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## INTRODUCTION

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Going hand in hand with the beautiful but hot weather in the Northern Hemisphere we have the July issue of “**The Monty**” which is also filled with sunshine. A strong worldwide economy means a buoyant heat treating industry and this is reflected in the news items in this issue. We see new investment in Texas (something which we have not seen for quite some time), strong results from commercial heat treater Bodycote, and a general feeling of optimism which is resulting in new investments. We shall hope it continues.

Best regards,

Gord, Jordan and Dale Montgomery.

# HEAT TREAT NEWS

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## The Website of Choice for Captive and Commercial Heat Treaters Since 1999

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### Texas Heat Treating

It brings joy to our heart to see captive and commercial heat treaters in Texas back to investing in new equipment. Texas Heat Treating one of the larger commercials has this to say; *(we are attaching this rather dated photo of the Fort Worth facility to go with this news item) July 31, 2018*

*“Texas Heat Treating’s Fort Worth operation has purchased a new Ipsen 6-Bar Turbo Treater vacuum furnace. Heat treating in vacuum furnaces is preferred, or required, for a variety of metals and applications. THT has offered vacuum heat treating for decades, but the “6-bar” cooling capability of this new furnace meets many of the most challenging customer requirements for cooling rates. The work zone dimensions are 36” x 36” x 48”, with a load rating of 4,000 pounds. In addition, Texas Heat Treating’s Fort Worth operation has expanded within its second building at 5113 North Freeway. Highlights of this expansion include the following:*

- Creation of layout and infrastructure for Vacuum Furnace Department*
- Added space and improved workflow for incoming work*
- Relocation of Final Inspection Department, including climate control*
- Addition of a third shot-blasting table for post heat treat cleaning*
- Addition of Magnetic Particle Inspection equipment*
- Move and upgrade of administration offices and conference room.*



## Used Equipment

“The Monty” has one of the most complete lists of *Used Heat Treating Furnaces* in North America, a list which is updated weekly. Our most recent additions are mentioned below. If you don’t see what you are looking for please let us know at [jordan@themonty.com](mailto:jordan@themonty.com) or 905-271-0033. *July 31, 2018*

**Item # L8 Instron Tensile Tester \$35,000**

**Item # B456 “Super 30” Batch IQ Furnace \$39,000**

**Item # B455 Lindberg Box Furnace 2000F \$95,000**

**Item # B454 Lindberg Box Furnace 46 X 36 X 96 \$75,000**

**Item # M422 Dunk/Spray Washer 36” x 48” x 36” \$22,500**

**Item # B453 Batch IQ Furnaces 24” X 36” X 24” \$25,000 Each**

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## Picture Day

On a regular basis we change our interesting heat treat photos and today is the day <https://www.themonty.com/> Have a look to see if you, your company or your competitor shows up-and feel free to send us your interesting photos. *July 31, 2018*

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## Monday Morning Briefing

We begin with a company by the name of *DAE-IL* who just broke ground on a new facility in Murray, Kentucky, USA to manufacturer auto parts. All of this is of course just “background noise” as what we find most interesting is that the company will be incorporating heat treating also. *“A Korean automotive parts maker and local officials ceremonially broke ground on Monday on a \$50 million facility in Murray. South Korea-based DAE-IL Corporation (DIC) is building a 295,000 square-foot facility in the Murray West Industrial Park.*

Construction has already begun and is expected to take between 12-14 months to complete. The company plans to hire 120 full-time employees within five years.

DIC President Jung Ryol "Johnny" Kim said the company manufactures parts, gears and components for the automotive and heavy equipment industries. Customers include GM, Tesla, Hyundai, Kia and others. "As the global demand for our product is growing rapidly, we wanted to have this new facility here in the United States to satisfy

our U.S. customers," Kim said. "I heard that Kentucky is at the heart of the automotive and aerospace industries and it has already achieved great technological investment and... has contributed growth to the national economy. With the highly skilled workers of the community, we will continue this trend for sure." He said DIC is planning to produce in Murray various gears of the powertrain for internal combustion engine vehicles. The company will then manufacture gear boxes and differential assemblies for new cars. "With these additional products, DIC will be at the forefront of the advancement of electric vehicles." He expects the company will reach an annual sales of \$100 million within six years. "As our business grows, we will expand our investment and be hiring to meet the demands," he said. MCEDC chair and former state Senator Ken Winters said the project is "the largest start-up investment" Murray has ever had. Winters said the new jobs include forging, heat treating and machining gears and drivetrain parts. The company will be hiring engineers, technicians and office staff, he said. Winters also noted local entities getting involved through metal recycling, accounting and insurance services. **July 30, 2018**



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These are the good times in the heat treating industry but there are also headwinds to contend with, the big one being **US Tariffs**. Whether you agree or not with the tariffs being enacted the bottom line is that they are causing prices to rise. One supplier to the heat treating industry had this to say, obviously pretty well every supplier is in the same boat. *“Big news was announced last week regarding import weld fittings and flanges (see highlighted info below). We anticipate that domestic suppliers will also follow suit. **Effective immediately: Import Weld fittings are going up 35% due to the Largest Import Foundry trying to circumvent the 25% tariff. Now their tariff will be 182%.**”* For what it’s worth a market study claims the **Worldwide Heat Treating Market** will be worth \$122.34 Billion USD by 2025. If we understand correctly this covers captive and commercial heat treating as well as equipment sales. Maybe, maybe not-we tend to be pretty skeptical of these market studies about the size of the industry. Starting August 14<sup>th</sup>, 2018 there will be an on line auction for equipment at the **Meritor** facility in Morganton, NC. It features a few heat treat related items such as induction equipment and ovens. Stuff looks not bad so it will probably sell.

Last week we posted a list which we compiled back in 2011 about the **“Rising Stars in the Heat Treating Industry”**. Two individuals we mentioned were Jamie and Trevor Jones

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from the Solar group of companies. Roger Jones gave us this update about what they are up to now; *“Hello Gord, thanks for posting this from 2011. Just to update two people for you, **Jamie A. Jones** is now President of Solar Atmospheres, overseeing the entire Souderton PA campus. This consists of three buildings. **Trevor M. Jones** is now the CEO of Solar Manufacturing and is overseeing the company, and the construction of the new Solar Manufacturing building in Sellersville PA.”* Speaking of **Solar** we have this photo and write up about their recent sales meeting; *“The third annual Solar Atmospheres Sales and Marketing Summit was held this*

year at the corporate headquarters located in Souderton, PA. Sales managers from the four Solar Atmospheres commercial heat treating sites attended and discussed the overall sales from the previous year and the unique processes and developments that were taking place at each plant. Multiple opportunities were cited and a plan to execute marketing initiatives for those opportunities was developed.”



From **Nitrex Metal** and **UPC** we have this press release; “**Nitrex Metal** in concert with **United Process Controls** is pleased to announce that Prof. Jerzy Michalski, a recognized specialist in the design of gas **#nitriding** processes and modeling of nitriding atmospheres, is this year’s recipient of the Hephaestus Award. The award is bestowed upon individuals in the field

of **#heattreating** whose contributions have had an impact on surface engineering, materials science, and industrial processes or production techniques. The award will be presented to Prof. Michalski during the 3rd Novatherm Seminar, taking place October 4-5, 2018, in Poland.” **Wall Colmonoy** is having one of their periodic Brazing Seminars; Preserving the tradition originated by the late Robert Peaslee, a brazing pioneer who invented the first nickel-based brazing filler metal, Wall Colmonoy offers a fall session of Modern Furnace Brazing School on October 16-18, 2018 at Wall Colmonoy’s Aerobrazing Engineering Center in Cincinnati, Ohio. Engineers, technicians, quality managers, production managers, and others will participate in “hands-on” practical applications while learning about brazing technology from the industry’s leading brazing engineers. For over 60 years, Wall Colmonoy engineers have been gaining practical

A vertical rectangular graphic with an orange border. At the top, it says "ATTENTION Commercial Heat Treaters" in white text on an orange background. Below that, it says "P-SERIES Best-of-Class NITREX Nitriding &amp; FNC Systems" in blue and white text. At the bottom is the NITREX logo, which consists of a stylized 'N' made of orange and yellow shapes above the word "NITREX" in black capital letters.

experience on actual problems in brazing plants around the world.

We have often considered **Metlab** in Wyndmoor, PA to have some of the largest pit furnaces in North America and they probably do however **Overton Chicago Gear** is no slouch either. This captive/commercial heat treater can handle carburized parts up to

15,000 pounds, 110” long and 98” in diameter. The company also has two of the largest press quench units in North America at 84” in diameter.



While we are on the topic of large pit furnaces we should mention these ones in Germany. They were built by **Rohde Furnaces** in Germany a few years back and installed at commercial heat treater **HÄRTEREI REESE** in Bochum, Germany. Able to handle parts up to 196” (5,000 mm) in diameter Reese claims they are the largest pit furnaces in Europe and we would not dispute that (*maybe in the world for that matter*). While the furnaces themselves have been an unqualified success there have been issues-namely that the company struggles to keep them full, especially with wind energy slowing down. Reese by the way is one of the largest commercial heat treaters in Germany with over 270 employees. If you want to see a really cool photo of the furnaces in operation we would suggest this link, it is real cool to see the size of the parts being heat treated; <https://www.haerterei.com/en/hardening-techniques/case-hardening/>



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## Business Opportunities

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**Item # 0349 Heat Treat Engineer Needed at AAM**

**Item # SE001 Metallurgical Engineer Seeking Employment**

**Item # 0348 1st. Shift Maintenance Technician / Supervisor**

**Item # 0347 Heat Treating Manager/Metallurgist/Materials Engineer**

**Item # 0358 McGard Needs a Heat Treat Technician**

**Item # 0357 Quality Control Manager**



## AMSTED RAIL BUYS AFC-HOLCROFT FURNACE LINE

*“(July, 2018) Amsted Rail®, a global leader in fully integrated freight car systems for the heavy haul rail market has added a new, complete AFC-Holcroft UBH line to meet a growing need for additional heat treatment capacity. This latest purchase includes a batch style carburizing furnace, two expansion modules to increase endothermic generator gas output, a rotary hearth reheat furnace for press quenching, and a continuous integrated parts washer and temper furnace.*

*“The batch furnace itself has an effective load size of 72 inches by 72 inches by 56 inch with a gross load capacity of 13,000 lbs, which is considered very large for this type of equipment, but is in fact one of AFC-Holcroft’s standard sizes,” stated Tracy Dougherty, Sales Manager at AFC-Holcroft. “The ability and experience to provide equipment for reliable processing of such large loads is just one of the benefits that AFC-Holcroft is able to offer, and one more thing that sets us apart from our competitors.”*

*Amsted Rail® is headquartered in Chicago, Illinois (USA), with locations spanning the globe, in every significant railroad market. The equipment is scheduled to ship to a joint venture facility located in Eastern Europe, in the third quarter of 2018.*

**About Amsted Rail:** Amsted Rail® is the world's leading provider of fully integrated bogie systems for the heavy haul freight market, with facilities spanning 40 locations across 10 countries and 6 continents. Through their state-of-the-art manufacturing processes, Amsted Rail® is redefining industry standards for innovation and technology, providing customers



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**About AFC-Holcroft:** 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. Headquartered in Wixom, Michigan, AFC-Holcroft operates its own subsidiaries in China and Switzerland and has a global presence through a network of partners located in Australia, Brasil, China, India, Mexico, Poland and Spain.

**About AICHELIN Holding:** The AICHELIN Group, as part of the BERNDORF Group of companies, is a manufacturer of industrial furnace equipment for different industry segments and provider of after-sale services. AICHELIN Group also operates in the field of induction heating and in the manufacturing of industrial gas burner systems. The group's production sites are located in Austria, Germany, France, Slovenia, the US, China, and India. Altogether, the AICHELIN Group has 1,100 employees worldwide and ranges among the largest producers of heat treatment plants globally. For more information, contact [media@afc-holcroft.com](mailto:media@afc-holcroft.com)." **July 27, 2018**

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## **Bodycote's 2018 Interim Results**

Bodycote the world's largest commercial heat treater just yesterday released their 2018 Interim financial results and they are impressive, although at the time of this posting the financial markets were not overwhelmed with the shares down a touch. All the details can be found at <https://www.bodycote.com/>Highlights: **July 27, 2018**

- Revenue growth of 8.7%; headline operating profit growth of 15%<sup>5</sup>

- Further improvement in return on sales to 19.0%
  - Free cash flow of £39.4m
  - Specialist Technologies' growth of 11%5
  - Emerging Markets' revenue growth of 22%5
  - Interim dividend of 5.7p, up 8%
- 



## Ben Crawford/Contour Hardening

Yes you did read that headline correctly, Ben Crawford is now President and CEO of Contour Hardening-lets backtrack a bit though. Ben started at the very bottom of the ladder in the heat treating industry many years ago and since that time he has worked at both captive and commercial heat treaters as well as a stint at furnace builder Gasbarre. Most recently he was VP of Sales for commercial heat treat Paulo. However for the past few weeks he has been at Contour Hardening, a company which describes itself like this; **July 26, 2018**

*"Contour Hardening is a full service induction hardening system manufacturer, specializing in induction hardening systems, contract processing, and application development work. CHI manufactures induction hardening machines using an advanced computer-controlled patented induction heating technology known as the Micropulse™ Process. CHI developed the Micropulse™ Process to rapidly harden gear teeth and other irregularly shaped parts requiring a high degree of case depth hardening and pattern accuracy." Ben is a good man, and a fellow we would consider a friend so we wish him the best of luck.*

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## What's It Worth?

