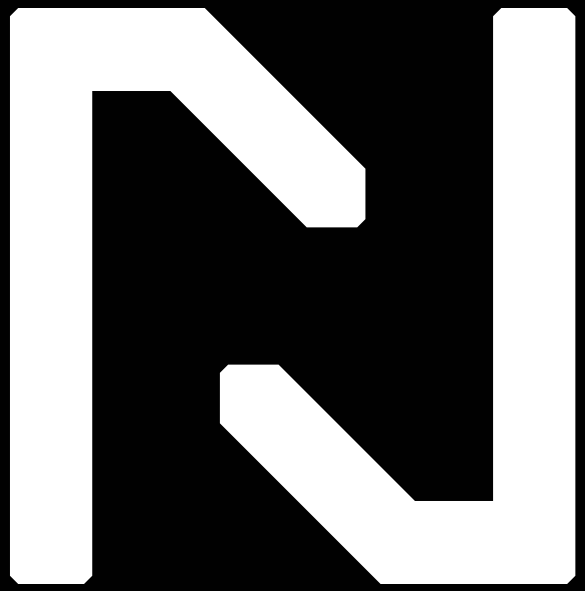
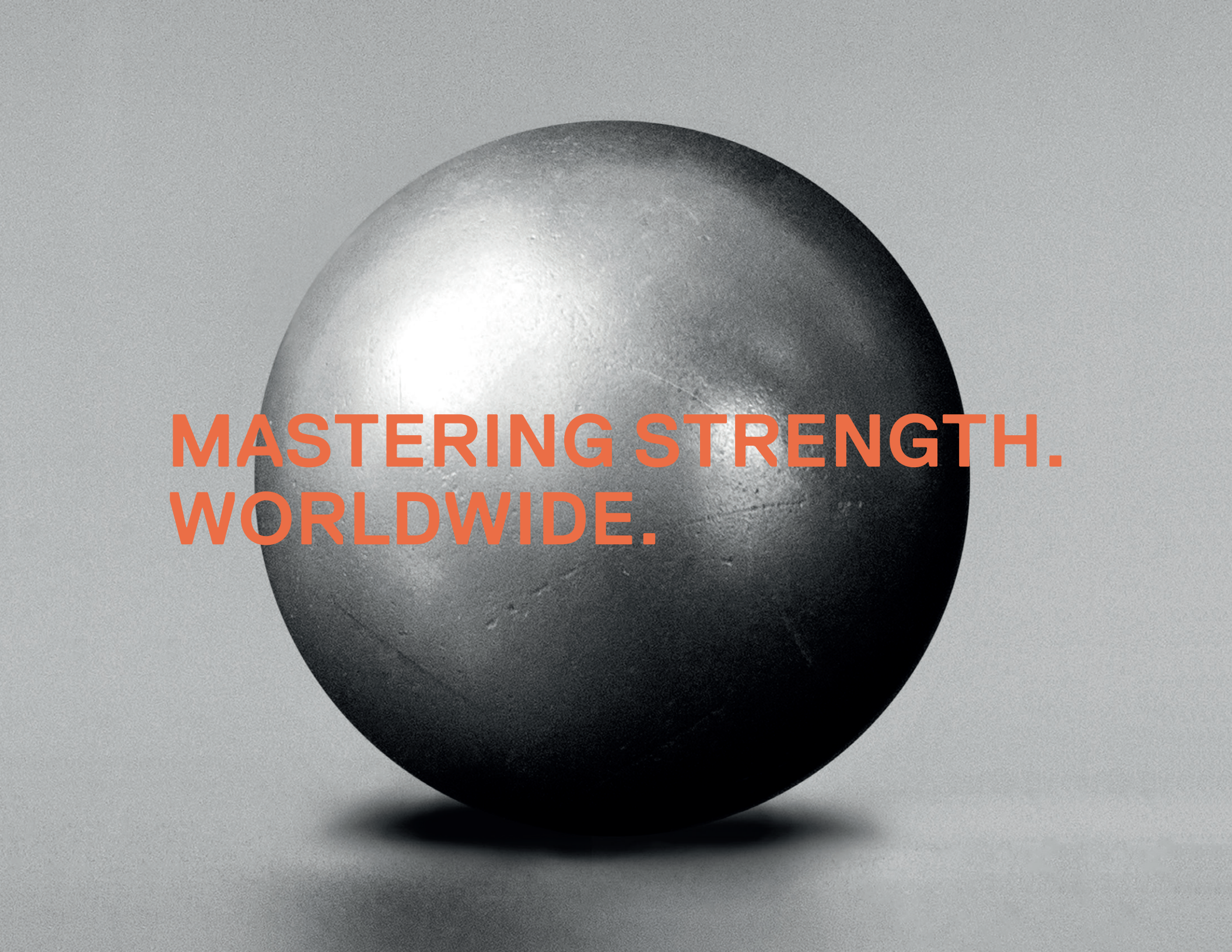


NITRIDING TURNKEY
SYSTEMS


MASTERING STRENGTH.
WORLDWIDE.

A WORD FROM

THE PRESIDENT OF GLOBAL NITREX TURNKEY SYSTEMS

NITREX embodies the company I've long aspired to lead. From my early work in nitriding science to my career in vacuum and hydrogen retort furnaces, my journey closely aligns with NITREX's vision as a global leader in technology and processing expertise. Today, it is my honor to head the furnaces and equipment division.

At NITREX, our commitment to innovation and heat treating sciences allows us to meet the evolving needs of manufacturers. Our many processing experts assist customers in selecting the appropriate cutting-edge heat treating technologies and solutions that optimize performance while meeting the latest needs in quality, productivity, safety, and environmental responsibility.

My team of experts and I stand by you from the initial contact to the post-installation stages and process confirmation, fostering a deeper partnership built on trust and innovation. We ensure your satisfaction, sustained growth, and business development. Our dedication to your journey is absolute—your success is our personal investment.

Please contact us today and let us assist you in your journey to better heat processing.

MARK HEMSATH

President of Global NITREX Turnkey Systems / mark.hemsath@nitrex.com

NITREX

TURNKEY NITRIDING / NITROCARBURIZING SYSTEMS

FOR AN OPTIMAL RETURN ON INVESTMENT

WHAT IS A NITRIDING / NITROCARBURIZING TURNKEY SYSTEM?

