

**October, 2011 - Applied Process Inc. and AFC-Holcroft Announce the World's Largest Integral Quench Atmosphere Batch Furnace.....and by the way, it's got a salt quench.**

Applied Process Inc., a worldwide leader in Austempering technology, has collaborated with AFC-Holcroft, a leading international manufacturer of industrial thermal processing equipment, to produce a unique Monster Parts™ furnace for a new plant that Applied Process is establishing in Oshkosh, Wisconsin. The new plant is a response to growing demand for Austempered Ductile Iron (ADI), Carbide Austempered Ductile Iron (CADI™), Austempered Gray Iron (AGI), Austempered Steel and Carbo-Austempered™ Steel components, and for applications that consolidate many steel or aluminum weldments, forgings, castings or assemblies into a single, large, elegant ductile iron design not previously feasible.

The unique Universal Batch Quench-Austemper (UBQA) design will have a working envelope of 84in x 96in x 56in (2050mm x 2438mm x 1422mm) and a maximum gross load of 20,000 lbs (9,090kg). The unit integrates a controlled atmosphere furnace with an oversized nitrate/nitrite salt quench with transfer from the furnace accomplished safely, automatically, and under atmosphere.

According to Bill Disler, AFC-Holcroft's Executive Vice President, "This design was a collaborative effort between AFC-Holcroft's engineering and production staff and the engineering and plant services staff at the Applied Process companies". John Keough, CEO of Applied Process stated that, "This furnace is fully capable of all of the processes that AP's customers have come to use and trust, with the added capability of running very large and/or heavy steel, iron, and Austempered Ductile Iron (ADI) parts".

The furnace will employ strategically placed natural gas fired radiant tubes and is designed to meet the stringent temperature uniformity requirements of various new international standards. The furnace will utilize an endothermic gas atmosphere with natural gas addition. The heat and atmosphere will be uniformly circulated in the furnace with the aid of four alloy fans. A raised pier design in the furnace will allow both the sight lines necessary for efficient radiant heat transfer and the smooth flow of atmosphere circulation. This design aspect is critical to the efficient processing of such a large load. AP Chief Operating Officer, John Wagner, indicated that, "For us, endothermic gas, manufactured from an endothermic generator, is the way to go. It is less costly and more stable than nitrogen-methanol systems. Endothermic generators with modern injection systems, digital controls and dewpoint sensors, with proper preventive maintenance, can run trouble-free for years at a time. And parts run in this unit, like all of our UBQA lines, will not have the surface decarburization seen on parts run in other systems".

For this massive furnace, a special, direct gear drive handling system was developed by AFC-Holcroft. The system is designed to smoothly accelerate and decelerate the load quickly, without the rough, jerking motions that can plague conventional transfer systems.

AFC-Holcroft UBQA furnaces are known for their quench speed and uniformity. The unique quench tank and housing design, coupled with proprietary agitation and water addition techniques, give UBQA units quench severity that far exceed typical salt quench systems. Further, the oversize quenches specified by Applied Process allow for less than a 15°F (8.3°C) temperature rise for a maximum design gross load. The Monster Parts™ quench system's operating temperature range is 360°F-725°F (182°C-399°C).

The Monster Parts™ system allows for nearly 100% salt reclamation using minimal energy. Because the system is atmosphere-to-salt, the quench salt is not contaminated by drag-out of high temperature Austenitizing salt, as is typical of salt-to-salt processes. The salt-rich water from the primary wash can easily be rectified, filtered and then the salt can be 100% reclaimed using proprietary (green) technology.

The new heat treating facility, AP's Monster Parts™ Division, will be housed in a purpose-built, 15,000 sq. ft. (1,400 sq. meters) facility in Oshkosh, Wisconsin. It will be serviced by a 10 ton crane for bulk, top loading and unloading, and a protected truck dock for conventional loading.

John Keough further stated; "This furnace line will give AP a unique opportunity to work with engineers, buyers and the management of manufacturers to develop new, cost-effective conversions of large parts (we like to call them Monster Parts™) and consolidate weldments and assemblies into efficient, single-piece designs--not to mention the fact that it will increase our capacity to process conventional Austempering work". AP's Technical Sales Group Leader, Vasko Popovski, added, "The new furnace means the engineering community is now freed from the overwhelming reliance on large-scale steel components in favor of less costly and lighter ADI components. Such components would most likely be American-made, and as such allow US firms to compete more readily with expensive imported steel forgings and castings."

#### About AFC-Holcroft:

AFC-Holcroft is one of the world's largest manufacturers of heat treating furnaces. The legacy companies that comprise AFC-Holcroft have a combined 225+ years of thermal processing experience. The company manufactures turn-key heat treating systems for applications including commercial heat treating, bearings, automotive, aerospace, military, aluminum heat treatment, gear manufacturing, fastener manufacturing, and alternative energy industries.

AFC-Holcroft, headquartered in the United States, has a global reach with direct sales coverage in the U.S. and in Europe and within the major industrial markets such as Germany, France, and other European locations. AFC-Holcroft's Asian Operations manages partners in China, India, South Korea, and other countries in the region, and the company also extends into markets in Argentina, Australia, Brazil, Mexico, Poland, Russia, Spain, and Turkey through relationships with partners, many of whom have manufacturing capability.

For more information, contact AFC-Holcroft at [media@afc-holcroft.com](mailto:media@afc-holcroft.com).

About Applied Process:

Applied Process Inc. is a worldwide family of commercial heat treats specializing in the Austempering process. AP makes iron and steel parts tougher, stronger, lighter, quieter and more wear resistant and is the world leader in the processing of Austempered Ductile Iron (ADI). For further information contact Vasko Popovski at [vpopovski@appliedprocess.com](mailto:vpopovski@appliedprocess.com) or visit AP's website [www.appliedprocess.com](http://www.appliedprocess.com) .

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