*"Abar Ipsen "TurboTreater" vacuum furnace. 2 Bar quenching. Working dimensions of 36" X 36" X 24". 18" diffusion pump, Stokes 671 booster pump and 212H roughing pump. Yokogawa CX 2000 controller and CM31 vacuum gauges. Hot zone is approximately 6 years old. Moly elements with graphite insulation."*

We have often said that the two types of furnaces with the highest resale value are recent model batch IQ furnaces and good condition vacuum furnaces- this is a perfect example! A reasonable size, two bar quenching, diffusion pump and in immaculate condition. The asking price is hefty at \$225,000 USD for a furnace probably 30 years old but in our opinion the price is not out of line and it will probably sell for pretty close to the asking price. Always feel free to ask us at "The Monty" what equipment is worth, we will be glad to give you and experiences (and free) opinion. **July 26, 2018**



## Epiroc/SSI

From **James Cross** of controls company SSI Europe we have this news item; *“I spent last week in Sweden commissioning a multi-zone gas analyser (MZA) for Epiroc (formerly Atlas Copco) in Sweden. The system was designed specially for Epiroc using SSI’s standard 3-Gas NDIR sensor. 8 furnaces will be continuously sampled, giving Epiroc’s process and maintenance teams full visibility of their furnace’s CO, CO2, and CH4 values. CO and CO2 are key process indicators which can be used to calculate the furnace’s carbon potential. Using Modbus RS485 communications, the NDIR carbon potential can then be compared to the SSI oxygen sensor instrument’s carbon potential and automatically corrected and alarmed if there is a deviation. CH4 values provide useful maintenance data, since high CH4 values are associated with excess uncracked hydrocarbon resulting from leaks or burner tube issues. XGA Viewer software provides remote charting. The most critical element of installing these systems is minimising leaks between the furnace and the sensor, even tiny leaks can produce significantly inaccurate readings. This can be a frustrating and time-consuming process when there are long tube lengths involved, but it is ultimately rewarding. On this system, the gas analyser returned a carbon potential value of 1.22% whilst the furnace’s oxygen probe control instrument was reading 1.20%. This level of deviation provides Epiroc with the certainty that their parts are being processed in the correct environment and reassurance that if there is a deviation between the two values, it is caused by a furnace issue and not a sampling issue.”*

**July 25, 2018**



## Where Are They Now? Dan Jelescu

Dan is a long time, very experienced Metallurgical Engineer who was with commercial heat treater **Vancouver Heat Treat** for many years until the company closed some time back. He moved to captive heat treater and gear manufacturer **Standard Machine** in Saskatoon where he was until very recently (*Standard Machine has a heat treat department which consists largely of pit carburizing furnaces*). Dan left the company recently and is looking for a new position, if you would like to get in touch with him feel free to drop us a note [jordan@themonty.com](mailto:jordan@themonty.com) **July 25, 2018**

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## Rising Stars in the Heat Treat Industry

Going back to 2011 we had an article called **"Rising Stars"** in which we mentioned a number of relatively young people in the industry who were making their mark (*as far as we know this is the only time this has been done in the industry*). For reasons unknown to us a reader asked if we could reprint the article which we are glad to do. While a number of these individuals continue on in the industry and are indeed doing well others we have lost touch with or they have left the industry. For instance Stephen Gladieux of Applied Process and Josh Longenette of Bodycote we know have both changed career paths. **July 25, 2018**



*"Rising Stars. Recently we embarked upon a quest to find out from our readers who they would consider the "Rising Stars" of the industry-those who will one day be taking over from the older generation. We had a substantial number of suggestions all interesting, some of these individuals we know, others we have not run across before but in all cases we congratulate them.*

*Our basic criteria was individuals relatively young, that are making a difference and received several votes. We have to confess that several would not have occurred to us and caught us by surprise but not up to us. Below are suggestions we received and we will emphasize that they are in no particular order and have nothing to do with the votes received. December 12/2011*

- *Josh Rolwing, General Manager of Metals Engineering in Green Bay, Wisconsin, USA (commercial heat treating).*
- *Carlos Torres, Mattsa Crio, Mexico (new furnaces, commercial heat treating).*

- *Jörn Rohde, President, ROHDE Schutzgasöfen GmbH, Germany (new furnaces).*
- *Jamie A. Jones”, General Manager Solar Atmospheres Souderton PA., (commercial heat treating).*
- *Mike Cote, Alcon/Castalloy, Cleveland, Ohio (castings, fabrications).*
- *Ankit Gupta, Metals-India, Faridabad, India (commercial heat treating).*
- *James Cross, SSI, UK (controls, instrumentation).*
- *Stephen Gladieux, General Manager, Applied Process, Suzhou, China (commercial heat treating).*
- *Josh Longenette, Plant Manager, Bodycote, Rancho Dominguez, CA (commercial heat treating).*
- *Scott Brown, CMI Industry Americas Inc., Salem, Ohio (new furnaces).*
- *Trevor Jones, “Principal Engineer” R & D, Solar Atmospheres, Souderton, PA (commercial heat treating).*
- *Brad Luce and Rudy Saucedo who a couple of years back started Modern HT in Richland Hills, Texas (commercial heat treating).*
- *David Rascke, Atmosphere Engineering, Greenfield, Wisconsin (flow meters).*
- *Greg Matula, Engineering, Elinio Industrie-ofenbau Carl Hanf GmbH, Germany (new furnaces).”*



## Vacuum Furnace Wanted

Now can anybody help this fellow out? If so feel free to drop us an e-mail and we will put you in touch [jordan@themonty.com](mailto:jordan@themonty.com) ; *“Looking to purchase a drop-deck/bottom-load VACUUM furnace with a minimum inside diameter of at least 92” to accommodate some of our standard assemblies that run up to 86”-88” OD. Prefer 72” inside height. Alternate loading configuration (i.e., car load), as well as used and/or international sources would be considered in an effort to reduce the cost considerations. Upon request, we can provide pictures, sketches or a size chart of the items being annealed, if needed”* **July 24, 2018**

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## United Process Controls Open House

*“Our two offices in Wisconsin have finally come together under one roof, and now that we’ve settled in, it’s time to celebrate with an open house. United Process Controls invites you to join us at our new facility in Oak Creek, Wisconsin on August 21, 2018, for an Open House celebration. Customers, associates, suppliers, and local business partners, as well as family and friends are welcomed to see our new operation, meet our expanded team, and learn more about what we do. We’re also celebrating with a barbecue and refreshments. If you plan to attend, please RSVP online. We owe our success to individuals like you, so thank you for your support and hope to see you at this special event.*

**WHAT’s the hype?** *Open House celebration with appetizers, barbecue, and refreshments.*

**WHEN?** *Mark your calendar: Tuesday August 21 from 2pm until the party lasts.*

**WHERE’s the party at?** *6724 South 13th Street, Oak Creek, WI 53154*

**WHO can attend?** *You and anyone you would like to bring.*

**RSVP?** *Yes. Please confirm no later than Thursday August 16. Click here to register.” July 24, 2018*



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## Monday Morning Briefing

We start off in the UK for this news item about an ammonia leak at commercial heat treater **Beta Heat Treatment**. This reminds us of the rash of ammonia leaks in the US just a few years back. Ammonia is a critical ingredient in “crystal meth” (an illegal drug) and drug dealers quickly learned that heat treaters were a source for ammonia, which led to a rash of thefts generally leaving the tanks leaking ammonia which prompted several evacuations. For this reason ammonia tanks in North America are now typically surrounded by fences, razor wire and spotlights.

*“About half-a-tonne of the gas was believed to have leaked from Beta Heat Treatment Ltd in Summerton Road, Oldbury, West Midlands, on Friday. West Midlands Fire Service was called at 18:00 BST and homes and businesses in a 100m (328ft) radius were evacuated. Police urged people to keep away and paramedics are also at the scene. The ambulance*

service assessed one person at the scene but they did not need hospital treatment. The fire service said six workers had already got themselves out of the site as crews arrived. They have not been seriously injured. A spokesman added that a “damaged valve” is believed to have caused the leak at site, which uses ammonia to harden steel.” **July 23, 2018**



We regret to mention the passing of **Rod Holstein**. Rod worked for commercial heater **HTG** in the USA for over 40 years. Although Rod retired in 2015 he continued to work with the company on a part time basis right up until the end of 2017. “Funeral service for Rodney V. Holstein, Sr., 73, of Eastlake, will be 10 a.m., Thursday, July 19, 2018 at Davis-Babcock Funeral Home, 4154 Clark Ave., Willoughby, OH 44094. Family will receive friends 4 to 8 p.m., Wednesday, July 18, 2018 at the funeral home. Rod passed away peacefully Sunday, July 15, 2018 at Regency Hospital with his family by his side. He was born June 9, 1945 in Charleston, West Virginia. Rod was a trusted and loyal employee of Hi Tecmetal Group, Thermal Treatment Division. He was respected for his knowledge of the heat treating industry. He took the advice of a former boss to learn all that he could about the trade. Rod was a loving husband, father, and papa. He loved camping, golfing, taking long country rides, and Cleveland sports. He was very patriotic and loved everything about our country. Over the years, his pampered and loved dogs went with him and his wife. Survivors include his wife of 48 years, Carol (Crookham) Holstein; children, Laurie Holstein, Lisa (James Spikes) Holstein, and Rodney (Holly) Holstein, Jr.; grandchildren, Kelli, Michael, Matthew, Joshua (Melissa), Stephanie (Eric), Sabelle, and Eric; and several great-grandchildren; sisters, Renee Potter and Gerri Holstein. He also leaves behind three nephews and their families. He was preceded in death by his son, Jack Holstein in 2004; and his parents, David and Aderinne Holstein. Final resting place will be in Willoughby Memorial Gardens following the service on Thursday. Family suggests in lieu of flowers,



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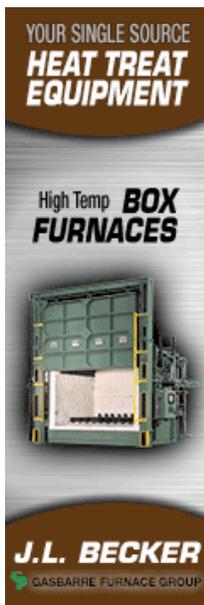
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Over the years, his pampered and loved dogs went with him and his wife. Survivors include his wife of 48 years, Carol (Crookham) Holstein; children, Laurie Holstein, Lisa (James Spikes) Holstein, and Rodney (Holly) Holstein, Jr.; grandchildren, Kelli, Michael, Matthew, Joshua (Melissa), Stephanie (Eric), Sabelle, and Eric; and several great-grandchildren; sisters, Renee Potter and Gerri Holstein. He also leaves behind three nephews and their families. He was preceded in death by his son, Jack Holstein in 2004; and his parents, David and Aderinne Holstein. Final resting place will be in Willoughby Memorial Gardens following the service on Thursday. Family suggests in lieu of flowers,

contributions be made to St. Jude Children's Research Hospital, [www.stjude.org](http://www.stjude.org) or to Lakeshore Assembly of God, 8880 Lakeshore Blvd., Mentor, OH 44060."

**Zach Morgan, Super Systems;** "Instrumentation and Controls leader Super Systems, Inc (SSi) recently added to its existing Los Angeles-based team with degreed Engineer Zach Morgan. Zach previously worked at SSi's global headquarters in Cincinnati, OH. Zach has been exposed to a variety of captive and commercial Heat Treaters during his tenure with SSi, quickly becoming fluent in vacuum and atmosphere controls. Steven Christopher, a member of the SSi-West Coast team, has expressed excitement about Zach's addition: "I have followed Zach's success through our company over the recent years. He has done a great job managing small and large projects alike. In every case he has excelled and built a reputation as a reliable, knowledgeable controls engineer. He is a great addition to our SSi West Coast team and gives us an opportunity to increase our bandwidth for both existing and new customers." Living within 15 minutes of LAX, Zach will be only a direct flight away from the majority of the western USA-from the Rockies to the Pacific. Zach is trained in SSi Instrumentation, Allen Bradley RS500/5000 Platforms and HoneywellUMC800/HC900 Controllers. [zmorgan@supersystems.com](mailto:zmorgan@supersystems.com) <http://www.supersystems.com/>

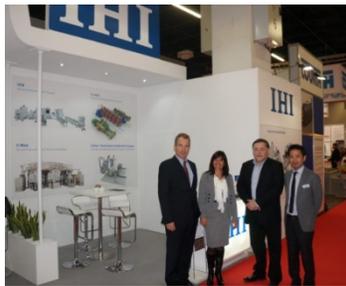


Commercial heat treater *Traitements D'Acier S T* in Quebec, Canada is adding a couple of batch IQ furnaces. Traitment D'Acier is a company which offers a few different processes. Speaking of batch IQ furnaces here is some useless trivia for you. The Batch IQ furnace was originally designed by US furnace builder *Surface Combustion* in the US almost 65 years ago and it is now the most common style of furnace in North America and probably the world.

*American Axle & Manufacturing* (formerly *Torqtek*) down in Charleston, SC will be sending some equipment to auction, this includes some heat treating equipment such as a rotary hearth furnace and a couple of press quench units. *Laser Heat Treating*. Until recently when we visited a company by the name of *Laser Hard* in Pennsylvania, USA we had never run across commercial laser heat treating. Oddly enough we just ran across a second

commercial heat treater in North America offering laser heat treating. The company is **Synergy Additive** in Michigan and we know virtually nothing about them.

Where are they now? **Paola Canal**. For almost 25 years Paola was with Italian furnace builder **CIEFFE** as Area Sales Marketing Manager before joining **Ipsen** for a little over 3 years. While Paolo took a brief interlude from the industry she recently joined holding company Italstart which just announced that they have acquired furnace manufacturer **Meapforni**. We have this photo of Paola from the German heat treat show back in 2015.



**Wisconsin Oven** sent us this press release; *“Wisconsin Oven Corporation announced the shipment of four (4) electrically heated enhanced duty walk-in ovens to an automotive parts manufacturer. These industrial ovens will be used for aging aluminum parts. The walk-in ovens have a maximum operating temperature of 260°C (500°F) and work chamber dimensions of 6’0” W x 15’0” L x 6’0” H. Guaranteed temperature uniformity of +/- 10°F at 200°C (392°F) was documented with a standard nine (9) point profile test in an empty chamber under static operating conditions.”*



And to round things out we have this photo from **Southwest Heat Treat** in Houston, Texas showing a large load being processed in a carbottom furnace. Southwest is part of **Bluewater Thermal** one of the largest commercial heat treats in North America.



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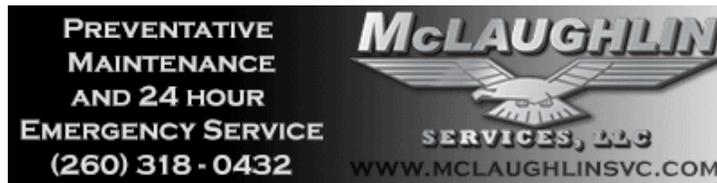
## Bodycote Opens New Heat Treatment Facility in UK

Since we are mentioning the new Bodycote facility in the UK we will slip in that at the time of publishing Bodycote shares were trading at 1,037 GBX which might be an all time high. **July 18, 2018**

*“Bodycote, the world’s largest provider of heat treatments and specialist thermal processing services, is pleased to announce the opening of a new facility in the Advanced Manufacturing Park (AMP), Rotherham, Yorkshire, to support the aerospace and power generation markets in the UK and Europe. Simon Blantern, Vice President of Sales Europe for Bodycote’s Aerospace, Defence & Energy heat treatment division, adds: “This investment demonstrates Bodycote’s continuing commitment to align resources to serve both the aerospace and power generation markets.” The new facility, fully operational in 2018, will offer a number of heat treatment processes. Additionally, major OEM approvals will be secured along with Nadcap accreditation.*

*About Bodycote. With more than 180 accredited facilities in 23 countries, Bodycote is the world’s largest provider of heat treating and specialist thermal processing services. Through classical heat treatment and specialist technologies including Hot Isostatic Pressing (HIP), Bodycote improves the properties of metals and alloys, extending the life of vital components for a wide range of industries, including aerospace, defence, automotive, power generation, oil & gas, construction, medical and transportation. Customers in all of these industries have entrusted their products to Bodycote’s care for more than 30 years. For more information, visit [www.bodycote.com](http://www.bodycote.com). For more information, please contact: Simon Blantern, Vice*

President of Sales, Europe – ADE Heat Treatment Email: [simon.blantern@bodycote.com](mailto:simon.blantern@bodycote.com) /  
Tel: +44 (0)1625 505300”



## Has The Time Come for Carbon Fibre Fixturing?

This is the 5 second summary of Carbon Fibre Fixturing; *“CFC fixtures withstand heat of up to 1,300 °C, tremendous temperature fluctuations and a high weight load and still stay “in shape”. This makes them the ideal workpiece fixture for use in heat treatment, for example, when hardening metallic components. The material used is CFC (carbon fiber carbon composite) and was first used in space flight. In the last 15 years, thanks to its outstanding material properties (dimensionally stable, robust, durable, lightweight), it has become firmly established in heat treatment.”*