A NITREX turnkey nitriding system is more than just a standard furnace with controls. It is a comprehensive solution that begins with a client and application requirement analysis, and continues with an equipment proposal, design, manufacturing, process testing and recipe proofing, logistics, onsite installation, training, commissioning, plant integration, and life cycle services for a complete turnkey approach.

THIS PLATFORM SOLUTION DELIVERS SUPERIOR QUALITY AND RELIABILITY YEAR AFTER YEAR, WHILE OPTIMIZING PERFORMANCE & COST EFFICIENCY, AND GUARANTEEING AN OPTIMAL RETURN ON INVESTMENT.

NITREX

MAKING AN IMPACT IN EVERY INDUSTRY

SOLUTIONS FOR ALL TYPES OF BUSINESSES

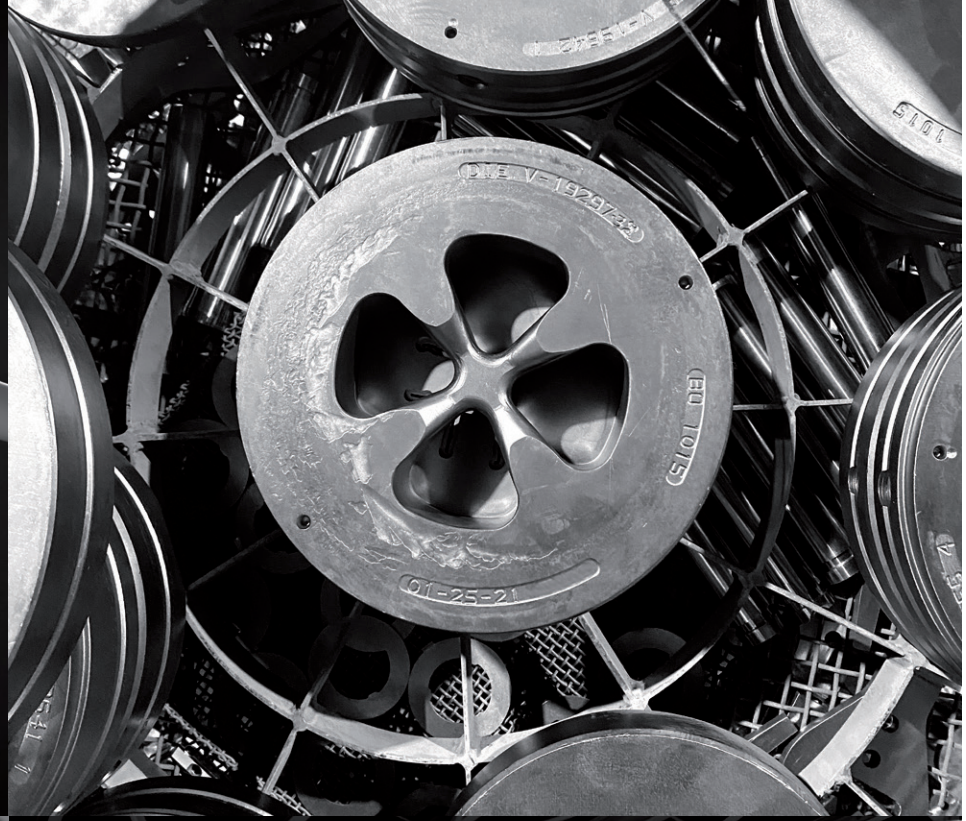
NITREX serves customers in a wide range of industries, all with unique needs and requirements. And in this fast-changing world that demands durability, sustainability, quality, and cost efficiency, more and more industries and companies are viewing nitriding/nitrocarburizing as business critical.

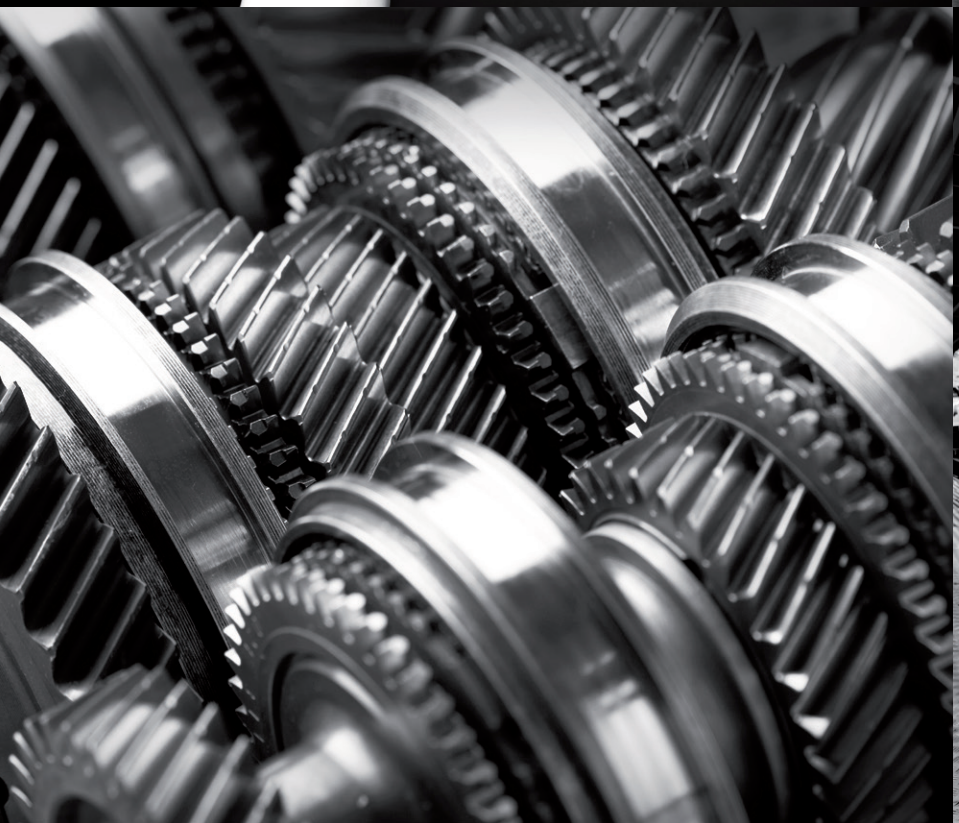
MARKETS WE SERVE

- Aerospace
- Automotive
- Off-road vehicles
- Defense & armament
- Medical
- Mining
- Oil & gas
- Tooling
- Aluminium extrusion

TYPICAL APPLICATIONS

- Aircraft components
- Axles
- Dies
- Extrusion dies
- Engine components
- Fasteners
- Fuel injectors
- Gears
- Industrial tools
- Landing gears
- MIM parts
- Piping
- Pumps
- Shafts
- Valve train components





NITREX

NTS
BROCHURE

Making an
impact in
every industry

MEET OUR LINEUP

NX SERIES

The heavy-duty NX series features a selection of pit-type batch furnaces for medium to very large processing and provides flexibility for a wide range of applications. By incorporating multiple controlled heating zones, temperature uniformity inside the retort is +/-5°C (9°F) or better.

