

FNA 2018

Furnaces North America Exhibition Highlights Future of Heat Treating

Matthew Jaster, Senior Editor

The 13th edition of Furnaces North America (FNA) is produced by the Metal Treating Institute and its media partner, *Industrial Heating Magazine*. Established in 1995, FNA brings top suppliers and heat treaters, both captive and commercial, from around the world to one location for technical education, networking, and the latest developments in furnace equipment, accessories, and services. Attendees from 17+ countries will arrive in Indianapolis, Indiana October 8–10, for 35 technical sessions, a two-day trade show and an array of business and networking opportunities.

Technical Sessions

FNA's Educational Conference is designed by a team of heat treaters and suppliers to ensure the program has topics that hit at the needs of attendees. The following contains a list of technical sessions during FNA 2018 that might be of interest to *Gear Technology* readers:

October 9th

Applications Advantages of the All-Metal Vacuum Furnace Hot Zone

**Bill Jones & Re'al Fradette - Solar Atmospheres
(8:00 am–8:35 am)**

The all-metal vacuum furnace hot zone was introduced into the commercial heat treating world in the 1960's, for processing special electronic metals like tantalum anodes for electrolytic capacitors, critical materials for the atomic energy industries and for the development of space and rocket engine materials, and "leading edge" surfaces. Today's applications center on medical uses, electric power interruptors, and processing of sensitive materials such as high alloy SS, titanium, and zirconium. We will present an overview of all-metal hot zone construction, proper design of the high vacuum pumping system, and integration of the argon gas cooling system with high vacuum isolation valves.

Product Improvement and Predictive Maintenance Advancements Via the Application of the Industrial Internet of Things (IIoT)

**AFC-Holcroft
(8:00 am–8:35 am)**

This presentation will review the process, identify stakeholders, and outline how everyone benefits from the quickly evolving utilization of equipment data telemetry to drive continuous improvement. We will discuss more advanced data accumulation and data processing methods that can directly or indirectly identify growing equipment performance issues as we continue to take advantage of the Industrial Internet of Things.

High Volume Small Part Heat Treating: An Alternative to Mesh Belts

**Sam Stoner – Seco/Warwick Corporation
(8:50 am–9:25 am)**

This facts and figures presentation shows the math behind why rotary retort furnaces are replacing mesh belts. Besides a cost/benefit analysis, this talk addresses the superior metallurgical results obtainable from this furnace. For high volume parts producers who have never heard of a rotary retort, or for those who remember rotary retorts of yesteryear, this presentation offers compelling reasons to consider a new rotary retort furnace.

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heat treating

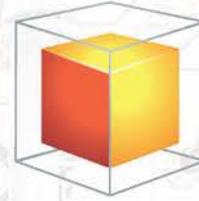
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Carburizing to FNC and Back Again: Getting the Most Out of Your BIQ for CQI-9

Surface Combustion, Inc.
(9:40 am–10:15 am)

Batch integral quench furnaces are the commercial heat treater's go to piece of equipment for versatility and reliable processing, and this flexibility makes BIQs their most productive asset. Gain more production capability because you can carburize and FNC in the same furnace, meet CQI-9, and grow your automotive business. Expand your existing operations to include FNC in your BIQ with a retrofit package. Learn more about transitioning from carburizing to FNC and back while maintaining CQI-9 compliance.

Fundamentals of Developing a Marketing Strategy for Commercial Heat Treaters

Ipsen USA
(10:30 am–11:05 am)

This presentation will examine common marketing strategies, why they are important for commercial heat treaters and tips to begin developing a marketing plan.

October 10th

Implementing Low Pressure Gas Carburizing on the Shop Floor: A Case Study

Daniel H. Herring – The Herring Group, Inc.
(8:00 am–8:35 am)

How does one go about implementing an advanced technology such as low pressure vacuum carburizing on the shop floor? What are the factors that need to be considered and what tests/trials are necessary to make a successful transition from atmosphere to vacuum carburizing? This presentation addresses many of the most important issues.

Versatility of Modular Furnaces: The Heartbeat of your Multiple Requirements and Expectations for Heat Treatment

Vincent Esteve - ECM USA, Inc.
(8:00 am–8:35 am)

Achieving the best fit of heat treatment for your parts is the target of LPC modular furnaces by their sizes, their capacity to perform different processes at the same time, and the working range of temperature of the heating cells. This presentation will show how these furnaces suit your requirements for productivity, distortion control, metallurgical expectations, and working environment. Each process has its own solution according to the main objective of the heat treatment operation.