For years now we have from time to time come across carbon fibre fixturing in heat treating furnaces-and have always been suitably impressed at the weight (almost nothing), life (virtually indefinite), lack of distortion (none) and tolerances (very tight). What we have not been impressed by is of course the price (damn expensive is how we would summarize it). A funny thing has been happening in the past little bit though-namely we have been running across more and more examples of CFC fixturing, still mainly in vacuum furnaces but every once in a while in an atmosphere furnace. We have been a little puzzled as to why the higher profile of CFC fixturing after all these years until a captive heat treater running transmission parts in a vacuum carburizing furnace told us his payback period-2 years which made us sit up and take notice. In this particular case the customer explained to us that longer life and less distortion were important issues but the reduced weight was

the deciding factor insofar as he was able to increase production by 20% due to the fact that he was able to get away from heavy, sand cast, multi layer fixturing. Combine this with the life and you end up with numbers that will impress any heat treater. While CFC fixturing is still largely in the realm of vacuum, recent developments mean that CFC fixturing can be used in an oil quench application meaning that we will start seeing more and more in atmosphere furnaces (although oxidation is an issue). We don't expect to see CFC fixtures taking over the market in the near future we do see it becoming more and more popular. More on this interesting trend to come. *July 17, 2018*



## Where Are They Now? Larry Midla.

We had a conversation today with a long time heat treater whom we had lost touch with. Larry has spent his entire life in the heat treating industry both on the captive and commercial side of things. For a number of years he ran his own heat treat shop, Low Country Heat Treat in South Carolina before closing it a few years back. His other positions include a consulting position with Bosch (auto parts, captive heat treating) and a stint at teaching most recently. As it turns out Larry is now thoroughly enjoying complete retirement in Charleston, SC, USA-we wish him the best. *July 17, 2018*



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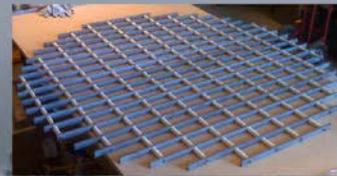
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## **SECO/WARWICK, Meadville, PA**

A very well known name in the furnace manufacturing industry is that of SECO/WARWICK headquartered in Swiebodzin, Poland, however having said that our focus today is on the company's North American headquarters located in Meadville, PA. It's a number of years since we visited this location and we were curious about the changes, as it turns out there are many. First off there are now two companies at this location, not just one: SECO/VACUUM Technologies under the direction of Mr. Piotr Zawistowski which obviously concentrates on the vacuum furnace industry and SECO/WARWICK Corp. under the direction of Jonathan Markley, which is involved with a very wide array of thermal processing atmosphere furnaces, CAB furnaces (controlled atmosphere brazing), and aluminum processing and melting equipment. To give you an idea about the relative size of each division, SECO/WARWICK Corp., has roughly 55 employees while SECO/VACUUM has 12. An interesting fellow Jonathan Markley by the way. His working career started with General Electric in Erie, PA (just down the road from Meadville) where he was largely



involved with the mining industry which meant a small change of direction when he joined SECO/WARWICK Corp. in 2013. He quite obviously loves the industry and has taken a very hands on approach, as an example one local heat treater told us that shortly after Jonathan joined the company he picked up the phone, called our friend and asked what he could he do to become a trusted supplier (we understand a friendship was born out of this single phone call). We mentioned about changes we saw during this visit-the first thing we noticed is that the plant and the offices have all been substantially upgraded and modernized over the past few years. The photos below show the plant as it is today along with some equipment almost ready to ship. By the way with locations around the world SECO/WARWICK has the ability to build in several different locations, and

where equipment is built is based upon what makes the most sense for the customer. **July 16, 2018**



*Don Marteeny, VP, Engineering, Jonathon Markley, Managing Director, Gord Montgomery*

## Italstart/Meapforni

A couple of weeks back we promised to tell you about a very substantial change in the Italian-and obviously the entire European furnace building industry. Things always take longer than expected but we now have this update. **July 16, 2018**

*“Italstart announces today that it is acquiring Meapforni, a company that specializes in the design, manufacturing, and service of industrial furnaces. Italstart is a holding company founded by Mr. Francesco Pieropan and Ms. Paola Canal and others colleagues and investors, both executives with extensive experience in this sector, having held positions at Cieffe Forni Industriali, as Vice President of Sales and General Manager respectively. Meapforni is based in the Northeast of Italy, a short drive from the international airport of*

Venice. This is a region that is well known internationally as a pole of high quality industrial production and technology innovation. The company was started in 2015 by Arcangelo Pessot, the original founder of Cieffe and its President from 1984 to 2014. Mr. Pessot will stay on with the new company, assuming the position of Vice President of Business Development and R&D. Mr. Pieropan states: "We are very excited by the opportunities that are represented by this new entity. Our management team has a combined experience in the field of industrial furnaces exceeding 40 years. Our design team team has developed state-of-the-art technology and our production facility is capable of turning out all different types of atmospheric and non-atmospheric furnaces. We have plans to expand our marketing efforts internationally and to build a highly recognized brand in this sector."



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## Jody Turin/Bodycote

One of our favorites at commercial heat treater Bodycote just retired. Jody Turin, based in the Boston, USA area worked with Bodycote for many years in a number of different positions which included safety and marketing. Jody retired at a relatively young age to pursue a number of different interests. We wish her the best of luck in retirement and look forward to keeping in touch in the future. **July 16, 2018**



## Ipsen USA Ships 18 Furnaces in Q2 Including Record-Breaking Vacuum Furnace

*"Ipsen USA continues its outstanding performance through the second quarter with the shipment of 18 furnaces to companies in six states in the U.S. and two companies overseas.*

*These shipments included multiple atmosphere furnaces, plus the shipment of one of the largest vacuum furnaces Ipsen has ever built. This horizontal furnace features a 210,000-pound (95,254 kg) load capacity that is equipped with eight 35" diffusion pumps and a stainless steel shielded hot zone assembly that is capable of achieving  $\pm 5$  °F temperature uniformity.*

*Ten atmosphere box furnaces were shipped to a company in the Aerospace industry, while one temper furnace went to a U.S. based Commercial Heat Treater. Other shipments included three TITAN H2 (18" W x 24" L x 18" H) 2-bar furnaces and three TITAN H6 (36" W x 48" L x 36" H) 2-bar furnaces. All of these TITANs are equipped with Ipsen's unique PdMetrics® software for predictive maintenance.*

*Many of these companies took advantage of Ipsen's support offerings, which include Ipsen U training, spare parts kits and installation supervision/start-up. Ipsen continues to support the diverse needs in multiple industries around the world with innovative heat treatment processes that utilize the latest technology. Visit [www.IpsenUSA.com/Products](http://www.IpsenUSA.com/Products) to learn more about the extensive solutions Ipsen has to offer.*

**About Ipsen.** *Ipsen designs and manufactures industrial vacuum and atmosphere heat-treating systems, supervisory controls systems and predictive maintenance software platforms for a wide variety of industries, including Aerospace, Automotive, Commercial Heat Treating, Energy and Medical. With production locations in America, Europe and Asia, along with representation in 34 countries, Ipsen is committed to providing 360° support for customers worldwide. Choosing Ipsen means choosing a partner in success." July 13, 2018*



## **Laser Heat Treating**

A couple of weeks back we had an announcement about Peters Heat Treating Inc., investing in laser heat treating along with a partner, Phoenix Laser Solutions. As a follow up to that announcement we visited Laser Hard and saw laser heat treating up close and personal.

Very interesting technology and obviously a large investment on the part of Peters and Phoenix. We will be very interested in where the technology goes. **July 12, 2018**

*“Laser Hard, Inc. has invested in the world’s first mobile robot for targeted laser hardening and tempering of metal surfaces. This state of the art Robotic Laser Heat Treating System is the first production system of its kind in the United States. The robot combines the latest innovations in laser technology and optical pyrometry (temperature control). It utilizes a six*

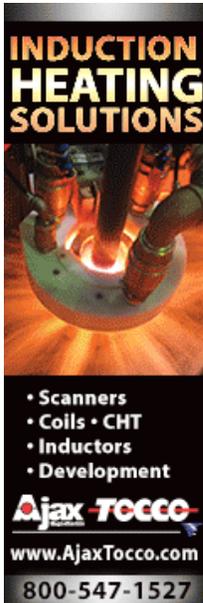


*axis robotic arm which articulates with a two axis tilt-able rotary table. This movement control provides the capability to project the laser beam in free 3D movements precisely following contours of parts with complex geometries. Laser Hard, Inc. is a partnership between the Learn family of Phoenix Laser Solutions and the Peters/Wilkosz family of Peters’ Heat Treating, Inc., both with deep roots in the Meadville community. “This technology will connect the vast knowledge that we both have acquired in two different fields; it will take the science of metallurgy and the craft of toolmaking to new horizons”, said Blair Learn, owner of Phoenix Laser Solutions. The Laser Heat Treating processes include hardening, tempering and annealing; therefore delivering the same properties as conventional heat treating, but with added benefits of accuracy and adaptability to work piece geometry. The improved accuracy is*

*made possible by the heat treatment process being delivered via laser energy. With the recent advancements in laser technology, highly efficient and vastly more powerful instruments are now available. When this technology is integrated with the latest advancements in robotic automation, the heat-treating process can now be adaptively applied to simple or complex geometries. The flexibility of this system imports basic part coordinates from a component through a convenient scanning function, which replicates a virtual 3D workpiece, providing exact dimensional details of the areas where hardening is required. This doubling down in advanced technology coupled with optical pyrometry, provides the ultimate competitive advantage by achieving accurate and repeatable case depth hardness with work piece versatility, which eliminates secondary machining of unwanted hardened surfaces. The digitally controlled laser heat source elevates temperature for heat treating by localizing energy directly to the required work area. The following benefits are provided via this process:*

- *The surrounding area of the workpiece receives minimal to nil thermal load;*

- Pinpoint accuracy of workpiece surface hardening;
- For quality control, the hardening process is documented with an onboard temperature control and charting, ensuring process reliability and reproducibility.



*You cannot find the same precision through induction or flame hardening. The actual hardened surface is not cosmetically compromised as much as an induction or flame hardening operation; the treated area quite often will require little or no hard finish time. The precision repeatability of the technology assures us of a hardening process that is much more accurate than anything else that is available today. In addition, the machine is portable, so if a customer has parts that are too large to move or cannot be easily disassembled for processing the machine can be brought to their facility. Customers can now economically benefit from the Key Benefits below, as they provide the ability to achieve perfection in custom surface hardness and case depth accuracy, while lowering post manufacturing and machining process cost. Key Benefits include:*

1. *Precision Delivery: The laser heat treating system provides the advantage of focused energy to only the specific areas where hardening or tempering is required, thus significantly reducing, if not eliminating the need for secondary machining of undesired hardened areas. Once Laser Hard's skilled technician programs the layout of a customer's workpiece, the advanced robotic laser system precisely follows the workpiece contour in freeform 3D movements, thus allowing parting line edges, grain surface, nubs or individual points to be hardened with exacting precision.*
2. *Depth Control: Unlike conventional heat treating systems, the energy output of this advanced laser system is digitally controlled with exacting measure, to assure the desired case depth hardness is achieved. The temperature-dependent control of the laser, governed with a real-time pyrometer, delivers precise energy to the location, achieving the measured degree of hardening required.*
3. *Mobility: The system is 100% portable, allowing it to be taken to the components requiring heat treating. The self-driving tracks allows the unit to be brought directly to the work station while the components remain in position, saving expensive teardown costs. Forget about time-consuming dismantling of heavy components – Laser Hard can simply drive the laser with its self-propelled crawling chassis directly to the part to be*

*hardened. On site, the flexible, wide sweeping robot arm easily reaches even the most challenging work pieces.*

*The Robotic Laser Heat Treating System is the ideal tool for targeted partial hardening or tempering of metal surfaces. It can be utilized for products that are normally induction hardened, products that are normally case hardened and surfaces that are normally nitrided to improve wear characteristics. For example, on large plastic injection molds, you will be able to finish machine with pre-hardened tool steels and then laser harden the shutoff areas/parting lines and wear surfaces. This will save the tool maker hundreds of hours of finish machining on a hardened tool yet still provide the long life expectancy for the end users. Applications for Robotic Laser Heat Treating include:*

- *press break forms*
- *cutting edges*
- *bend or forming radii*
- *gear teeth*
- *splines*
- *bearing journals*
- *feed screws for plastic injection molding machines*
- *cam faces*
- *punches*
- *pocket floors*

*Due to the temperature control of Laser Hard's laser, the heat can be applied precisely to the desired area, which makes it possible to achieve exactly the required degree of hardness, without material distortion of the surrounding areas. The component's surrounding areas receive little or no heat load. During heat treating, the process and parameters are being documented by an onboard quality system to ensure quality of the process and reproducibility. With its self-driving tracks, the robot can effortlessly be driven directly into the desired area. Once on site, the flexible robot arm moves in free 3D movements, reaching even the most demanding, three-dimensional workpieces without issue. Therefore, there is no need to remove the components to be heat treated. Burlings, scars, or single dots are not a*



problem. The only requirement for the laser is free access to the work piece surface to be treated.



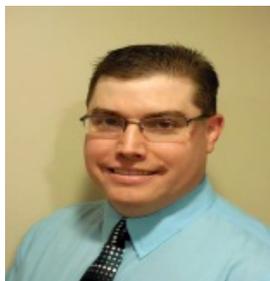
*Blair Learn, Doug Peters*



## Paulo

For today Thursday, July 11 we have two news items about Paulo, one of the largest commercial heat treaters in North America. **July 12, 2018**

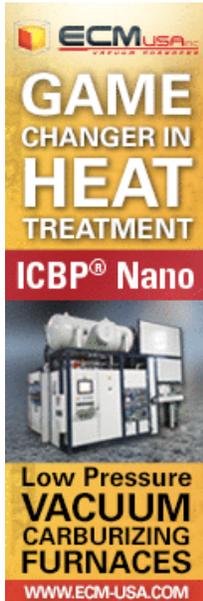
*“Chad Simpson Promoted to Director of Quality; Chad joined Paulo in early 2017 as Corporate Quality Manager. Since that time Chad has overseen the successful completion of dozens of internal and external audits, including transition audits from ISO/TS 16949 to IATF*



*16949and from AS9100 rev C to rev D and Nadcap recertification audits. Chad has also led efforts to standardize quality documentation across all Paulo facilities and in risk assessment and mitigation planning. Chad commented on the new role, “The core of our quality mission at Paulo is to help our customers succeed. I am excited to embark on this new opportunity, as the Director of Quality, to lead the*

quality efforts and move Paulo to the forefront in the Heat Treatment and Metal Finishing solutions realm. Our customers rely on our quality processes to ensure the reliability of their parts. I look forward to the growth of this great organization now and in the future.”