NXH SERIES

The NXH front-loading furnaces are designed to have fast heat-up rates and a uniform temperature throughout the load. Optional internal cooling systems reduce cooling times, shortening the total cycle time and maximizing furnace usage.

NXHL SERIES

The NXHL front-loading batch furnaces are able to support high-volume, fully automated, 24/7 lights-out production. With fast heat-up and cooling rates, the shorter cycle times offer faster production times and maximum furnace utilization.

NXK SERIES

The multipurpose NXK series of compact nitriding/nitrocarburizing furnaces is a cost-effective and dependable choice for use in small scale processing as well as for general laboratory/testing/process development purposes.

Eco-friendly technology

NXL SERIES

The NXL is a multi-chamber continuous furnace line based on scalable process modules to increase the system's capacity and adaptability to the application and production demands. The flexible design adapts to different levels of manufacturing automation from semi-automated to fully automated, and lights-out operations.

N-EXT SERIES

The plug-and-play N-EXT series is a solution package designed specifically for nitriding/nitrocarburizing of aluminum extrusion dies. Its holistic design ties in all components with the latest technology advances and proven recipes into a self-contained, skid-mounted platform.

P-SERIES

The P-Series is a solution package for commercial heat treaters who want to leverage their in-house expertise and competence in recipe/process development using the industry's best-in-class nitriding / nitrocarburizing furnaces and UPC-Marathon process controls.

NX SERIES / PIT-TYPE BATCH FURNACES

PERFECT FOR MEDIUM TO HIGH-VOLUME PRODUCTION

The heavy-duty NX series features a selection of pit-type batch furnaces for medium to large processing and is suitable for a wide range of applications. By incorporating multiple controlled heating zones, temperature uniformity inside the retort is +/-5°C (9°F) or better.

As part of a turnkey system, the NX furnace operates completely automatically and autonomously, with little human intervention. All phases of the process, including purging, heating, nitriding, and cooling are carried out in a single continuous cycle. Closed-loop process control allows the system to automatically adjust to changes in nitriding/nitrocarburizing conditions that occur during the process cycle.

FEATURES

- Separate heating zones for accurate temperature control
- Uniform temperature distribution through independently controlled heating zones
- Hot gas recirculation fan for a fast load heat-up rate and excellent temperature uniformity
- Light ceramic fiber insulation for a fast and efficient heating and cooling
- Long-lasting Kanthal® heating elements
- Silicone cover seal for gas tight retort
- Inconel 600 (refractory alloy) retort and racking for a long service life and chemical stability with nitriding atmosphere
- Actuated cover lifting device
- NITREG® technologies with tested and proven recipes optimized for maximum part quality and performance
- Software module for data archiving and reporting as well as remote diagnostics
- SCADA connectivity

BENEFITS

- Preconfigured and factory tested
- Pretested for metallurgical results
- Fully automated operation for guaranteed repeatable and consistent results
- True nitriding/nitrocarburizing process control – compliant with AMS 2759/10 and AMS 2759/12 standards
- Superior case properties per customer specifications
- Various case configurations possible
- Ready-to-use treated parts
- Clean, environmentally-friendly, and sustainable processes — reduced consumption of process gases and energy savings from shorter process times

See pages 26-27 for furnace models and specifications.

Eco-friendly technology

NITREX

NTS
BROCHURE

NX series /
pit-type
batch
furnaces

NXH SERIES / HORIZONTAL BATCH-TYPE FURNACES

PERFECT FOR MEDIUM TO HIGH-VOLUME PRODUCTION

The NXH front-loading furnaces are designed to have fast heat-up rates and a uniform temperature throughout the load. Optional internal cooling systems reduce cooling times, shortening total cycle time, and maximizing furnace usage.

As part of a turnkey system, the NXH furnace operates completely automatically and autonomously, with little human intervention. All phases of the process, including purging, heating, nitriding, and cooling are carried out in a single continuous cycle. Closed-loop process control allows the system to automatically adjust to changes in nitriding/nitrocarburizing conditions that occur during the process cycle.

FEATURES

- Separate heating zones for accurate temperature control
- Uniform temperature distribution through independently controlled heating zones
- Hot gas recirculation fan for a fast load heat-up rate and excellent temperature uniformity
- Light ceramic fiber insulation for a fast and efficient heating and cooling
- Long-lasting Kanthal® heating elements
- Silicone cover seal for gas tight retort
- Inconel 600 (refractory alloy) retort and racking for a long service life and chemical stability with nitriding atmosphere
- Actuated cover lifting device
- NITREG® technologies with tested and proven recipes optimized for maximum part quality and performance
- Software module for data archiving and reporting as well as remote diagnostics
- SCADA connectivity

BENEFITS

- Preconfigured and factory tested
- Pretested for metallurgical results
- Fully automated operation for guaranteed repeatable and consistent results
- True nitriding/nitrocarburizing process control – compliant with AMS 2759/10 and AMS 2759/12 standards
- Superior case properties per customer specifications
- Various case configurations possible
- Ready-to-use treated parts
- Clean, environmentally-friendly, and sustainable processes — reduced consumption of process gases and energy savings from shorter process times

See pages 26-27 for furnace models and specifications.

Eco-friendly technology

NITREX

NTS
BROCHURE

NXH series /
horizontal
batch-type
furnaces

NXHL SERIES / HORIZONTAL BATCH-TYPE FURNACES

PERFECT FOR A FULLY AUTOMATED HEAT TREATING CELL

The NXHL front-loading batch furnaces are able to support high-volume, fully automated, 24/7 lights-out production. With fast heat-up and cooling rates, the shorter cycle times mean higher productivity and maximum furnace utilization.

As part of a turnkey system, the NXHL furnace operates completely automatically and autonomously, with little human intervention. All phases of the process, including purging, heating, nitriding, and cooling are carried out in a single continuous cycle. Closed-loop process control allows the system to automatically adjust to changes in nitriding/nitrocarburizing conditions that occur during the process cycle.