Exhibitor Previews

The following section includes previews from exhibitors in areas of manufacturing covered in the pages of *Gear Technology*:

AFC Holcroft Booth 314–316

AFC-Holcroft is a furnace supplier for equipment used for austempering and marquenching. Metal components subjected to the austempering process are shown to have improved mechanical properties such as strength and toughness along with improved distortion control during processing. Highlights include the company's universal batch quench systems, endothermic gas generators, rotary hearth furnaces, pusher furnaces and mesh belt equipment. Founded in 1916, AFC-Holcroft, is one of the US market leaders in the production of industrial furnace equipment for ferrous and non-ferrous metals. The company manufactures turn-key heat treating systems for applications including commercial heat treating, bearings, automotive, aerospace, mining, aluminum heat treatment, gear manufacturing, fastener manufacturing, and alternative energy industries. (afc-holcroft.com)



ALD Vacuum Systems, Inc. Booth 104–106

ALD Vacuum Systems designs and manufactures vacuum furnace systems used in heat treating. The company specializes in automated vacuum furnace systems with a product line that includes ModulTherm, SyncroTherm, NitroTherm and DualTherm systems. ALD focuses on markets like automotive, fuel systems, aerospace, tool and die, medical, heavy equipment, oil and gas, and commercial heat treating. ALD Vacuum Systems Inc. is a subsidiary of ALD Vacuum Technologies, GmbH of Hanau, Germany and part of the AMG Advanced Metallurgical Group N.V., Netherlands. (www.aldvac.com)

Ajax Tocco Magnethermic Booth 133

Ajax Tocco Magnethermic is a subsidiary of ParkOhio Holdings Corp. The company designs and manufactures induction heating and melting equipment for various industries and applications throughout the world. In addition, they provide a range of services including laboratory process development, preventive



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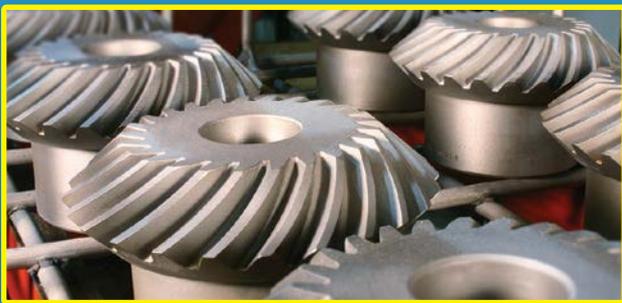
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Diablo Furnaces Booth 140

Diablo's built-to-order heat treating furnaces deliver only the equipment you need on the shop floor. They can rebuild and re-control your old furnace to the modern specifications you need or provide retrofit packages ranging from basic upgrades and improvements, to a completely customized, state-of-the-art rebuild. The machines are engineered, built and serviced in the United States. (diablofurnaces.com)

ECM USA Booth 210-212

ECM's products incorporate other peripheral equipment to provide a complete turn-key heat treating solution. This allows customers to have one source for the complete heat treat installation which includes preheating, automation, heat treating (low pressure carburizing, carbonitriding, neutral hardening with oil or gas quenching) and tempering equipment all working together on one PLC based system for one source quality control. These installations are sourced and supported in North America. Product highlights include the ICBP Nano composed of one module with 3 stacked up heating cells (which can be extended to 6 heating cells, corresponding to 2 heating modules) and gas quenching cells to quench the parts. The carburizing cells are stacked up to reduce the footprint's installation as much as possible. The ICBP Nano integrates directly into the production line which allows it to reduce the cycle time while simplifying the flow between the machining and heat treatment. (www.ecm-usa.com)

Ipsen USA Booth 301-303

Founded in 1948, Ipsen has more than 10,000 systems installed worldwide. The company offers global modular platforms, as well as custom designs for specialized processes and requirements. Available in a wide range of sizes, their atmosphere and vacuum systems deliver versatility of processes, including annealing, brazing, hardening, low-pressure carburizing, solution nitriding, stress relieving and tempering. Additionally, they provide solutions that integrate with your entire operation — whether it's refining your processes or providing integrated supervisory systems. Product highlights include the Titan line, TurboTreater, SuperTurbo, batch furnace systems, continuous furnace systems, atmosphere software and more. (www.ipsenusa.com)

Seco Warwick Booth 426-428

For more than 25 years, Seco/Warwick has provided equipment and technology to leading companies in the aerospace, automotive and power industries. There customers in 70 countries produce control systems components, gears, landing systems for aircrafts, turbines, aircraft engine elements, heat exchangers in aircrafts and automobiles, surgical instruments and coins. Industry 4.0, automation, machine learning or artificial intelligence are emerging trends in manufacturing. Seco/Warwick has noticed the potential of leveraging and implementing these technologies into its heat treatment systems. (www.secowarwick.com)



Solar Manufacturing Booth 211-213

Solar Manufacturing is a privately held, U.S.-based company providing technologically advanced vacuum heat treating furnaces. Together with their affiliate Solar Atmospheres, the company continually develops new solutions to vacuum processing applications and improves the science of vacuum furnace technology. Products include horizontal internal quench vacuum furnaces, horizontal external quench vacuum furnaces, vertical

vacuum furnaces, mentor vacuum furnaces, low press carburizing, nitriding and more. The company recently broke ground on a new manufacturing facility in Sellersville, PA, to be completed in early 2019. (solarmfg.com)

For more information:

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