Paulo had a fire, a small fire at their facility in Tennessee. As you can see it was quickly extinguished with very little damage. *“Firefighters responded to a fire at a local multi-furnace heat treat facility Tuesday morning. Murfreesboro Fire Rescue Department sent two ladders, three engines and two rescue vehicles to help fight the blaze. The fire was called in around 11:43 a.m. from Paulo, a sheet metal heat treating facility in the 1300 block of Rutledge Way in Murfreesboro. “A machine they use, the exhaust system caught fire,” MFRD Battalion Chief Mark McCluskey said. “When we first got to the scene, we had a lot of smoke.” The machine itself, designed to work at several hundred degrees Fahrenheit, was undamaged, manager Dave Timken said. “It was a small fire in the roof, and it was just an awkward place to put it out,” Timken said. “No one was injured, everyone’s fine.” The damage from the fire was restricted to some insulation and a section of the roof, McCluskey said. “It’s all made to get really hot,” he explained. Scorching temps Tuesday morning required MFRD switch out crews regularly, especially for the teams on the roof. To help fight the fire, fire personnel ran 700 feet of large diameter hosing out to the hydrant at the curb, McCluskey said. Paulo employees had all evacuated the building by the time fire crews arrived around 11:47 a.m. They had reentered the building and started work again by 12:45 p.m. “(MFRD) responded well, and came out just to make sure everything was ok,” Timken said. “Thankfully it was really small, just in an awkward place to put it out.”*



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## CAN-ENG To Deliver A Mesh Belt Hardening Furnace

*“CAN-ENG FURNACES INTERNATIONAL LTD. has been contracted to design and commission a complete Large Capacity Fastener Hardening Furnace System for a Tier 1 Automotive Supplier based in Detroit. This contract is a result of successfully delivering multiple systems to this customer over a twenty-year period and supports the capacity increases for this*

*Fastener Manufacturing company, which offers wire processing, heat-treating, coating and packaging services.*

*CAN-ENG Furnaces International, Ltd. was contracted to see through the design and commissioning for a complete high quality automotive fastener hardening furnace system that closely integrates a Computerized Part Tracking and Metering System, Pre-Washer, Mesh Belt Hardening Furnace, Oil Quench System, Post Washer, Temper Furnace, Soluble Oil System, Endothermic Gas Generator and Level 2 Automation System. The contracted system is engineered to produce at a rated capacity of 6000 lb. (2700 kg) per hour.*

*CAN-ENG's customers continue to enjoy the benefits associated with time-tested Mesh Belt Furnace designs which promote soft loading and handling features that minimize part damage and mixing potential. Custom designs provide energy efficient alternatives to forward-thinking users that are focused on the lowest cost of ownership procurement. This customization includes reduced energy consumption heating systems, reduced atmosphere consumption and improved system maintainability and useful service life. This project is currently being processed through manufacturing and is planned for commissioning Q1 2019.*

*Established in 1964, CAN-ENG Furnaces International Limited is a leading designer and manufacturer of thermal processing equipment for ferrous and non-ferrous products for automotive, aerospace, forging and foundry manufacturing industries. CAN-ENG focuses on the development of high volume continuous industrial furnaces for challenging applications. CAN-ENG is an ISO 9001:2015 certified company with its head office and manufacturing facility located in Niagara Falls, Canada, close to major transportation hubs and easily accessible from anywhere in the world to service globally. For more information, please contact Tim Donofrio – Vice President of Sales at [tdonofrio@can-eng.com](mailto:tdonofrio@can-eng.com) or visit [www.can-eng.com](http://www.can-eng.com).” July 12, 2018*

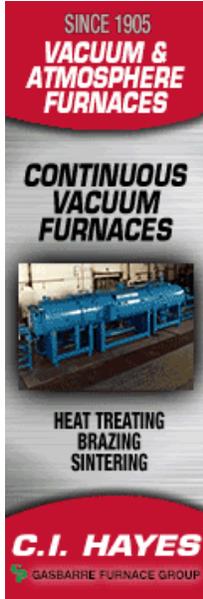


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## Who the Heck is Adoh Mac Fhionnbhairr?

Pronounced “Ay Mac Inver”, Ay’s official title is Group Head of Corporate Development for worldwide commercial heat treater Bodycote. However that doesn’t tell us a great deal so let’s put it this way: Ay will be working with our good friend Mario Ciampini, to find

acquisitions for the company which means if you have a heat treat for sale Ay is the man to talk to. Based in Dusseldorf, Germany his background is Irish (which explains the barbaric spelling of his name, almost as bad as the Scottish) and while new to the heat treating



industry he strikes us as a pretty sharp guy. Ay is shown in the photo below (middle) flanked by Mario Ciampini and Gord Montgomery. This photo was taken at the Bodycote facility in Burlington, Canada-the history of this plant is below. As a special, bonus photo we have this one of Biji George, Regional Manager for Bodycote also taken at Bodycote, Burlington. By the way the last time we had a photo with Biji was about 15 years ago when he was with Heat Treating Services in Michigan. **July 11, 2018**

**SEPT 2016;** *“Bodycote, the world’s largest thermal processing services provider, announced today that it has acquired Nitrex Metal Technologies. Nitrex Metal Technologies specializes in precision gas nitriding and ferritic nitrocarburizing in both batch and continuous forms. Continuous gas nitriding and ferritic nitrocarburizing are unique in the industry and are particularly suited to high-volume automotive work. The addition of Nitrex Metal Technologies to the Bodycote Group broadens the range of thermal processing services that Bodycote offers, which already range from conventional atmosphere heat treatments like batch IQ, vacuum, and induction to more exotic specialty technologies like LPC, BoroCote®, and Corr-I-Dur®. Dan McCurdy, President of Bodycote Automotive and General Industrial Heat Treating in North America and Asia, commented that “Nitrex Metal Technologies is a great addition to the Bodycote Group. Along with the rest of Bodycote’s existing service offerings, this acquisition really cements our position as the go-to expert source for all things nitriding”.*



*Mario Ciampini, Adoh Mac Fhionnbhairr, Gord Montgomery*



*Biji George*

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## ***Advanced Heat Treat Corp./New Additions***

*“Advanced Heat Treat Corp. (AHT), a recognized leader in heat treat services and metallurgical solutions, announced today the addition of three new sales and marketing employees: Vasko Popovski, Jason Taylor and Lindsey Newcomb. The new sales and marketing leadership will help prepare the company for increased national growth.*



*Popovski, Regional Sales Manager for AHT’s Michigan facility, joins the team with over 25 years of experience in heat treatment, metallurgy and engineering. Taylor, Regional Sales Manager in Alabama, brings nearly 20 years of experience in tool and die knowledge; and Newcomb, Marketing Manager in the corporate office located in Iowa, rounds out the growing team with over a decade of sales/marketing experience, most recently at a global business process outsourcing company.*

*AHT President Mikel Woods commented, “The team’s diverse experience will help take AHT to the next level and allow us to expand our penetration in the southeast and Great Lakes regions of the United States.” Popovski will focus on heat treat needs in the Great Lakes area. The Michigan AHT facility offers ion (plasma) and gas nitriding, ferritic nitrocarburizing, UltraOx®, stress relieve, s-phase nitriding and more. Taylor will cover sales in the southeast region of the country. The Alabama AHT facility also provides ion (plasma) and gas nitriding, ferritic nitrocarburizing, UltraOx®, stress relieve and sphase nitriding.*

*“With our knowledgeable sales staff and multiple locations, we’ll be able to better serve our customers and give them the UltraGlowing® experience in every location, every time,” added Woods. Learn more about Advanced Heat Treat Corp. and its 20+ surface treatments at [www.ahtcorp.com](http://www.ahtcorp.com) or by calling (319) 232-5221. “**July 10, 2018***



*Jason Taylor*



*Lindsey Newcomb*



*Vasko Popovski*

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## **Parker Hannifin Auction**

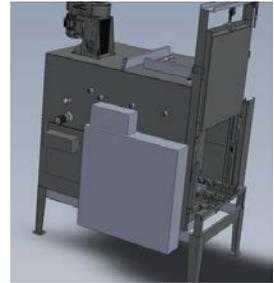
Parker Hannifin in Laval, Canada is closing down and amongst the items up for auction is this gas fired mesh belt furnace line. There doesn't appear to be anything wrong with it but our guess would be that it sells for almost nothing or more likely is scrapped. An auction with only a single item of heat treating equipment and in Montreal to boot is unlikely to attract much if any attention and this is not a furnace which will have broad appeal anyway. **July 10, 2018**



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## Gasbarre Furnace Group/J. L. Becker Automated Temper Furnaces

*“Gasbarre Furnace Group/J. L. Becker recently shipped a pair of 36” x 48” x 36” Electrically Heated Temper Furnaces to a major drive supplier in the Southeast. The furnaces are designed to preheat workloads prior to hardening and temper workloads after hardening. Their maximum workload capacity is 4,000 lbs. The furnaces are designed to operate from 300°F to 850°F with a temperature uniformity of  $\pm 5^\circ\text{F}$ . Roller rails and a chain guide allow the furnaces to be loaded and unloaded by the company’s existing powered transfer cart. A motorized damper aids the furnaces to quickly cycle between high and low operating temperatures. The control systems each incorporate an Allen Bradley CompactLogix PLC and ELO HMI which enable the furnaces to be installed in the customers existing “lights out” automated system. Located in Plymouth, MI, Gasbarre Furnace Group/J. L. Becker has been designing, manufacturing, and servicing a full line of industrial thermal processing equipment for over 40 years. For more information; Patrick Weymer at (815) 721-6467 or via email at [pweymer@gasbarre.com](mailto:pweymer@gasbarre.com)” July 10, 2018*



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## Bodycote Syracuse, NY

*“Bodycote experienced a fire at its Syracuse, NY location on Friday, July 6. There were no injuries but the facility has been rendered unserviceable. Bodycote will continue to provide heat treating services for customers from other Bodycote locations in the region via Bodycote’s freight logistics network until Syracuse services are reinstated. Questions should be directed to Dan McCurdy, President of Bodycote AGI NAA at [dan.mccurdy@bodycote.com](mailto:dan.mccurdy@bodycote.com).” July 9, 2018*



## Aremac Heat Treating/California

Last week we mentioned how Aremac Heat Treating was closing their facility in California. This official press release tells you why. **July 9, 2018**

*“To our Valued Customers, This year has brought us many challenges, but the greatest one of all is Aremac having to say GOOD-BYE to SOUTHERN CALIFORNIA. We were unable to renew our building lease and secure a new location locally. Thus, we made the difficult decision to leave CALIFORNIA and expand our operations in EASTMAN, GA. Currently, the GA facility is AS9100, NADCAP, Boeing, GE and Pratt and Whitney approved and we will continue to add other prime approvals as customer needs dictate. We will be phasing out our California operation over the next 3 – 4 months. During this time, we will do whatever we can to help you transition to another local provider or we can transition your work to our Georgia plant for processing. On behalf of our team here at Aremac Heat Treating, LLC, I want to thank you for your patronage throughout the years. It has been a privilege and an honor to partner with you and service your heat treating needs. Yours Truly, Ed Grott, Vice President/General Manager, Aremac Heat Treating, LLC”*



## Sinterite

Yesterday we talked about St. Marys, PA, USA being the powdered metal capital of the world and some of the companies involved in it including furnace builder Sinterite. Sinterite is part of the Gasbarre Furnace Group which also includes C.I Hayes in Rhode Island, USA and J.L Becker in Michigan. Sinterite was formed in 1978 largely to service the powdered metal industry and currently has approximately 60 people. While we just stated that Sinterite was formed to service the PM industry, that is not entirely accurate in 2018 as roughly half of the 25-30 systems the company produces annually are for sintering with the other half being used for annealing and brazing applications. To break this down a little further out of those 25-30 systems per year about 25% are going to customers outside of North America. Furnaces are of course the backbone of the firm but to compliment that the company also does a great deal of high temperature, alloy fabricating both for their own furnaces, competitors furnaces and for industries completely unrelated to heat treating. By the way the company also works closely with their two sister companies and indeed we some a number of components being manufactured for the JL Becker division. According to the President, Mr. Mark Saline business is excellent (our words not his) and this follows on 2017 which was also a good year for the company. While everybody in the group photo below deserves to be mentioned two people in particular need to be singled out; Shirley Gaffey who as Customer Service Coordinator is often the first point of contact for customers (far left) and Mark Saline (far right). **July 6, 2018**



*Caleb Bennett, Sales Associate, Josh Partlow, Sales Engineer*



## The Death of Nitrogen/Methanol Systems

A visit to a captive heat treater the other day showed us a Nitrogen/Methanol system which has become such an unusual sight that we actually noticed it and felt it was worthwhile commenting on. 40 years ago carburizing atmospheres were produced exclusively by endothermic generators (yes granted there were other systems such as pack carburizing, **Toluene** and a few others but they had such a small market share that they really aren't worth mentioning). Generators at the time did an adequate job-but no more than adequate due to the lack of control and the amount of maintenance required which gave Nitrogen/Methanol systems an opening. And the gas companies seized the opening

and quickly gained a reasonable market share with their legitimate claims that Nitrogen/Methanol was more consistent, cheaper and required very little maintenance. The two technologies existed side by side for quite some time until endo generators themselves started to improve with the advent of atmosphere control, air cooling and systems designed to match generator output to demand (the output limiting technology by the way was introduced by Eric and Jason Jossart of Atmosphere Engineering, now part of UPC). Combine this with the fact that Methane has dramatically increased in price while natural gas has dramatically decreased in price and you can see why Nitrogen/Methanol systems have largely disappeared from the North American market. And that is our industry trend for this week. **July 6, 2018**

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## **RÜBIG Group Expands Into China**

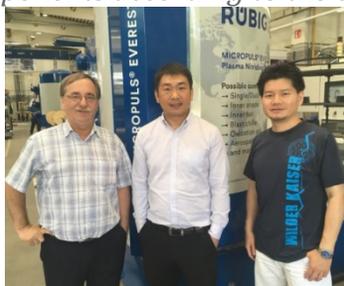
Very recently we mentioned about how furnace builder RÜBIG would be expanding into China-we now have the official press release. **July 5, 2018**

*“AUSTRIA/TAICANG: The focus of the internationally successful RÜBIG Group is sustainable growth. The opening of RÜBIG Industrial Furnaces (Taicang) Co., Ltd. in China was therefore a significant step in further reinforcement of its technological leadership in the production of plasma and gas nitriding equipment. The foundation of the company shall further improve on its internationalisation and help all of its customers to secure their competitive advantage in the field of heat treatment of steel and aluminium materials.*

***Advantages for the customers;** RÜBIG Industrial Furnaces has already installed plasma and gas nitriding equipment in more than 43 countries, while the support for Asian customers was always provided from the head office in Wels, Austria. “To satisfy the ever-increasing quality requirements and equipment reliability, mainly where the automotive and aerospace industries and their suppliers are concerned, the foundation of a new company was a step of a strategic importance and its timing could not have been chosen better”, claims Thomas Müller, COO of RÜBIG Industrial Furnaces. By means of its subsidiary in Taicang, the*

*traditional company guarantees the customary high standard of “made in austria” quality and quicker response times. The man in charge who carries this responsibility locally is Liang (Davis) Zhang, a graduate material scientist who brings along well-founded experience from metallurgy and strategic sales*

*About RÜBIG Group; From its establishment in 1946, RÜBIG developed from a small drop forger to a successful centre of excellence in metals. With its locations in Austria, Germany, Slovakia, USA and China, the RÜBIG Group forms today a globally efficient technology network. At the same time, about 400 employees play the role of the main driver encouraging the development of technology and innovations. RÜBIG Heat Treatment division is an expert in the heat treatment of steel and aluminium materials and offers individual solutions for customer-specific heat treatment requirements. RÜBIG Industrial Furnaces produces plasma and gas nitriding systems as well as plasma-aided coating equipment as its premium segment. RÜBIG Die Forge produces, besides lynch pins and flat link chains, also components according to the customer’s documentation.”*



*From left to right: Peter Buchegger (responsible for sales in the region of China), Liang Zhang and Keyan Liu (project execution RÜBIG Industrial Furnaces)*

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## **Advanced Heat Treating/St. Marys, PA**

The history of commercial heat treater Advanced Heat Treating is the history of St. Marys, PA itself. St. Marys is a quiet little town of roughly 20,000 people very much off the beaten path in Pennsylvania which very surprisingly is known as the powdered metal capital of the world. Back in 1939 St. Marys Carbon started manufacturing carbon products in the

nearby town of Ridegway, which lead to the company producing powdered metal bearings starting in 1952. The rest of the story is history as they say with many of the best known names in the powdered metal business having plants locally, names such as Keystone, Stackpole, GKN and Metco all being common names in the area (by the way two furnace builders have grown up in the area to serve the industry, Sinterite and Abbott Furnace). Interestingly enough most of the powdered metal companies do not heat treat in house but send product out to local commercial heat treaters such as Advanced. Advanced has roughly 30 employees and has on site batch IQ furnaces, mesh belt and steam equipment. Business is booming for the company and within the next few months construction starts on a 15,000 square foot addition. Our host, Mr. Roy Seltzer can be seen in the photo below second from the right in front of one of the companies Allcase furnaces. *July 5, 2018*



**Happy 4th of July to all our American Friends**



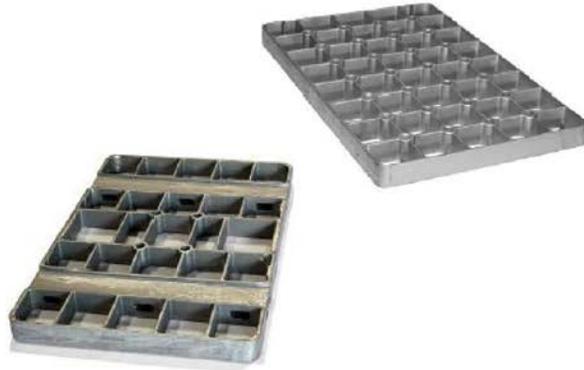
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<sup>1</sup> While supplies last.