FEATURES

- Separate heating zones for accurate temperature control
- Uniform temperature distribution through independently controlled heating zones
- Hot gas recirculation fan for a fast load heat-up rate and excellent temperature uniformity
- Lightweight fiber insulation and firebrick for fast and cost-efficient heating and cooling and unsurpassed value
- Long-lasting Kanthal® heating elements
- Silicone cover seal for gas tight retort
- Inconel 600 (refractory alloy) racking for a long service life and chemical stability with nitriding atmosphere
- Actuated cover lifting device
- NITREG® technologies with tested and proven recipes optimized for maximum part quality and performance
- Software module for data archiving and reporting as well as remote diagnostics
- SCADA connectivity

BENEFITS

- Preconfigured and factory tested
- Pretested for metallurgical results
- Fully automated operation for guaranteed repeatable and consistent results
- True nitriding/nitrocarburizing process control – compliant with AMS 2759/10 and AMS 2759/12 standards
- Superior case properties per customer specifications
- Various case configurations possible
- Ready-to-use treated parts
- Clean, environmentally-friendly, and sustainable processes — reduced consumption of process gases and energy savings from shorter process times

See pages 26-27 for furnace models and specifications.

Eco-friendly technology

NITREX

NTS
BROCHURE

NXHL /
horizontal
batch-type
furnaces

NXK SERIES / COMPACT BATCH-TYPE FURNACES

PERFECT FOR LOW-VOLUME PRODUCTION

The multipurpose NXK series of compact nitriding/nitrocarburizing furnaces is a cost-effective and dependable option for small-scale production as well as for general laboratory/testing/process development purposes.

As part of a turnkey system, the NXK furnace operates completely automatically and autonomously, with little human intervention. All phases of the process, including purging, heating, nitriding, and cooling are carried out in a single continuous cycle. Closed-loop process control allows the system to automatically adjust to changes in nitriding/nitrocarburizing conditions that occur during the process cycle.

FEATURES

- Separate heating zones for accurate temperature control
- Uniform temperature distribution through independently controlled heating zones
- Hot gas recirculation fan for a fast load heat-up rate and excellent temperature uniformity
- Light ceramic fiber insulation for fast and efficient heating and cooling
- Long-lasting Kanthal® heating elements
- Silicone cover seal for gas tight retort
- Inconel 600 (refractory alloy) retort and racking for a long service life and chemical stability with nitriding atmosphere
- Actuated cover lifting device
- NITREG® technologies with tested and proven recipes optimized for maximum part quality and performance
- Software module for data archiving and reporting as well as remote diagnostics
- SCADA connectivity

BENEFITS

- Preconfigured and factory tested
- Pretested for metallurgical results
- Fully automated operation for guaranteed repeatable and consistent results
- True nitriding/nitrocarburizing process control – compliant with AMS 2759/10 and AMS 2759/12 standards
- Superior case properties per customer specifications
- Various case configurations possible
- Ready-to-use treated parts
- Clean, environmentally-friendly, and sustainable processes — reduced consumption of process gases and energy savings from shorter process times

See pages 26-27 for furnace models and specifications.

Eco-friendly technology

NITREX

NTS
BROCHURE

NXK series /
compact
batch-type
furnaces

NXL SERIES / CONTINUOUS LINE FURNACES

PERFECT FOR HIGH-VOLUME CONTINUOUS PRODUCTION

The NXL multi-chamber continuous furnace line is based on scalable process modules, which increase the system capacity and adaptability to application and productivity demands. Its adaptable design allows for various levels of manufacturing automation, from semi-automated to fully-automated, and lights-out operations.

As part of a turnkey system, the NXL furnace operates completely automatically and autonomously, with little human intervention. Using a combination of process zones, all phases of the process, including purging, heating, nitriding, and cooling, are automatically sequenced in a continuous uninterrupted cycle. This configuration allows for an automatic, self-adjusting process, contributing to a high degree of accuracy in process execution and a higher level of consistency in nitriding/nitrocarburizing results.

FEATURES

- Modular design for flexibility in multi-stage processes, customized configurations to suit any given application
- Separate heating zones for accurate temperature control
- Exceptional temperature uniformity throughout the workload
- Hot gas recirculation fan for a fast load heat-up rate
- Light ceramic fiber insulation for fast and efficient heating and cooling
- Long-lasting Kanthal® heating elements
- Inconel 600 (refractory alloy) retort and racking for a long service life and chemical stability with nitriding atmosphere
- Turbo-cooling module for shorter cooling times and improved furnace utilization rates
- NITREG® technologies with tested and proven recipes optimized for maximum part quality and performance
- Software module for data archiving and reporting as well as remote diagnostics
- SCADA connectivity

See pages 26-27 for furnace models and specifications.

BENEFITS

- Preconfigured and factory tested
- Pretested for metallurgical results
- Fully automated operation for guaranteed repeatable and consistent results
- True nitriding/nitrocarburizing process control – compliant with AMS 2759/10 and AMS 2759/12 standards
- Superior case properties per customer specifications
- Various case configurations possible
- Ready-to-use treated parts
- Clean, environmentally-friendly, and sustainable processes — reduced consumption of process gases and energy savings from shorter process times
- Modular, flow-through design provides 30-40% energy savings compared to batch furnaces
- Highly economical solution for just-in-time high-volume production

Eco-friendly technology

N-EXT SERIES / PLUG-AND-PLAY BATCH FURNACES

PACKAGED SOLUTION FOR ALUMINUM EXTRUSION DIES

The N-EXT series is a plug-and-play solution package designed specifically for nitriding/nitrocarburizing aluminum extrusion dies. Its holistic design integrates all hardware components with the latest technology advances and proven recipes into a self-contained, skid-mounted platform.

As part of a turnkey system, the N-EXT furnace operates completely automatically and autonomously, with little human intervention. All phases of the process, including purging, heating, nitriding, and cooling are carried out in a single continuous cycle. Closed-loop process control allows the system to automatically adjust to changes in nitriding/nitrocarburizing conditions that occur during the process cycle.

