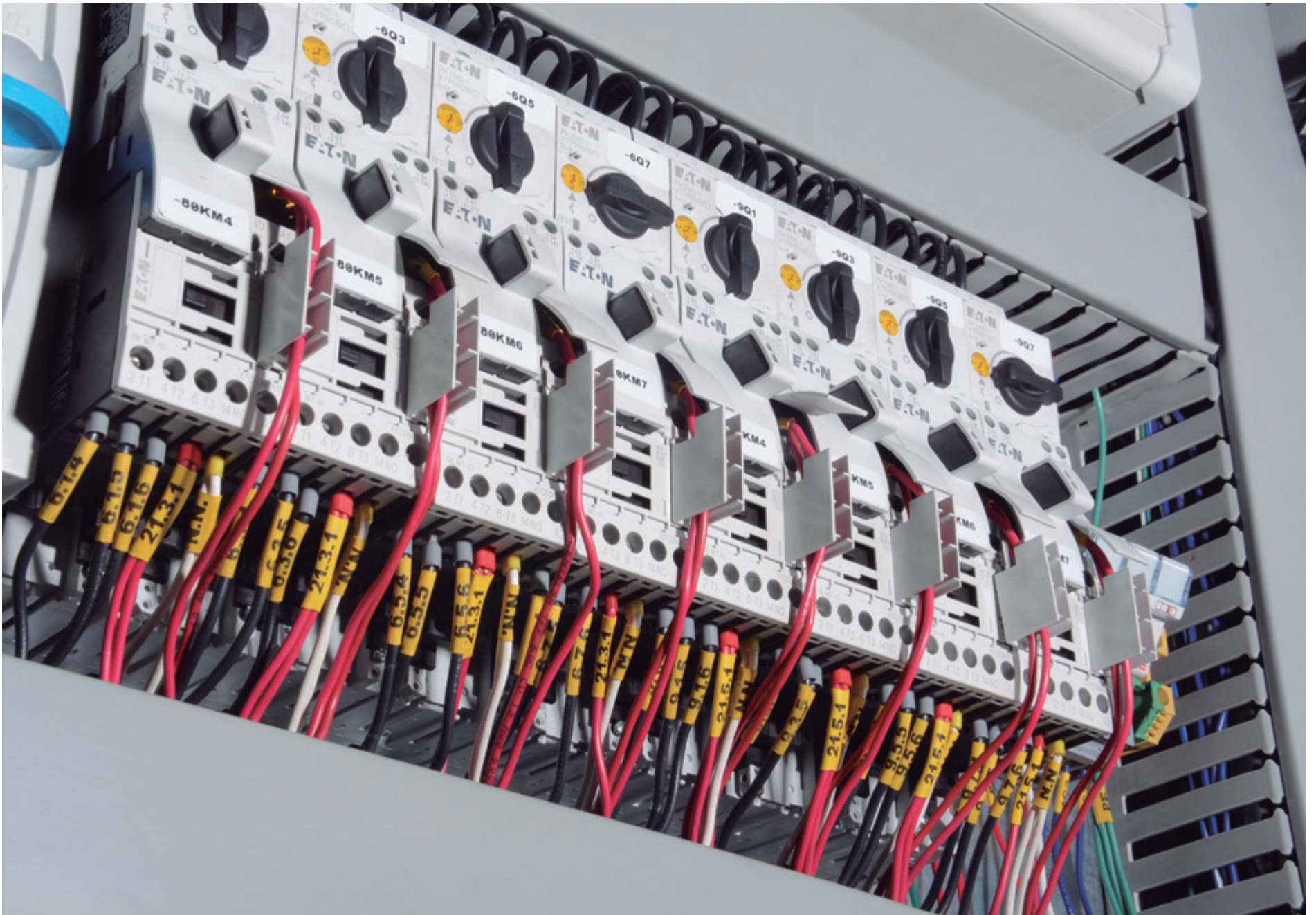
✎ Process Recipe

Setting up the tested metallurgical recipe to nitride specific parts.



www.ionheat.com
✎ GO TO WEB







COLOMBIA

Zona Franca Rionegro - 209 | P.C. 054047
+57 310 426 4843
ionheat@ionheat.com

UNITED STATES

+1 216 452 7011

www.ionheat.com



SCAN

To find agents in your area



REPRESENTATIVES IN:

America: Canada · United States | **South America:** Argentina · Colombia | **Asia:** India | **Europe:** Netherlands