<sup>2</sup> Applies to standard design trays only. Some restrictions apply.

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## **Peters Heat Treating, Pennsylvania, USA**

Way back in 1979 Doug Peters founded commercial heat treater Peters Heat Treating in Erie, PA and the man has never looked back since. We visited Doug just last week and he told us about the changes over the years. The company now has three locations, Race Street in Meadville, PA, West Road in McKean, PA and McHenry Street in Meadville (the plant in Erie was closed many years ago, and Doug has a new venture in Meadville doing laser heat treating but that is a story for another day). The location on McHenry Street was acquired by Doug in 2013 as an almost brand new building of roughly 15,000 square feet and is now what we would call his “batch IQ facility” due to the fact that it now houses two very new AFC-Holcroft batch IQ furnaces with room for at least one more (the photo below shows this plant). Current plans have the building doubling in size within the next year and the Race Street plant closing with the equipment moving to this building (McKean is largely vacuum furnaces). Doug is a lucky man in that the company is a family affair with his wife Jackie involved, both children and a son in law-what more could a person want? Doug reports that business is good and getting better-we believe he deserves all this good fortune. *July 4, 2018*



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## Heat Treating of Aircraft Landing Gear

We generally consider heat treating of aerospace components to be real “top end heat treating” because of the extremely tight specifications such as NADCAP which need to be followed. We’re pleased to be able to show you this photo of the in house heat treating department of an aerospace parts manufacturer, a very rare occurrence due to the fact that secrecy is always high in aerospace facilities. In this particular case this company manufacturers landing gear and heat treats them in large pit carburizing furnaces. We have seen the same parts processed in large bottom loading vacuum furnaces with oil quenching also. *July 4, 2018*



## Paulo Cleveland

Back in March/2018 we had an announcement about commercial heat treater Paulo expanding their plant in Willoughby, Ohio, an expansion which included a number of brand new vacuum furnaces being provided by GM Enterprises of California (one of the photos

below shows most of the Paulo, Willoughby team when we visited). We now have this update from Paulo; **July 3, 2018**

*"The growth of the Cleveland Division continues with one of five new vacuum furnaces delivered. The 60"x42"x42" furnace is set in place and is currently being wired and piped. The furnace will be ready for production late July. This represents the first step of a larger expansion that includes a new building. The furnace features an all metal hotzone and 15 bar Argon quenching with an 8,000lb capacity. This added capacity will enable the Cleveland team to continue to quickly turn critical aerospace components with precisely controlled cooling rates. As Aerospace Prime Contractors see backlogs growing to record levels, Paulo continues to invest in increased capacity and state-of-the-art equipment to ensure our customers succeed."*



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## **Mexico Heat Treatment Congress 2018**

David Howard of European furnace builder Codere (whose ad can be found on this page) attended the recent Heat Treatment Congress in Queretaro, Mexico. Here is what he has to say about the event;

*"This event was more international than other years as there were exhibitors from Mexico, USA, Japan and Europe as well as the usual commercial heat treaters from Mexico but also visitors as far away as China, Peru, Colombia and Guatemala. In the photo is our agent José Antonio Ramirez from RT@I who represents Codere SA as well as an innovative company from Bulgaria called Ionitech who offer Plasma Nitriding solutions. In the photo is the third*

generation (l to r) Mr. Boncho Varhoshkov, David Howard from Codere SA, José Antonio Ramirez and Mr. Alexander Varhoshkov.

During the conference Codere made a presentation on their molten salt applications & unique solution for undertaking martempering, austempering among other treatments giving a number of customer examples. Ionitech were introducing themselves to the Mexican market who have sold plasma nitriding units across Europe, Asia and even as far as Australia. They presented a number of test parts, which received much interest from the audience in attendance. Further information on their product range can be found on [www.codere.ch](http://www.codere.ch) & [www.ionitech.com](http://www.ionitech.com)” July 3, 2018



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## Koyo Bearings/Super Systems

*“Dahlonaga Ga: Super Systems Inc. of Cincinnati, Ohio and JTEKT Corporation’s Koyo Bearings brand have completed a controls and software upgrade to deliver more efficiencies through technology enhancements in their heat treating operation at JTEKT’s Dahlonaga manufacturing facility.*

*The scope of the investment includes all engineering, installation, controls and software for their gas-fired hardening furnace line. The new automation included a turnkey retrofit of new control cabinets as well as software necessary for furnace control and historical process data review. The controls and software provide JTEKT with the confidence to heat treat parts to meet the highest standards with complete traceability for its Koyo brand bearings. The instrumentation and software for the update included the hardening furnaces, quench, washer/rinse and temper equipment.*

*“We have been fortunate to work with JTEKT on a number of automation projects over the years and we are looking forward to participating in more innovative heat treating opportunities in the Dahlonaga facility,” says Bob Fincken, Super Systems National Sales*

Manager. "The new control cabinets provide a more electrically safe environment with individual lock outs, isolated disconnects, controllers, AC Drives, programmable logic controllers (PLC), instrumentation, HMIs, motor starters, prints, and of course some of the best services in the industry, led by our VP of Engineering, Scott Johnstone" continues Mr. Fincken. "SSi's ability to understand our needs and provide customized solutions has been a tremendous benefit to us", says Michael Rebula, Heat Treat Supervisor at JTEKT.

For the last decade, Super Systems Inc., based in Cincinnati, Ohio, has been developing and manufacturing products for the thermal processing industry. SSi's products include probes, analyzers, controllers, software solutions and engineered systems. With over 100 years of combined experience, SSi continues to satisfy industry demands with innovative technology, enabling customers to be more efficient and to produce higher quality products.

Koyo is the JTEKT Corporation brand for bearings. JTEKT engineering and manufacturing capabilities range from super large bearings with outer diameters of seven meters to miniature bearings with inner diameters as small as one millimeter. Utilizing new materials and the latest in manufacturing technology, JTEKT Corporation stands at the forefront as a technological leader in the global bearing industry. For more information on **SSi's** capabilities please visit our website at [www.supersystems.com](http://www.supersystems.com) July 3, 2018

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## Canada Day

Monday July 1 is a national holiday in Canada, Canada Day! The offices of WG Montgomery Ltd., will be closed to celebrate the holiday, regular news items will resume Tuesday July 3rd. **July 2, 2018**



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# BATCH FOR SALE

See something you need, click on the link or scroll through all the items for sale. Searching for something we don't have listed, let us know.

[Contact Us](#)

## ***Quick Jump To Items:***

**Item # B456** "Super 30" Batch IQ Furnace

**Item # B455** Lindberg Box Furnace

**Item # B454** Lindberg Box Furnace

**Item # B453** Williams Industrial Batch IQ's (2 Available)

**Item # B452** Applied Heat Technologies (AHT) Fluidized Bed Furnace

**Item # B451** Surface Combustion "Super 30" Allcase

**Item # B450** Lindberg 24" x 24" x 36"

**Item # B449** Air Atmosphere Box Furnace 2,000 F

**Item # B448** Tip Up Furnaces (3 Available)

**Item # B445** Surface Combustion "Super 36" Furnaces (3 available)

**Item # B444** BOREL Furnace 550 °C

**Item # B443** SOLO Heat Treatment Line

**Item # B442** SOLO Quenching Machine

**Item # B441** GM Batch IQ with Top Cool

**Item # B439** Surface "Super 36" Allcase

**Item # B438** Holcroft Batch IQ Furnace

**Item # B437** Ipsen Recirculating Box Furnace

**Item # B436** 36" x 60" Pit Gas Nitrider

**Item # B426** Plasma Nitriding Unit 1000 kg Capacity

**Item # B425** Box Furnace 2000 F

**Item # B415** J.L. Becker Car Bottom 1800 F

**Item # B399** Car Bottom Furnace 10' x 12' x 8'

**Item # B398** Sauder Batch IQ Line 24" x 24" x 36"

**Item # B397** "Lift-Off" Atmosphere Box Furnaces (2)

**Item # B374** Atmosphere Box Furnace 2100 F

**Item # B352** Pacific Scientific Box Furnace

## ITEM # B456

### “SUPER 30” BATCH IQ FURNACE

**“Super 30” Batch IQ Furnace.** Manufactured by Surface combustion in the 1970’s this is a “Super 30” style batch IQ furnace. Gas fired. Working dimensions of 30” wide X 48” deep X 30” high. Complete. Currently in indoor storage and disassembled for loading.

**Asking \$39,000 USD for quick sale.**



## ITEM # B455

### LINDBERG BOX FURNACE

**Lindberg Box Furnace 2000F.** Lindberg Box Furnace Model 11-ROMT-489336-20F. Serial Number 88810-L. Electrically heated, voltage 480/3/60/190kW. Maximum operating temperature of 2000F. Working dimensions of 48” wide X 36” high X 96” long. Controls: Mounted and wired in a free standing control panel includes SCR for heating elements, digital temperature controllers for control and high limit, strip chart recorder etc. Description: Standard Lindberg design box furnace with “Rod Overbend” heating elements, vertical lift door, roller rail hearth, cast alloy tray, two (2) roof mounted fans and stationary powered loader/unloader. Very good condition.

**Asking \$95,000 USD.**



## ITEM # B454

### LINDBERG BOX FURNACE

**Lindberg Box Furnace.** Model #11-MT-489336-14. Serial #888809-L (9/1989). Electrically heated. Operating temperature of 1400F. Voltage: 480/3/60/164 kW. Working dimensions of 48" wide X 36" high X 96" deep. Controls: Mounted and wired in a free standing control panel includes SCR for heating elements, digital temperature controllers for control and high limit, strip chart recorder etc. Description: Standard Lindberg design box furnace with "Moldatherm" heating elements, vertical lift door, roller rail hearth, cast alloy tray, alloy air plenum for air distribution, roof mounted fan and stationary powered loader/unloader. Very good condition.

**Asking \$75,000 USD.**



## ITEM # B453

### WILLIAMS INDUSTRIAL BATCH IQ'S (2 AVAILABLE)

**Williams Industrial Batch, high temperature, electric, Internal Quench furnaces.** 24" W X 36" deep X 24" high load size. Mid 1990s built. 2 identical units available. Currently used for solution heat treat, water and Polymer quench. Max temp. 2100F, very tight +/-10F or better uniformity. Set up for Nitrogen atmosphere. Waukee meters for air and N2 with solenoids tied to recipes. SSI Oxygen probe with panel/display. Sand Lion PLC touch screen controls for recipes, charting, temp, agitator, atmosphere control etc. Horizontal SiCarbide glow bars for heating. SiCarbide rails make up the hearth for tray support and transfer. Chain guide and roller rails over the quench vestibule. Air operated inner and outer doors. Units are in use but ready to take out for the floor space. Transfer car not included.

**Asking price \$25,000 each.**



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## ITEM # B452

### APPLIED HEAT TECHNOLOGIES (AHT) FLUIDIZED BED FURNACE

**Applied Heat Technologies (AHT) Fluidized Bed Furnace.** Applied Heat Technologies (AHT) fluidized bed furnace. Treatment chamber is 300 mm diameter x 900 mm deep (roughly 12 in diameter x 36 in deep.) Maximum temperature is 1050 °C (1922°F). Maximum load is rated at 50 kg at 1000 °C (110 lb at 1832 °F) and 90 kg at 570 °C (198 lb at 1058 °F.) Mark® fluid bed furnace controller software. Silicon carbide heating elements, 25 kW, configured in delta. Piping is set to accept nitrogen, argon, hydrogen chloride (HCl), and hydrogen gasses. Inert material is P120 grit aluminum oxide (Al<sub>2</sub>O<sub>3</sub>) powder. The fluidized bed is designed to deposit vanadium carbide (and other carbides with correct chemistry) onto steel. The fluidized bed system comes with a propane burner, HCl detection system, and scrubber system. The system also has a hood and quench bed that came with it but these have not been used and it cannot be verified that they work. The fluidized bed system with scrubber is currently operational but is not being used. Almost new heating elements with one spare included.

**Asking \$99,000 USD**



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## ITEM # B451

### SURFACE COMBUSTION "SUPER 30" ALLCASE

**Surface Combustion "Super 30" Allcase.** Manufactured by Surface Combustion this is a batch IQ furnace. Working dimensions of 30" wide X 48" deep X 24" high. Gas fired. Nitrogen/Methanol with updated controls and an Atmosphere Engineering SmartMeth panel. Included datalogging and trending. SSi oxygen probe. Honeywell overtemp. Currently installed, complete and in good condition. Ready to go and available immediately.

**Asking \$40,000 USD.**



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### ITEM # B450

### LINDBERG 24" X 24" X 36"

**Lindberg Batch IQ 24" x 24" x 36"**. Straight through design with PLC controls. Serial number: 102350.

**Asking Price: 35,000 Canadian**



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### ITEM # B449

### AIR ATMOSPHERE BOX FURNACE 2,000 F

**Lindberg/MPH** air atmosphere box. Model Number: 11-ROMT-243624-20, Job Number: 224745. Chamber Dimensions: 24" W x 36" D x 24" H. Electrically heated 40KW. Max Temp: 2,000°F. Capacity: 1,200 lbs. @ 2,000°F. Elect. Input: 480/3/60. SCCR Rating: 65 KW. F.L.A.: 5 AMPs. Elect. Drawing: 7315-1134-00A. Largest Motor/Load: 40 KW. Control Panel is included. Manufactured Date: September 2016. Never used this unit is available for immediate delivery with a full warranty.