FEATURES

- Separate heating zones for accurate temperature control
- Uniform temperature distribution through independently controlled heating zones
- Hot gas recirculation fan for a fast load heat-up rate and excellent temperature uniformity
- Light ceramic fiber insulation for fast and efficient heating and cooling
- Long-lasting Kanthal® heating elements
- Silicone cover seal for gas tight retort
- Inconel 600 (refractory alloy) retort and racking for a long service life and chemical stability with nitriding atmosphere
- Actuated cover lifting device
- NITREG® technologies with tested and proven recipes optimized for maximum part quality and performance
- Software module for data archiving and reporting as well as remote diagnostics
- SCADA connectivity

BENEFITS

- Preconfigured and factory tested
- Pretested for metallurgical results
- Fully automated operation for guaranteed repeatable and consistent results
- True nitriding/nitrocarburizing process control – compliant with AMS 2759/10 and AMS 2759/12 standards
- Superior case properties per customer specifications
- Various case configurations possible
- Ready-to-use treated parts
- Clean, environmentally-friendly, and sustainable processes — reduced consumption of process gases and energy savings from shorter process times

See pages 26-27 for furnace models and specifications.

Eco-friendly technology

NITREX

NTS
BROCHURE

N-EXT series /
plug-and-play
batch
furnaces

P-SERIES

PACKAGED SOLUTION FOR COMMERCIAL HEAT TREATERS

The P-Series is a solution package for commercial heat treaters who want to leverage their in-house expertise and competence in recipe/process development by using the industry's best-in-class nitriding/nitrocarburizing furnaces and advanced process controls. The P-Series is available in three batch furnace models — the pit-type batch NX, the horizontal batch-type NXH, and the compact NXK.

As part of a complete system, the P-Series furnace operates automatically and autonomously, with little human intervention. The Protherm™ controller enables flexible and convenient control of the furnace, allowing an expert user to create, run, monitor, record, and archive nitriding and nitrocarburizing processes. Protherm™ manages all furnace functions of nitriding/nitrocarburizing cycles, including key setpoints for atmosphere composition,such as the percentage of dissociation (% Diss), nitriding potential (K_N), carburizing potential (K_C), and oxidizing potential (K_O), as well as alarms and maintenance tasks.

FEATURES

- Separate heating zones for accurate temperature control
- Uniform temperature distribution through independently controlled heating zones
- Hot gas recirculation fan for a fast load heat-up rate and excellent temperature uniformity
- Light ceramic fiber insulation for fast and efficient heating and cooling
- Long-lasting Kanthal® heating elements
- Silicone cover seal for gas tight retort
- Inconel 600 (refractory alloy) retort and racking for a long service life and chemical stability with nitriding atmosphere
- Actuated cover lifting device
- Protherm™ controller for designing, optimizing and monitoring nitriding/nitrocarburizing processes
- Software module for data archiving and reporting as well as remote diagnostics
- SCADA connectivity

BENEFITS

- Preconfigured and factory tested
- Pretested for metallurgical results
- Fully automated operation for guaranteed repeatable and consistent results
- True nitriding/nitrocarburizing process control – compliant with AMS 2759/10 and AMS 2759/12 standards
- Superior case properties per customer specifications
- Various case configurations possible
- Ready-to-use treated parts
- Clean, environmentally-friendly, and sustainable processes — reduced consumption of process gases and energy savings from shorter process times

See pages 26-27 for furnace models and specifications.

Eco-friendly technology

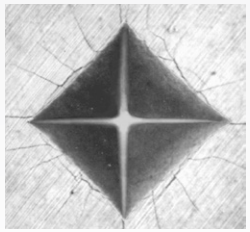
TECHNOLOGIES

THINK NITREG® WHEN WEAR, FATIGUE & CORROSION MATTER

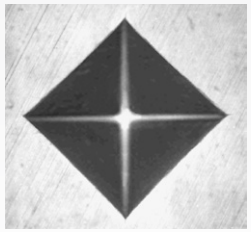
INNOVATIVE TECHNOLOGIES FOR ALL TYPES OF STEEL

The NITREG® brand of potential-controlled gas nitriding and nitrocarburizing technologies are used exclusively in NITREX furnaces. These ecological and time-tested technologies enable the development of customized recipes for various parts, applications, steels, case configurations, and final requirements to enhance wear, fatigue, and corrosion resistance while delivering improved part performance, reliability, and service life.

VICKERS INDENTATIONS – Load of 30 kg on a 4340 steel nitrided to the same specification:



CONVENTIONAL
nitriding



NITREG®
nitriding

NITREG® Gas Nitriding

NITREG® is a gas nitriding technology that is successfully applied to a variety of parts and materials to increase their surface hardness, wear resistance, and fatigue life. Its ability to control the concentration of nitrogen at the surface allows it to manage the growth of the compound layer almost independently from the development of the diffusion zone. This allows for a tighter control of the case depth and the white layer within narrower tolerances.

BENEFITS

- Precise control of the compound /white layer thickness and its properties
- Elimination of closed nitride networks within the diffusion zone
- Excellent control of the case depth
- Uniform hardened surface even in small bores, tight grooves, and sharp edges
- Prevention of over-nitriding, no distortion of parts
- Very high level of process repeatability
- Cost savings due to reduced gas consumption, optimized process times, and elimination of post-finishing operations
- Green technology that reduces pollution

NITREG®-C Nitrocarburizing

NITREG®-C is a nitrocarburizing process with K_N and K_C control that incorporates simultaneous diffusion of nitrogen and carbon into the steel surface. Treatment enhances the wear, fatigue and corrosion resistance of treated steel or cast-iron parts, without distortion of shape or dimensional changes. It is an environmentally friendly equivalent alternative to salt bath nitrocarburizing.

BENEFITS

All the benefits of NITREG®, plus:

- Rapid formation of the white layer on low-carbon unalloyed steel
- Stable γ'-phase content in most types of steels
- Improvement and stabilization of the ε-phase content in most types of steels

ONC® In-Process Oxidation

ONC® is an in-process post-nitriding or post-nitrocarburizing oxidation process with oxidation potential (K_O) control that further enhances wear and corrosion resistance while producing an attractive black finish on metal parts of various grades of steel. It is a low-cost, environmentally friendly alternative to chrome plating and salt bath nitriding.

BENEFITS

All the benefits of NITREG®, plus:

- Even greater corrosion resistance
- Even greater wear resistance
- Attractive black surface finish
- Lowered coefficient of friction

NITREG®-S For Stainless Steels

NITREG®-S is a proprietary nitriding technology with a depassivation stage that removes oxides from alloying elements to allow nitriding of stainless steel to take over with complete control over the formation of the nitrided layers. All types of stainless steel can be nitrided.