**Asking \$60,000 USD.**



**ITEM # B448**

### **TIP UP FURNACES (3 AVAILABLE)**

**Tip Up Furnaces (3 available).** Manufactured by Kleenair Products these “Tip Up” style furnaces have working dimensions of 60” wide X 60” high X 72” long. Natural gas heating-1200CFH. Maximum temperature 1500F & 2000F. 460/6/60 electrical. External dimensions of 8’W x 10’6”H (closed) x 14’L Each, 13’6”H when open. Controls: Temperature controls are missing. There is one (1) control cabinet which houses the flame relay modules, motor starters etc. and is common to all three (3) furnaces. Description: Currently available are two (2) 1500°F furnaces and one (1) 2000°F furnace. There is also one (1) loader and one (1) quench tank. Furnaces are ceramic fiber lined with Eclipse “TJ” direct fired burners. Burners fire from top rear and bottom front under the refractory piers. Dual hydraulic cylinders open/close the furnace cover. One (1) common hydraulic power unit for all three (3) furnaces. We will separate the line to sell individually or as a whole. We can provide hydraulic power units for each furnace. Very good condition.

**Asking \$55,000 USD each or \$150,000 for all three.**



**ITEM # B445**

### **SURFACE COMBUSTION “SUPER 36” FURNACES (3 AVAILABLE)**

**Surface combustion gas fired batch IQ furnaces model “Super 36”.** Working dimensions of 36” wide X 48” deep X 32” high. Late 1980’s vintage. Casemate controls, SBS quench oil filter. Set up for endo atmosphere with ammonia addition. Currently installed, furnaces were in operation until February 27th 2018. Complete and in good operating condition. Pricing to come.



**ITEM # B444**

### **BOREL FURNACE 550 °C**

**BOREL Furnace 550 °C.** Built by BOREL in 2006. Technical data: Power 20 kW – Frequency: 50 Hz – Tension: 400V 3LNPE – Maximum temperature: 550 °C – External dimensions: Length 135 cm, Width 130 cm, Height 175 cm – Internal dimension: Width 74 cm- Depth 82 cm – Height 39 cm. Located in France.

**Price on request [jordan@themonty.com](mailto:jordan@themonty.com)**



**ITEM # B443**

### **SOLO SWISS HEAT TREATMENT LINE**

**SOLO Swiss Heat Treatment Line 202-30/30/60.** Built by Solo of Switzerland this is a SOLO 202-30/30/60 model. This heat treatment line was manufactured and modified in 1981-1987-1994. Composition: 1 washing machine, 1 “5 bar gas tank”, 1 “5 bar gas tank” with 35 kW turbine, 1 oil tank, 1 tempering furnace, 1 salt tank, 1 furnace with max. temperature of 850 °C, 1 manual manipulator, temperature regulation system and % CP with regulator, loading material. Possibility of mounting and commissioning by the

manufacturer (SOLO). Actually, in operation, located in Switzerland. Good condition. All manuals included.

**Price on request [jordan@themonty.com](mailto:jordan@themonty.com)**



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### ITEM # B442

## SOLO QUENCHING MACHINE

**SOLO Quenching Machine** 209-30/30 6981 – 1150 °C. Built by Solo of Switzerland this is a SOLO 209-30/30 model. This furnace was manufactured in 1991. Quenching machine for self-hardening and oil quenching. Composition: quenching Bell Furnace, nitrogen quenching unit, tempering furnace, oil quenching unit, controller / programmer, operator panel, temperature controller, hydraulic control. Dedicated for austenitizing, annealing, tempering, oil quenching, quenching under nitrogen. Max. temperature: 1150°C. Main voltage: 3 x 400 V – 50 Hz. Power input: 10 kW. Effective load dimensions: Diameter 300 mm\*Height 300 mm. Max. loading weight: 20 kg. Protective gas: N2 or mixture N2 to max. 5 % H2. Overall dimensions: Height 2200mm, width 2070mm, depth 2250m. Possibility of mounting and commissioning by the manufacturer (SOLO). Located in France. Good condition. All manuals included.

**Price on request [jordan@themonty.com](mailto:jordan@themonty.com)**



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### ITEM # B441

## GM BATCH IQ WITH TOP COOL

**GM Batch IQ with Top Cool.** Manufacturer: GM. Type: Integral Quench Furnace with Top Cool. Heated: Natural Gas – 1.2 M BTU's/Hour. Max. Temperature: 1450-1875 deg. Voltage: 460/3/60. Work Area: 36"W x 36"H x 48"L.

Controls: All mounted in two freestanding panels next to the furnace Includes motor starters relays, pushbuttons, signal lights etc. Honeywell indicating controller and overtemp. Honeywell circular chart recorder for recording temperature. Carbon control system.

Description: Furnace has (4) "U" shaped radiant tubes mounted vertically, (2) on each side wall. Heated by recuperated burners. Alloy roller rail hearth, alloy circulating fan, dual quench cylinders, top cool chamber and heated quench tank. Brick lined with fiber roof. Rear handler system, 1998 vintage. Installed, complete and operational. Condition: Very Good. Availability: Immediate.

**Asking Price: \$150,000.00**



**ITEM # B439**

**SURFACE "SUPER 36" ALLCASE**

**Surface "Super 36" Allcase.** Surface Combustion "Allcase" batch IQ furnace with working dimensions of 36" X 48" X 30" high. Natural gas heating, 1 MBTU's/Hour. Maximum operating temperature of 1750F, voltage 460/3/60. External Dimensions: 10'W x 12'H x 15'L. Controls: All mounted in a panel attached to the furnace includes motor starters relays, pushbuttons, signal lights etc. Honeywell digital strip chart recorder for recording temperature, indicating controller and overtemp. Partlow controls for oil heating/cooling. Description: Surface Combustion Allcase Furnace with (6) "U" shaped radiant tubes mounted vertically 3 on each side wall. Fiber lined. Alloy roller rail hearth, alloy circulating fan, dual quench cylinders, top cool chamber and heated quench tank. Furnace has some missing components (temperature controls, pressure switches, ignition transformers, regulator) which will be replaced prior to shipment. Condition: Very Good.

**Please call for pricing.**



## ITEM # B438

### HOLCROFT BATCH IQ FURNACE LINE

**Holcroft Batch IQ Furnace Line.** Model GP2500. Serial Number S/N #CJ-4233. Installed new in 1980. Gas fired, working dimensions of 30" X 48" X 30" and a capacity of 2500 pounds. Furnace was operational until shut down on 11/30/17 when plant closed. Also included is a double ended charge car (Holcroft) to handle loads of 30" X 48", a Holcroft Spray/Dunk washer with heating system 30" X 48" X 30" and 2 load tables, 1 stationary and 1 scissor lift. Complete, in very good condition and ready to go.

**Asking \$125,000 USD for everything.**



## ITEM # B437

### IPSEN RECIRCULATING BOX FURNACE

**Ipsen Recirculating Box Furnace** 38" high x 43" wide x 48" deep. Gas fired, 1,000,000 BTU/hr with a max temperature: 1400 deg.F. Model Number: DL-3036. Serial Number: 60458. Updated controls, Honeywell indicating controller and overtemp. High temperature tempering furnace. Vertical lift air operated door with overhead air cylinder. Fiber board insulation. Alloy roller rail hearth. Direct fired furnace, but the heating chamber is separate from the work chamber and has a high velocity roof mounted circulating fan. Top mounted package burner. Complete combustion controls and safeties. 460/3/60 power. Test fired prior to shipment.

**Asking Price: \$39,500.00**



## ITEM # B436

### 36" X 60" PIT GAS NITRIDER

**36" x 60" pit gas nitrider** (Lindberg Homo Nitrider – electric) built in late '70's, c/w with Super Systems Gas Nitriding Control system built in 2012. System was operational up until decommissioning last year, when it was replaced with new equipment. Price includes fixtures shown in pictures.

**Asking Price \$50,000 USD.**



## ITEM # B426

### PLASMA NITRIDING UNIT 1000 KG CAPACITY

**Plasma Nitriding Unit.** Manufactured by Plateg this is a Plateg Puls Plasma Nitriding unit. Type; Hot Wall Plasma Nitriding Furnace (Tandem). Built in 1997, the programmer was replaced in 2017. Working dimensions of 1000 mm diameter X 1450 mm high. Load capacity 1000 kg. Installed power 95 kW, 400 V, 50 Hz, 160 A.

**Asking 98.000 Euro.** Located in Turkey.



## ITEM # B425

### BOX FURNACE 42" HIGH X 48" WIDE X 14' LONG

**Box Furnace 42" High X 48" Wide X 14' Long.** Manufactured by Lindberg. Working dimensions of 42" high x 48" wide x 14'-0" long. Electrically heated 480/3/60, 160 KW. Operating temperature of 2000F. Temperature Controls: Free standing enclosed panel with updated Honeywell controls, including circular chart recorder, SCR controls, back up contactors and step down transformers for the heating elements. Description & Features: Fiber lined. Heated by Nichrome ribbon heating elements on both side walls. Two zones of control. Air cylinder operated door. Includes motor driven load/unload system. 8000 pound capacity. Originally installed at Boeing. Condition: Good. Vendor will repair the back wall, replace all broken element hanger modules and provide and install serviceable heating elements.

**Asking \$85,000 USD.**



## ITEM # B415

### J.L. BECKER CAR BOTTOM

**J.L. Becker Car Bottom.** Working Dimensions are 96" wide x 180" Long x 66" High with a Maximum Temperature of 1,800 Deg. F. Natural Gas fired with 4.3 Million Btu's. Serial Number: J 2060. Double Ended Car Bottom with Air Operated Doors to accommodate Dual – Full Length Motorized Cars. Each Car is 108" wide x 200" long with Castable Refractory Floor Insulation – Sand Sealed. The Furnace is Fiber/Refractory Lined with 8 Tempest Burners (4) per side wall, firing opposite and opposed. The Exhaust Flues are floor level

mounted for excellent temperature uniformity. Temperature Controls : Free Standing Panel Honeywell Digital Controls and Honeywell Tru-line Circular Chart Recorder.

**Asking Price: \$95,000.00 USD.**



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### ITEM # B399

### CAR BOTTOM FURNACE

**Car Bottom Furnace.** Manufactured by Huber this is a gas fired car type furnace. Maximum operating temperature of 2000F. Working dimensions of 10' 4" wide X 12' 8" long X 8' high. Overall dimensions of 16' wide X 16" long X 14' high. Gas fired. Electricity requirements; 480 Volts, 3 Phase, 60 Hertz. Controls; Watlow digital controller, Honeywell digital overtemp and Honeywell digital recorder. Power driven car with (3) three sets of axles. Door is attached to furnace. Furnace is fibre lined and equipped with (4) four power flame model JD 130 package burners. Approximately 1,300,000 btu's each.

**Asking \$85,000 USD.**



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### ITEM # B398

### SAUDER BATCH IQ LINE

**Sauder Batch IQ Line.** Serial Number 881978-83. Electrically heated 480/3/60/150kW total load. Maximum operating temperature of 1850F. Working dimensions of 24" Wide X 24" high X 36" long. Controls; Mounted and wired in an enclosure attached to the right

hand side of the furnace includes a Marathon 10 Pro digital temperature controller, Marathon Carbpro digital carbon controller, Barber Colman analog high limit and a Honeywell digital strip chart recorder. Three power meters are face mounted to the same enclosure which monitor power in each zone of the furnace. A Halmar "SCR" power controller controls power to the heating elements. Two (2) Allen Bradley PLC controllers are mounted in the same enclosure. Standard In/Out Integral Quench Furnace w/Top Cool. This line consists of IQ furnace with top cool, heated quench tank, charge car, dunk & spray washer, temper furnace, SBS oil cooler, scissors table, atmosphere flow panel and several spare parts. Very good condition. Asking \$125,000 USD for the complete line. Shipping

Dimensions:

Temper Oven: 72"W x 11'H x 72"L

Washer: 80"W x 10'3"H x 120"L

Furnace: 109"W x 11'H x 96"L

Quench: 106" x 10'H x 72"

Top Cool: Skid - 5' x 5' x 6'H

Charge Car: 78"W x 60"H x 86"L

Misc. skids, flow panel, SBS, spare parts

**Asking \$125,000 USD for the complete line.**



**ITEM # B397**

## "LIFT-OFF" ATMOSPHERE BOX FURNACES (2 AVAILABLE)

**"Lift-Off" Atmosphere Box Furnaces (2 available).** Manufactured by Drever. Effective working dimensions of 10'6" Wide x 35' Long x 6' High. Gas fired-12,000,000 BTU/Hr. Max. Operating temperature of 1450F. Description; Ceramic Fiber Lined, Vertical Rising Atmosphere "Lift-Off" Furnace complete with (26) U-Shaped Radiant Tubes, North American Burner System, (4) Top-Mounted Alloy Circulating Fans, (4) Zones of Control, Stationary Hearth, "Knife-Edge" Atmosphere Seal, and Hydraulic Lifting Cylinders on each end of furnace. Furnace is capable of 100,000 lb. loads. Instrumentation; Free-Standing Control Panel with Honeywell PLC Digital Temperature Controller, and Honeywell Flame Safety System. Very good condition. Overall dimensions of 15'11" Wide x 41' Long x 13'6" High. Approximate weight 70,000 pounds. Units each can hold up to 100,000# loads and were used prior for tempering/normalizing wire rod and bar stock. Both of these have top mounted recirculating fans and are "atmosphere capable", good for FNC work.

**Asking \$325,000 USD each.**



**ITEM # B374**

## **ATMOSPHERE BOX FURNACE**

**Atmosphere Box Furnace.** Manufacturer: R&G Services, Inc. Inside Dimensions: 18" high x 32" wide x 36" deep. Heated: Electric, 230/3/60, 60 KW. Temperature: 2100 deg. F Model Number: EB-183236 Serial Number: 77021 Temperature Controls: Updated indicating controller and overtemp. Description & Features: Air operated vertical rising door. Slanted face plate. Brick lined with silicon carbide hearth. Heated by heavy Nichrome ribbon heating elements. Atmosphere inlet and burn-off. Flame curtain with controls and safeties. Condition: Very good. Furnace will be cleaned & painted, repaired as necessary, checked out & test fired prior to shipment.

**Asking Price: \$18,000.00 USD.**



**ITEM # B352**

## **PACIFIC SCIENTIFIC BOX FURNACE**

**Pacific Scientific Box Furnace.** Working dimensions of 72" wide X 120" long X 48" high, Gas fired radiant tube, maximum operating temperature of 2050F. Air operated vertical lift door, fiber lines, new refractory piers (12), hi-temp horizontal radiant tubes (6 above, 6 below), full safeties, side exhaust guard. Free standing control panel-rewired panel with Honeywell Tru-Trend circular chart and Honeywell digital controllers and overtemp. Atmosphere capable. Comes with spare radiant tubes. Very good condition.

**Asking \$70,000 USD.**



# CONTINUOUS FOR SALE

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## ***Quick Jump To Items:***

**Item # C337** BTU-TCA Series Belt Conveyor Furnace

**Item # C335** Compact Belt Furnace

**Item # C330** Mesh Belt Furnace Line

**Item # C329** CI Hayes Atmosphere Belt Furnace

**Item # C328** CI Hayes Atmosphere Belt Furnace

**Item # C327** Rogers Engineering Continuous Brazing Furnace

**Item # C324** C.I. Hayes Mesh Belt Furnace 12" Wide Belt

**Item # C323** Aichelin Cast Link Furnace Line 750 lbs/hr

**Item # C322** Surface Combustion Rotary Hearth Line

**Item # C321** Austempering System 500 lbs/hr

**Item # C319** CI Hayes High Temperature Pusher Furnace

**Item # C317** CI Hayes High Temperature Pusher Furnace

**Item # C314** Roller Hearth (Atmosphere) 4800 lbs/hr

**Item # C308** AFC Mesh Belt Furnace 54" Wide Belt

**Item # C301** Cast Link Belt Line 4000 lbs/hr

**Item # C283** Rotary Hearth Furnace System

**Item # C269** CI Hayes Mesh Belt Furnace 12" Wide Belt

**Item # C265** Sunbeam Pusher Carburizer 3000 lbs

## ITEM # C337

### BTU-TCA SERIES BELT CONVEYOR FURNACE

**BTU-TCA Series Belt Conveyor Furnace.** Manufactured by BTU this is a mesh belt furnace with a metallic muffle and a 120" heating chamber. 4" clearance above the belt. 18" wide belt, 10 Zones of control. Maximum operating temperature of 1100C. 24" long loading/unloading tables. OAL: 29.0 Ft. Microprocessor controls. 32.5 KW, 440/3/60. Overtemp. Protection. Water cooling sections. N2 curtains front and back with burn-offs. Protective atmosphere: DA with N2 purge. Very good condition.

**Asking \$80,000 USD or Best Offer.**



## ITEM # C335

### COMPACT BELT FURNACE

**Compact belt furnace** 321-7-90 6677 1000°C. Built by Solo of Switzerland this is a SOLO 321-7-90 model. This furnace was manufactured in 1990. Composition: Loading frame, heating part with frame, cooling part with frame, unloading frame, driving system, conveyor belt, NH3 cracker 3m3/h, distribution for treatment and cabinet gas, operator panel. Dedicated for annealing under cracked ammonia, brazing and hardening. Max. temperature of 1000 °C Heated length: 900 mm, cooled length: 1500 mm, channel section: 80 x 40 mm, Main voltage: 3 x 380 V – 50 Hz / TN, power input: 10,5 kW, gas generated: 75% H2 and 25% N2 (NH3), effective height with belt: 30 mm, conveyor belt width: 70 mm, external dimensions: L 5300 mm x l 800 mm x H 1250 mm. Perfect condition, 11 manuals included. Located in France.

**Price on request [jordan@themonty.com](mailto:jordan@themonty.com)**



## ITEM # C330

### MESH BELT FURNACE LINE

**Mesh Belt Furnace Line.** Lobo Hornos built this mesh belt furnace line with all the engineering coming from Sunbeam. The line consists of a loader, high heat furnace, quench tank, wash, temper, and post wash. It has Honeywell, Shinha, and Siemens controls that are approximately 12 years old. The furnace has a heated length of 6 meters and a tempering length of 11.09 meters. Both the high heat and tempering lines can handle 500 KG/Hour each. The high heat furnace has an opening of 7" high by 40" wide. The tempering line has an opening of 6" high and 47" wide. Max temperature is 930 C. This mesh belt line is capable of either controlled atmosphere or Nitrogen gas. The alloy (AISI I-330, AISI I-310) and brickwork (T23& ceramic fiber) are in good condition. The quench oil is Equimsa 770 and there is a washer included. The furnace is complete in good condition and currently installed in Mexico.

**Best offer.**



## ITEM # C329

### CI HAYES ATMOSPHERE BELT FURNACE

**CI Hayes Atmosphere Belt Furnace.** Model: BAC. 385 KW 460 VAC. 2 zones of control, ribbon elements and glow-bars.

**Asking Price \$15,000 USD**



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## ITEM # C328

### CI HAYES ATMOSPHERE BELT FURNACE

**CI Hayes Atmosphere Belt Furnace.** Model: LACMB 6" Belt. 306 KW 240 VAC. Ribbon elements. This furnace has been modified into a hump furnace with new controls and SCR. Bubbler, for wet hydrogen use.

**Asking Price \$15,000 USD**



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## ITEM # C327

### ROGERS ENGINEERING CONTINUOUS BRAZING FURNACE

**Rogers Engineering Continuous Brazing Furnace.** Manufactured in 2007 by Rogers Engineering this an electrically heated, continuous, controlled atmosphere brazing furnace. System consists of an entry chamber with a manual door, two electrically heated braze zones, an Air-jacketed atmosphere cooling chamber, manual door exit chamber and a Vac-U-Cool air cooling chamber. Parts are brought to a brazing temperature of 1112F (600C) then cooled in a controlled atmosphere to 482 F (250C). Each heating chamber is 7' 4" long. Maximum operating temperature of 1202F (650C). Like new condition.

**Asking \$250,000 USD.**



## ITEM # C324

### C.I. HAYES MESH BELT FURNACE

**C.I. Hayes Mesh Belt Furnace.** LAC Type. Work Zone: 12" Wide Belt, 12" High work area, 12' heat, 12' cool with 3 zones of temperature control. 1120C maximum temperature (2000F operating temperature). Power: 220V, 75KW, 212Amp, 60Hz , 3Ph. "Air Products" Gas Mixing Panel (N2, H2). Footprint: 9'W x 54'L (90'L Belt), 10'H + ductwork. Extra set of cooling muffles.

**Please call for pricing.**



## ITEM # C323

### AICHELIN CAST LINK FURNACE LINE

**Aichelin Cast Link Furnace Line.** The line consists of a loading table, cast link belt hardening furnace, oil quench, cross conveyor, post wash and two continuous tempering furnaces. High belt is 24" wide X 300" long with a capacity of 336 Kg/h. Nitrogen/Methanol atmosphere. Electrically heated 300 kW. Operating temperature of 1650F. Quench oil tank holds 7,000 litres. Air/oil quench oil cooler. Post wash has oil skimmer. Both tempering furnaces are electrically heated, 57 kW each. Belt widths 20" X 250" long. Maximum operating temperature of 575F. Installed in 2005 and currently used for automotive bearings. Complete installed and in operation until March 2017. Excellent condition.

**Best offer.**



## ITEM # C322

### SURFACE COMBUSTION ROTARY HEARTH FURNACE LINE

**Surface Combustion Rotary Hearth Furnace Line.** This system was designed for heat treating and straightening crankshafts and consists of a rotary hearth furnace, 2 Gleason straightening presses and a robot for loading/unloading. The furnace is S/N CC11590-1 with an outside diameter of 17' 3", inside 15', inside height of 2' 11" with an overall height of 8' 6". Built August 1979. Gas fired with 8 trident tubes. Atmosphere is Endo/Natural gas. Nominal tray size is 5" X 21", number of tray positions 60, tray loader/unloader length 10' 6". Hearth has ceramic tray support and guide tiles and embedded in 12" thick insulating firebrick. Sidewalls consist of 9" of insulating firebrick backed with 4 1/2" of insulating block. Alloy and brickwork are both excellent. System is complete, installed but not in operation.

**Asking \$50,000 USD.**



## ITEM # C321

### AUSTEMPERING SYSTEM

**Austempering System.** Ipsen Model SG500, S/N52822. Shaker hearth style hardening furnace is capable of 500 pounds/hour, 1850F operating temperature, gas fired 800,000 BTU's/hour with an 18" wide tray. Temper has an operating temperature of 800F and a heat input of 300,000 BTU's. Controls on both are Honeywell UDC units. Entire system consists of a magnetic conveyor loading system, Ipsen shaker-feeder-hopper. Mitsubishi variable speed AC drive on salt conveyors, 900 gallon wash tank with 30" conveyor and

280 gallon rust inhibitor tank with 32" conveyor. Currently installed but not in production. System is in reasonable condition but has not been used for some time.

**Asking \$20,000 USD or best offer.**



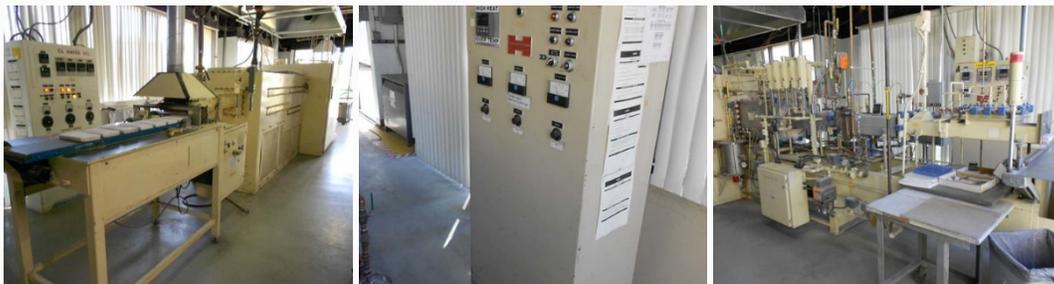
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### ITEM # C319

## CI HAYES HIGH TEMPERATURE PUSHER FURNACE

**CI Hayes High Temperature Pusher Furnace.** C.I. Hayes model MY-040848-94PH high temperature pusher furnace. 4" opening above the hearth, 8" tray width. Max. Temp: pre-heat 1100 C, High Heat 1700 C. 94" long preheat, 1 control instrument/1 zone, 15 KW@440/3/60, metallic heating elements. 48" high heat, 1 instrument, 3 control zones, 45 KW@440/3/60, molybdenum heating elements. 48" metallic front tunnel with nitrogen curtains and burn off. 3 cooling sections. each 36" long, 1 section is insulated and all are water jacketed. Rear tunnel with nitrogen curtains and burn off. Multiple atmosphere inlets, for hydrogen/dissociated ammonia with nitrogen purging. Pusher screw drive. Atmosphere bubbler. High heat chamber recently rebuilt. Overall Dimensions; 6'H x 4'-6"W x 39'L (Approx.)

**Asking \$100,000 USD.**



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### ITEM # C317

## CI HAYES HIGH TEMPERATURE PUSHER FURNACE

**CI Hayes High Temperature Pusher Furnace.** Model MY-040848-94PH. 4" opening above furnace hearth. 8" tray width. Maximum temperature of the pre-heat is 1100C, maximum

temperature of the high heat is 1700C. 94" preheat, 1 control instrument/1 zone, 30KW@440/3/60, metallic heating elements. 48" high heat, 3 instruments, 3 control zone, 45KW @ 440/3/60, moly heating elements. 48" metallic front tunnel with nitrogen curtains and burn off. 3 cooling sections each 36" long, 1 section is insulated and all are water jacketed. Rear tunnel with nitrogen curtains and burn off. Multiple atmosphere inlets for hydrogen/dissociated ammonia with nitrogen purging. Pusher screw drive. Atmosphere bubbler. Return conveyor system. High heat chamber recently rebuilt. Overall dimensions 6' high X 7.5' wide X 39' long (approximate). Excellent condition. Furnace was used for co-firing, can be converted for sintering with preheat muffle.

**Asking \$110,000 USD.**



**ITEM # C314**

## **ROLLER HEARTH FURNACE (ATMOSPHERE)**

**Roller Hearth Furnace (Atmosphere).** Manufactured by Wellman in 1982. Model #AL-81-180 RH, S/N 180. Working dimensions of 60" Wide x 42' Long x 14" High – 4800#/HR. Electric – 480/3/60 – 469 KW (over (4) Zones of Control). Operating temperature of 1650° F. Brick Lined Atmosphere Capable Roller Hearth Furnace complete with (4) Zones of Control, Heating Elements above and below Rolls, Transformers, 25' Slow Cool Chamber (Air Cooled with Fans), and Variable Speed Drive. Free Standing Control Panels with Watlow Digital Controllers ((1) Per Zone), Watlow High Limits, and SCR Power Controls. Overall dimensions; Entrance Chamber: 12'Wide x 14' Long x 10' 6" High. High Heat Chamber: 10' 6" Wide x 30' Long x 10' 6" High. Cooling Zone: 12' Wide x 27' Long x 10' 6" High. Approximate weight 80,000 pounds. Very good condition.

**Asking \$225,000 USD.**



## ITEM # C308

### AFC MESH BELT HARDENING FURNACE

**AFC Mesh Belt Hardening Furnace.** Manufactured by Atmosphere Furnace Company this furnace has working dimensions of 6" high x 54" wide x 12' long (heated section). Gas fired with radiant tubes. Operating temperature of 1800F. S/N 6948. Temperature Controls: Free standing enclosed panel. Honeywell solid state digital readout indicating controllers, L&N overtemps. L&N strip chart temperature & carbon recorder. Marathon Monitors Carb-Pro carbon control. Description & Features: Fiber lined. Heated by (9) North American 4724-2-E burners firing into recuperated U-tubes. Two zones of control. Rear zone has a roof mounted recirculating fan. Cold belt return. Furnace has a flame curtain and complete combustion controls and safeties. Includes quench tank and conveyer.

**Asking \$75,000 USD.**



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## ITEM # C301

### CAST LINK BELT QUENCH AND TEMPER LINE

**Cast Link Belt Quench and Temper Line.** Manufactured by Rogers Engineering 4,000 pounds/hour cast link belt furnace line consisting of a 1750F high heat furnace and 1700F temper furnace. Serial # CC-3977-0 (1997). High Heat Furnace: 48"W Omega Cast Link Belt, 4" pitch, 3" sides. Furnace has a 30'L heating section. Four (4) zones of control with three (3) roof mounted in the last three (3) zones. Maximum operating temperature of the hardening furnace is 1750°F. Furnace is radiant tube heated with recuperators. Furnace is currently set up for Endothermic w/Enriching Natural Gas & Air. Total BTU's for hardening furnace is 3,180,000 BTU/HR. Controls; All mounted in a free standing panel includes Allen Bradley PLC w/HMI Touchscreen, Honeywell UDC Digital Temperature Controls, SSi Carbon Controls. Voltage 480/3/60/200kW.

Tempering/Anneal Furnace: 60"W mesh belt with support rollers. Furnace has a 35'L heating section. Four (4) zones of control with four (4) roof mounted fans. Maximum operating temperature is 1700°F. Total BTU's for the tempering/annealing furnace 3,790,000 BTU/HR. Please note that this furnace has two (2) different modes of operation. Click on 'PDF' below for more information on the different modes of operation.

The sequence of this furnace is as follows:

- Load parts into pre-wash dump loader
- Pre-Wash, 190°F, Gas Heat
- Parts vibrate onto mesh (soft load) then onto cast link belt.
- High heat cycle
- Quench cycle, 200°F, Gas Heat, 8000 Gallon
- Wash cycle, 190°F, Gas Heat
- Temper cycle
- Oil blackening cycle

Includes:

- 5600 CFH Air Cooled Endothermic Gas Generator
- SBS Air to Oil Heat Exchanger which consists of three (3) 5 H.P. fans.- Manuals & Drawings

Very good condition, available immediately.