BENEFITS

All the benefits of NITREG®, plus:

- No need for pre-processing preparations
- Excellent wear resistance
- Improved fatigue strength
- Prevention of galling
- No change to the chemical composition of the alloy
- No effect on the steel's non-magnetic nature
- No change in color, shape, or size

NANO-S™ For Stainless Steels

NANO-S™ is a surface hardening process that improves the wear and galling resistance of stainless-steel components while leaving their inherent corrosion resistance alone. It diffuses nitrogen and/or carbon into the surface, creating a S-Phase structure with extremely high hardness.

BENEFITS

All the benefits of NITREG®, plus:

- No need for pre-processing preparations
- Excellent wear resistance
- Improved fatigue strength
- Retained intrinsic corrosion properties
- Prevention of galling
- No change to the chemical composition of the alloy
- No effect on the steel's non-magnetic nature
- No change in color, shape, or size

PROCESS & REMOTE SOFTWARE

PROCESS AUTOMATION SOLUTIONS

NPC

EXPERT CONTROL SOFTWARE

NPC is the expert operating software for NITREX furnaces. It executes, controls, and monitors all operations and parameters to ensure the reliability and performance of the nitriding/nitrocarburizing process. The user-friendly interface contains data points on the furnace, on processes, jobs, and stages, displaying variables such as temperature, flows, power output, nitriding potential, as well as the actual status of the nitriding process and system equipment.

NX-CONNECT™

REMOTE ACCESS SOFTWARE

The NX-CONNECT™ is a software package that allows users to remotely interact with their NITREX system(s). It links all data to a single interface and allows users from within the plant or from remote locations to access, create, modify, and share process parameters.

MASTERING THE COMPLEXITY OF NITRIDING

While each NITREX system is tailored to a specific application and customer requirements, at the heart of every system are intelligent process software and hardware controls — products with extensive research and development in automation. Our design philosophy is to simplify and automate process control so that nitriding/nitrocarburizing is performed in a dynamic, self-adjusting, and operator-free manner.

H2SMART™

HYDROGEN SAMPLING SYSTEM

The H2Smart™ is an integrated sampling system that measures the hydrogen content in nitriding and nitrocarburizing atmospheres and calculates the parameters necessary for process control. Its unique design with a variable output integral pump allows the set sampling flow rate to be automatically maintained.

- Internal calculation of process parameters
- Internal temperature control that ensures stability and protects against condensation and contamination
- No need for a reference gas cell
- Active closed-loop sampling flow control with warning and alarm
- Integrated web server with access to diagnostics, configuration, and maintenance

SGS™

SINGLE-GAS SENSOR

The SGS™ accurately measures hydrogen content or dissociation level and is also capable of K_N and K_C in nitriding and nitrocarburizing atmospheres.

- Integral sampling eliminating the need for a separate sampling system
- Sampling flow generated by the Venturi effect
- Integrated web server with access to diagnostics, configuration, and maintenance
- Availability of analog signals and industrial protocols
- Availability of O_2 sensor and O_2 sensor temperature inputs

AUXILIARY EQUIPMENT

DESIGNED, TESTED, AND VETTED FOR NITREX SYSTEMS

This collection of suitably designed, dimensioned, and vetted equipment enhances the functionality of a NITREX nitriding/nitrocarburizing system and guarantees optimal performance.

FURNACE RACKING

SAFE & EASY PARTS HANDLING

NITREX parts handling systems are dimensioned and vetted to meet all operational requirements, from small to large production quantities and different sized parts. These process-safe baskets and racks made of Inconel 600 alloy can withstand high temperatures for a longer service life.

AMMONIA DISSOCIATORS

COST-EFFECTIVE & SAFE ON-DEMAND SUPPLY

The ammonia dissociator provides a cost-effective and secure source of dissociated ammonia, which is used as an additive gas for nitriding processes. This is especially useful when nitriding certain alloys that require the addition of diluting gas to precisely control the nitriding potential according to specifications such as AMS 2759/10 and AMS 2759/12. Nitriding potential control is a key element of process control for alloys like stainless steels and nitralloys, as well as for deep case nitriding.

AMMONIA DRYER

HIGHEST PURITY AVAILABLE

The ammonia dryer removes water and oil particles from anhydrous ammonia, producing high purity ammonia for process needs. This feature is especially useful in regions where there is high-water content in the ammonia supply.

VACUUM PURGE SYSTEM

FASTER PURGING, HIGHER PRODUCTIVITY

The vacuum purge system quickly evacuates air from the retort, allowing it to be filled with process gas in far less time than the standard nitrogen purge stage. This optional add-on reduces process gas consumption and costs while increasing furnace productivity.

ACCELERATED COOLING SYSTEM

40% REDUCTION OF COOLING TIME

The accelerated cooling system drastically shortens the cooling stage of a nitriding cycle, resulting in shorter lead and delivery times, improved furnace utilization and significant cost savings.

CLOSED-LOOP WATER COOLING SYSTEM

RESOURCE CONSERVATION WHILE PROLONGING FURNACE ELEMENTS

The closed-loop water cooling system uses recirculated water to cool furnace elements. It reduces water usage and utility costs while also extending the life of furnace seals, flanges, and the internal turbine motor.

EXHAUST NEUTRALIZER SYSTEM

A GREEN, CLEAN PROCESS

The neutralizer system is the most practical way to eliminate residual ammonia. This environmentally friendly solution uses ammonia to neutralize exhaust gases from nitriding furnaces and other equipment and reduce nitrogen oxides (NOx) emissions.

NITREX AFTERMARKET

An aftermarket solution is essential to your business continuity; it helps extend your system's lifecycle and maximizes your return on investment (ROI). Because it's not enough to just think of the now—you need to consider how your system and equipment, and therefore your business, might be impacted in the future. We've developed an aftermarket protocol that meets the needs of today, all while anticipating the requirements of tomorrow.

Ask your NITREX representative for more information.

FURNACE MODELS & SPECIFICATIONS

NX SERIES / P-SERIES

NX MODEL	NXP MODEL	Diameter		Height		Load capacity	
NX-615	NXP-615	23½"	600 mm	59"	1,500 mm	2,200 lb.	1,000 kg
NX-620	NXP-620	23½"	600 mm	78¾"	2,000 mm	2,600 lb.	1,200 kg
NX-815	NXP-815	31½"	800 mm	59"	1,500 mm	3,300 lb.	1,500 kg
NX-820	NXP-820	31½"	800 mm	78¾"	2,000 mm	3,850 lb.	1,750 kg
NX-825	NXP-825	31½"	800 mm	98½"	2,500 mm	4,400 lb.	2,000 kg
NX-1015	NXP-1015	39"	1,000 mm	59"	1,500 mm	4,400 lb.	2,000 kg
NX-1020	NXP-1020	39"	1,000 mm	78¾"	2,000 mm	5,500 lb.	2,500 kg
NX-1025	NXP-1025	39"	1,000 mm	98½"	2,500 mm	6,600 lb.	3,000 kg
NX-1215	NXP-1215	47¼"	1,200 mm	59"	1,500 mm	6,600 lb.	3,000 kg
NX-1220	NXP-1220	47¼"	1,200 mm	78¾"	2,000 mm	8,400 lb.	8,800 kg
NX-1225	NXP-1225	47¼"	1,200 mm	98½"	2,500 mm	9,900 lb.	4,500 kg
NX-1230	NXP-1230	47¼"	1,200 mm	118"	3,000 mm	11,570 lb.	5,250 kg
NX-1625	NXP-1625	61"	1,550 mm	98½"	2,500 mm	13,200 lb.	6,000 kg
NX-1630	NXP-1630	61"	1,550 mm	118"	3,000 mm	15,400 lb.	7,000 kg
NX-1635	NXP-1635	61"	1,550 mm	137¾"	3,500 mm	17,600 lb.	8,000 kg
NX-1645	NXP-1645	61"	1,550 mm	177"	4,500 mm	22,000 lb.	10,000 kg

NXL SERIES

NXL MODEL	Working space (W x H x L)		Load capacity	
NXL-9912	35½" x 35½" x 47¼"	900 x 900 x 1,200 mm	3,300 lb.	1,500 kg
NXL-9918	35½" x 35½" x 71"	900 x 900 x 1,800 mm	3,970 lb.	1,800 kg

NXK SERIES / N-EXT SERIES / P-SERIES

NXK MODEL	N-EXT MODEL	NXKP MODEL	Diameter		Height		Load capacity	
NXK-409	N-EXT-409	NXKP-409	15¾"	400 mm	31½"	800 mm	660 lb.	300 kg
NXK-412	N-EXT-412	NXKP-412	15¾"	400 mm	47¼"	1,200 mm	880 lb.	400 kg
NXK-609	N-EXT-609	NXKP-609	23½"	600 mm	35½"	900 mm	1,300 lb.	600 kg
NXK-612	N-EXT-612	NXKP-612	23½"	600 mm	47¼"	1,200 mm	1,700 lb.	800 kg
NXK-812	N-EXT-812	NXKP-812	31½"	800 mm	47¼"	1,200 mm	2,200 lb.	1,200 kg

NXH SERIES / P-SERIES

NXH MODEL	NXHP MODEL	Working space (W x H x L)		Load capacity	
NXH-669	NXHP-669	23½" x 23½" x 35½"	600 x 600 x 900 mm	1,700 lb.	800 kg
NXH-6612	NXHP-6612	23½" x 23½" x 47¼"	600 x 600 x 1,200 mm	2,200 lb.	1,000 kg
NXH-9812	NXHP-9812	35½" x 31½" x 47¼"	900 x 800 x 1,200 mm	3,300 lb.	1,500 kg
NXH-9818	NXHP-9818	35½" x 31½" x 71"	900 x 800 x 1,800 mm	5,500 lb.	2,500 kg
NXH-101015	NXHP-101015	39½" x 39½" x 59"	1,000 x 1,000 x 1,500 mm	5,500 lb.	2,500 kg
NXH-101018	NXHP-101018	39½" x 39½" x 71"	1,000 x 1,000 x 1,800 mm	6,600 lb.	3,000 kg

NXHL SERIES

NXHL MODEL	Working space (W x H x L)		Load capacity	
NXHL-910512	35½" x 41¼" x 47¼"	900 x 1,050 x 1,200 mm	3,300 lbs	1,500 kg

Standard sizes are shown, custom sizes are available.

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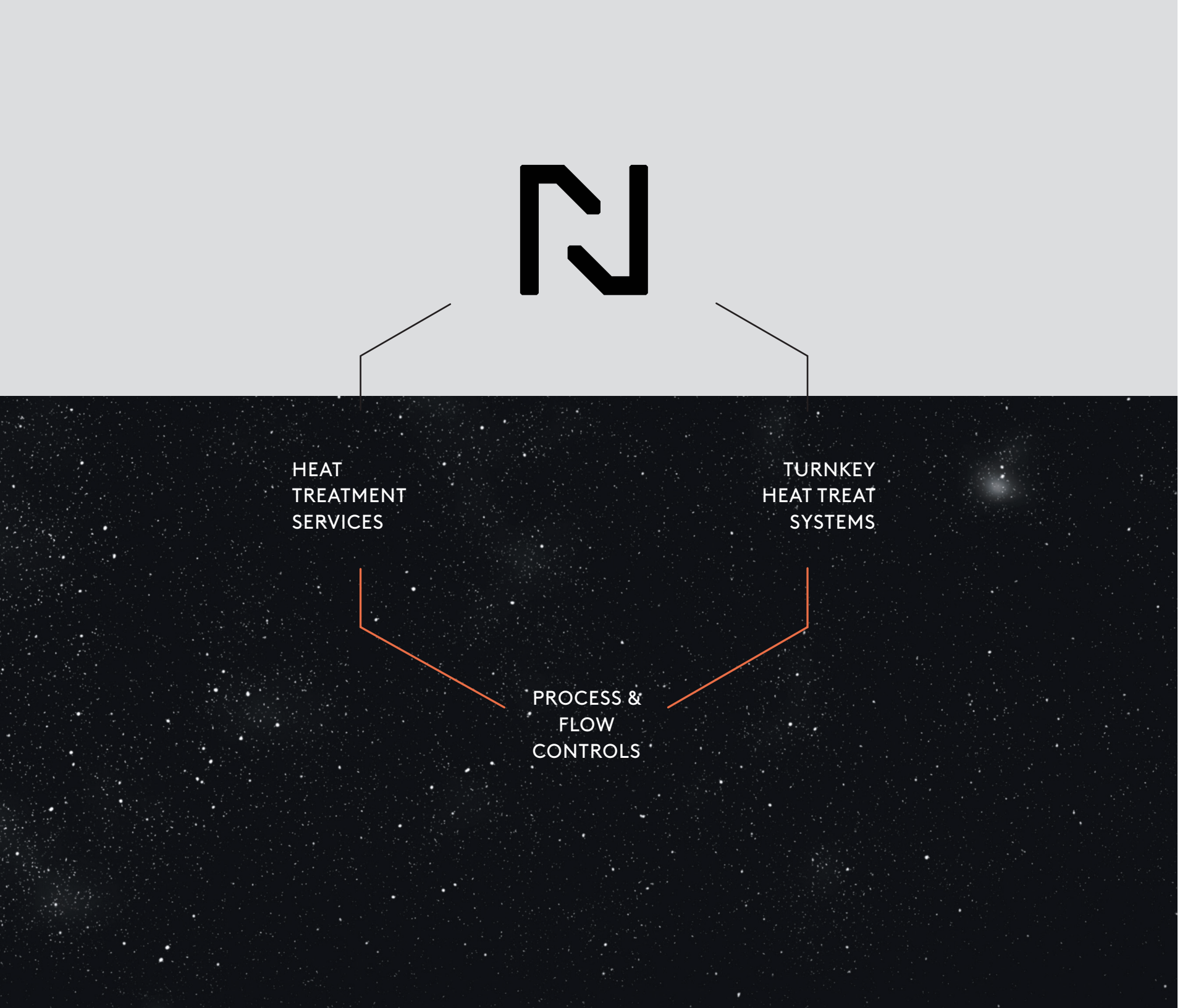
WE ARE THE ONLY FULLY INTEGRATED SOLUTIONS PROVIDER IN THE PREMIUM SURFACE TREATMENT MARKET.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COMMITMENT TO QUALITY CONTROL

NITREX prides itself on providing customers with world-class quality surface treating systems, controls, and services that improve component reliability and performance, as well as the life span and productivity of their engineering parts. Maintaining quality is a core company value, and the entire team, from receiving to handling, processing, inspection, and shipping, is committed to upholding quality assurance and control procedures.

As a result of our ongoing commitment to quality, NITREX maintains several national and international accreditations. These certificates are critical to our efforts in delivering value to our customers, both now and in the future.

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- Boeing
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- GE Aviation
- Howmet Aerospace
- Parker
- PG Technologies
- Rolls-Royce

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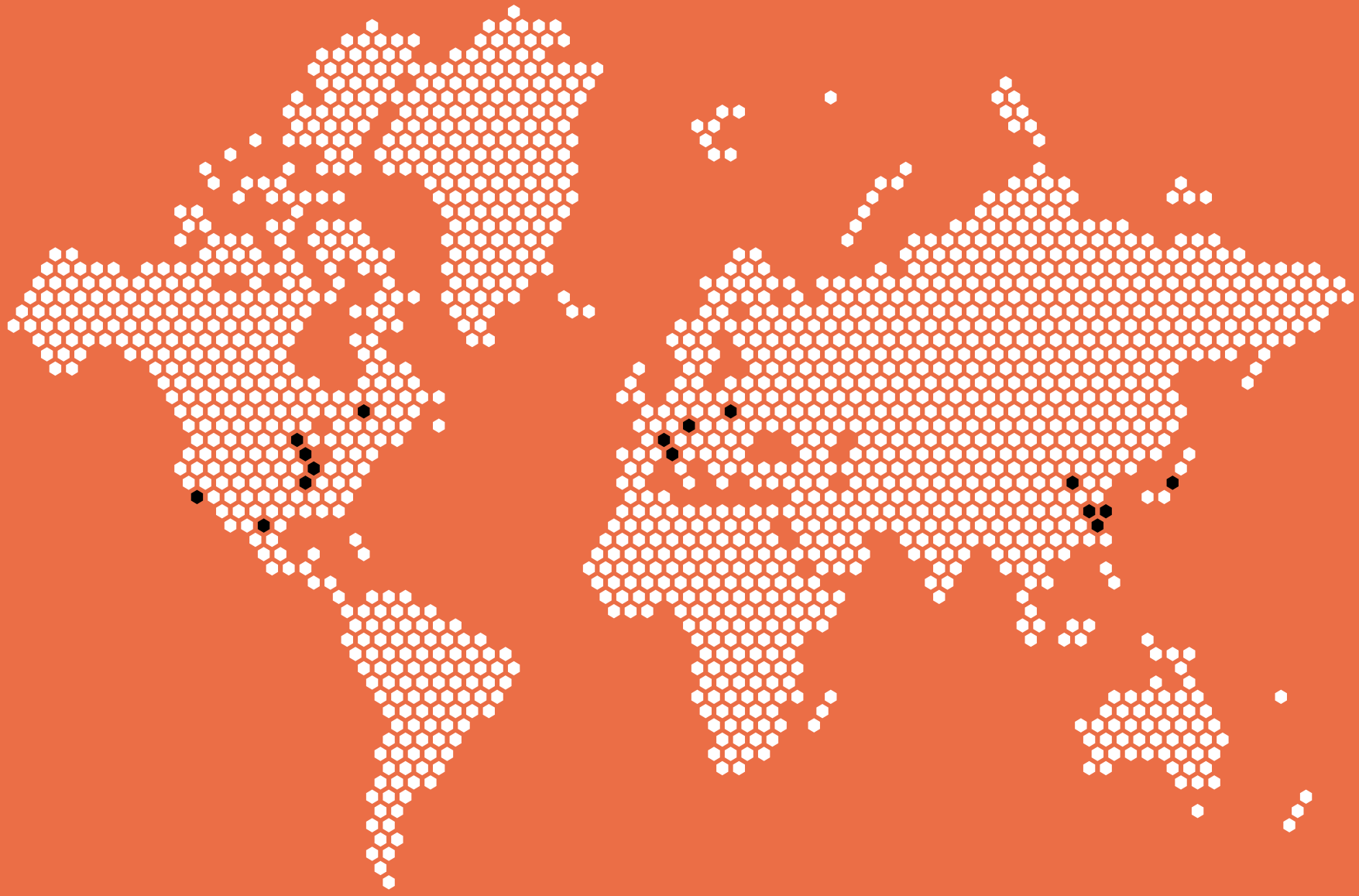
- Bonfiglioli
- FCA (Fiat Chrysler Automobiles)
- Federal-Mogul
- MAHLE (Driven by performance)
- SKF
- Volvo
- ZF

INDUSTRIAL

- CAT
- GE
- Honeywell
- INDO-MIM (Complexity Simplified)
- John Deere
- The Linde Group



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