**Asking \$650,000 USD.**



**ITEM # C283**

## **DENTON THERMAL SYSTEMS (O'BRIEN & GERE) 2150°F ROTARY HEARTH FURNACE SYSTEM**

### **Denton Thermal Systems (O'Brien & Gere) 2150°F Rotary Hearth Furnace**

**System.** Includes high temperature furnace, Nitrogen-Methanol Panel and Quench Press. Working Zone: 6 ft Diameter Hearth, Door Opening is 14"W x 13"H Overall Size: 9ft-8in Diameter x 10ft-10"Tall. Heating: Electric, 125 kW, 1 Zone, Globar Heating Elements. Power Requirement: 200 Amps, 480V/3Ph/60Hz. Temperature Rating: 2150°F. Water Requirement: 3 GPM. Air Requirement: 100 PSI. Controls: GE90 PLC. Honeywell Temperature Controller and Overtemp (missing but will be replaced). Marathon Monitors Carbon Control System. Includes Quench Press that was handling up to 5" Diameter bearings. Prior user reference available upon request.

**Asking price: \$29,000 USD.**



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## ITEM # C269

### CI HAYES MESH BELT FURNACE

**CI Hayes Mesh Belt Furnace.** Working dimensions of 5" over belt, 12" wide X 120" of heated length. Electrically heated 230/3/60, operating temperature of 2100F. Model LAC. Temperature controls are new state of the art, control panel with Honeywell solid state digital readout controller and overtemp for each of three zones, includes volt and amp meters. Full alloy muffle in hot zone. 20' long sealed water jacketed cooling. Globar heating elements over and under the belt. (3) zones of control. (4) argon flowmeters. Dayton AC inverter provides adjustable belt speed. Updated SCR controls. Muffle and belt are new. Very good condition.

**Asking \$39,000 USD.**



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## ITEM # C265

### SUNBEAM PUSHER CARBURIZER

**Sunbeam Pusher Carburizer.** This is a very unusual style of furnace and perfect for carburizing of large gears, bearings or races. Working dimensions of 50" X 50" X 34" high. Operating temperature of 1750F. 3,000 pound capacity. Gas fired 12 Honeywell composite single ended recuperated tubes (recently replaced). Surface Casemate controls. 1800 gallon quench tank. System does not need a pit. Comes with a spray washer, temper and an oversized IHRE air cooled quench oil cooler. System is installed but not currently in use. Very good condition.

**Asking \$40,000 USD.**



# DRAW/TEMPER FOR SALE

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## ***Quick Jump To Items:***

**Item # T351** Mesh Belt Temper Furnace

**Item # T350** Sunbeam Mesh Belt Temper

**Item # T349** Recirculating Box Type Draw Furnace

**Item # T343** Batch Temper 36"W X 36"H X 96"L

**Item # T342** Recirculating Walk In Oven 72" X 48" X 120"

**Item # T341** Temper Furnace

**Item # T340** Safed/Borel Annealing Furnace

**Item # T339** Box Tempering Oven

**Item # T336** Mesh Belt Temper Furnace 48" Wide

**Item # T335** Batch Oven 37"H X 37"W X 25"D

**Item # T325** 3-Station Despatch Temper Furnace

**Item # T320** Pifco Conveyor Oven

**Item # T318** Temper 48" W X 48" D X 36" H

**Item # T303** Pifco Temper Furnace

**Item # T290** Tempering Ovens 36" X 48" X 36" (2 available)

**Item # T286** Tempering Ovens 36" X 48" X 36" (2 available)

## ITEM # T351

### MESH BELT TEMPER FURNACE AVAILABLE

**Mesh Belt Temper Furnace Available.** Manufactured by Electric Furnace Company in the early 1980's. Gas fired with one burner, recirculating fan. Operating temperature of 1200F. 48" wide belt, rated for 3,000 pounds per hour. 480V. 24' heated length. Currenty installed and in operation. Good overall condition.

**Asking \$20,000 USD.**



## ITEM # T350

### SUNBEAM MESH BELT TEMPER

**Sunbeam Mesh Belt Temper.** Manufacturer: Sunbeam. Inside Dimensions: 8" x 36" wide belt x 14' heating. Heated: Gas Fired, (4) North American nozzle mix burners. Temperature: 1250 deg.F. Model Number: F-246-67. Serial Number: 35214. Temperature Controls: Free standing enclosed panel. Solid state digital readout indicating controller & overtemp. Description & Features: Brick lined. Tight weave mesh belt. Four side mounted burners fire above the work zone. Two 1300 deg. Garden City top mounted recirculating fans. Complete combustion controls and safeties. Condition: Very Good, needs minor brick repairs

**Asking Price: \$35,000.00**



## ITEM # T349

### RECIRCULATING BOX TYPE DRAW FURNACE

**Recirculating Box Type Draw Furnace.** Manufacturer: Eclipse. Inside Dimensions: 30"high x 42"wide x 96"deep. Heated: Gas fired. Temperature: 1250 deg.F. Model Number: Box Draw. Serial Number: 3424-00773. Temperature Controls: Updated controls, Honeywell indicating controller and overtemp, circular chart recorder. Description & Features: Vertical lift air operated door. Brick lined. Alloy roller rail hearth. Seven adjustable roof baffles. Rear combustion chamber with atmospheric burner and high velocity recirculating fan. Complete combustion controls and safeties. Includes manual load table. Condition: Very Good, Operational.

**Asking Price: \$39,500.00**



## ITEM # T343

### BATCH TEMPER 36"W X 36"H X 96"L

**Batch Temper 36"W X 36"H X 96"L.** Manufactured by Wisconsin Oven, Model SDB-6616-10G, S/N 033899307. Natural gas fired, 1 MBTU's/hour. Maximum temperature rating 1000F. Voltage 480/3/60/16 amps. External dimensions of 96" wide X 13' 4" high assembled (10'6"H shipping) x 11'L. Controls; Mounted and wired in an enclosure with fused disconnect attached to the side of the furnace. Temperature controls consist of a digital Barber Colman 560 digital for temperature and a Barber Colman digital "Limitrol" 75L high limit. ATC process timer to control heating cycle. Allen Bradley switches for control power, circulation fan, ignition and gas valve reset. Signal lights for control power, air flow, high/low gas pressure, purge, etc. Eclipse package burner with Honeywell flame safety, UV scanner and spark ignition.

General Description; Recirculating gas fired batch temper with air operated vertical lift doors on each end. Eclipse package burner with roof mounted recirculating fan distributes heated air in a combination air flow pattern. Roller rail hearth with chain guide. Furnace includes two (2) scissor lift tables. Manual and drawings are included with this furnace. Very good condition.

**Asking \$49,900.00 USD.**



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**ITEM # T342**

**RECIRCULATING WALK IN OVEN 72" X 48" X 120"**

**Recirculating Walk In Oven.** Manufactured by Precision Quincy. Working dimensions of 72" high x 48" wide x 120" deep. Gas heated, 300,000 BTU's per hour. Operating temperature of 450F. Model EC-410, S/N 25766. Temperature Controls: Partlow indicating controller and overtemp. Side mounted control cabinet. Double swing open doors, horizontal air flow. Powered exhaust blower, rear mounted combustion and fan chamber. Atmospheric type burner system. Complete combustion controls and safeties. Air flow switch. Oven will be checked out and test fired prior to shipment. Approximate shipping weight 4,310 lbs.

**Asking \$16,500 USD.**



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**ITEM # T341**

**TEMPER FURNACE**

**Temper Furnace 36" X 48" X 36".** Made by McLaughlin Services. Working dimensions of 36" X 48" X 36", 5,000 pound capacity. Gas fired 750 cfh @ 2-5 PSI, 750,000 BTUH. Operating temperature 250F to 1400F, +-10F. Electricity; 40 Amps, 480V/3Ph. Compressed Air; 100 psi, Intermittent. Temperature Controls; Super Systems 9130 Temperature Controller with 12" Touchscreen, Super System 7SL 1/16 DIN Limit Controller. Logic Controls; Allen Bradley Micrologix PLC is included for alarming and sequencing.

**Asking \$91,000 USD.**



### ITEM # T340

## SAFED/BOREL ANNEALING FURNACE

**Safed/Borel Annealing Furnace** built in 1991. The working dimensions consist of: Diameter 400 mm, Height 500 mm. External Dimensions: 1800 mm x 1767 mm x 2412 mm. Maximum Temperature: 650 C with a maximum load capacity of 100 kg (not including baskets). Main voltage is 3 x 400V / 50 Hz, Control voltage is 230V / 24V. This setup includes a Eurotherm programmer, threshold controller, recorder, programmable clock, timing relay, control for water flow, vacuum pump, pressure reducer, and fire engine. Located in France.

**Price on request.**



### ITEM # T339

## BOX TEMPERING OVEN

**Box Tempering Oven.** Manufactured by Eisenmann in 2002. Model HN-FNC-006. Working dimensions of 108" Wide x 96" Deep x 64" High. Natural Gas (3,200,000 BTU/HR). Operating temperature of 1200F. Stainless Steel Lined Recirculating Box Tempering Oven complete with Top-Mounted Alloy Recirculating Fan (20 HP – 13,000 CFM), Rear-Mounted Heater Box with Eclipse Burner System, Alloy Skid Hearth, Forced Cool Down Fan System (7,333 CFM), Vertical Rising Motor Driven Front Door, and Stationary Loading Table. Free Standing Control Panel with Eurotherm Digital Set Point Programmable Temperature

Controller, High Limit, Chessel Strip Chart Recorder, and Honeywell Flame Safety System. Overall dimensions of 13'2" Wide x 23' Long x 17'8" High (includes Door Structure). Approximate weight of 32,000 pounds. Excellent condition.

**Asking price is \$72,500 USD.**



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### ITEM # T336

## MESH BELT TEMPER FURNACE 48" WIDE

**Mesh Belt Temper Furnace 48" Wide.** Continuous belt temper furnace manufactured by Industrial Heating Equipment, Model # TF-5. Inside dimensions 10" over belt, 48" wide X 12' heating. Gas fired, Eclipse package burner. Maximum operating temperature 1000 F. Temperature Controls: Free standing enclosed panel. Solid state digital readout indicating controller & overtemp. Top mounted brick lined combustion chamber houses high velocity stainless steel circulating fan. Steel lined work chamber has 8-1/2" insulation. Stainless steel mesh belt on top of edge wire belt. Very good condition.

**Asking \$29,500 USD.**



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### ITEM # T335

## BATCH OVEN 37"H X 37"W X 25"D

**Batch Oven 37"H X 37"W X 25"D.** Batch type recirculating oven manufactured by Despatch, Model V-29-STD. Inside dimensions of 37" high X 37" wide X 25" deep.

Electrically heated 480/3/60, 12 KW. Serial number 126552. Temperature Controls: Partlow indicating controller and Honeywell overtemp, timer. Double swing open doors. Side mounted recirculating fan. Adjustable horizontal air flow. Provisions for 12 shelves, 4 shelves included. Powered exhaust blower. Oven has been checked out and test fired and is ready for immediate shipment. Excellent condition.

**Asking \$8,000.00 USD.**



**ITEM # T325**

### **STATION DESPATCH TEMPER FURNACE**

**3-Station Despatch Temper Furnace.** Manufactured in 1980 by Despatch Industries, Inc. 3 Independently loaded and operated furnace stations with shared panel. Tops elevate off bases for loading and unloading. Work Zone: 22"W x 40"L x 25"H Each. Hearth Height: Estimated at 36-40" (Can measure for you). Max. Temperature: 850°F with a Uniformity of +/- 25°F (Center area of 12"W x 20"L x 10"H meets +/-10°F). Electrically heated with a power of 490V/3Ph/60Hz. 3 West 4400 Temperature Contrl. & West 6700 Hi-Limit. (We can quote upgrade to new Super Systems, Inc. controls, if desired.). Just rebuilt. New heating elements, new hearth ceramics, New stainless steel side panels, new paint.

**Asking Price: \$39,500 USD, Offers considered.**



**ITEM # T320**

### **PIFCO CONVEYOR OVEN**

**Pifco Conveyor Oven.** Electrically heated 2 zone conveyor oven 480/3/60/144 kW. Maximum operating temperature of 600F. Work area; 72"W x 12"H x 25'L heated length. External dimensions 9'W x 10'H x 40'L – approx.. Controls; Mounted and wired in a free standing panel includes an Allen Bradley PLC with PanelView Plus 1000 touchscreen interface. Power to the heating elements are controlled through two (2) Allen Bradley "SCR" power controllers, one (1) for each zone. An Allen Bradley PowerFlex "VFD" controls oven conveyor belt speed. Standard two (2) zone electrically heated conveyor oven with a wire on edge belt. This oven has a 10'L load end and 8'L unload end with cooling. Access doors with "Brixon" door latches on both sides of oven and one in each heating chamber. Very good condition.

**Asking Price: \$59,000 USD.**



**ITEM # T318**

**TEMPER 48" W X 48" D X 36" H**

**Large Box Tempering Ovens (4 available).** Built by Eisenmann in 2002, Model # HN-FNC-002. Working dimensions of 108" Wide x 96" Deep x 64" High. Natural gas fired, 3.2 million BTU's per hour. Operating temperature of 1200F.

Description; Stainless Steel Lined Recirculating Box Tempering Oven complete with Top-Mounted Alloy Recirculating Fan (20 HP – 13,000 CFM), Rear-Mounted Heater Box with Eclipse Burner System, Alloy Skid Hearth, Forced Cool Down Fan System (7,333 CFM), Vertical Rising Motor Driven Front Door, and Stationary Loading Table.

Instrumentation; Free Standing Control Panel with Eurotherm Digital Set Point Programmable Temperature Controller, High Limit, Chessel Strip Chart Recorder, and Honeywell Flame Safety System.

OVERALL DIMENSIONS: Oven: 13' Wide x 20' Long x 17'8" High (includes Door Structure. (Shipping Dimensions: 12'6" Wide x 20' Long x 10'8" High). Loader: 9'6" Wide x 12" Long x 4' High. Approximate weight 20,000 pounds. Excellent condition, operational.

**Asking Price: \$72,500 USD each.**



## ITEM # T303

### PIFCO TEMPER FURNACE

**Pifco Temper Furnace.** S/N 8177 built in 1988. Working dimensions of 126" long x 60" wide x 40" high. Overall dimensions of 13' x 11' x 11' high. Comes with load and unload discharge tables and combustion fan. Maximum operating temperature 950 deg. F. Rated for 250 pound net weight x 37.4in long tray loaded every 15 minutes. Furnace holds three (3) trays. Approximate nineteen (19) minutes to operating temperature. Forty-five minutes in furnace @ 15 minute load cycle. Heated by one gas burner approximate rating 600,000 BTU/hour. Utilities required: 1000 BTU natural gas @ 5PSI, 480v 3Ph 60Hz. Water 80 deg. F maximum @ 20PSI. Compressed air 60PSIG minimum. Adequate drain for water. Good condition.

**Asking Price: \$38,000 USD.**



## ITEM # T290

### TEMPERING OVENS 36" X 48" X 36" (2 AVAILABLE)

**Tempering Ovens 36" X 48" X 36" (2 available).** Working dimensions of 36"W x 48"D x 36"H. Shells have just been completed and buyer has the option of Gas-Fired or Electric, Hearth Height, Burner Locations (Left or Right) and Panel Location. These can be completed, fully tested and ready to ship to your facility in 8-9 weeks at a very attractive price.

**Please call for pricing.**



**ITEM # T286**

## **LINDBERG BOX TEMPER**

**Lindberg Box Temper.** Model 11-7212048-G14, S/N 24947. Working dimensions of 72" wide X 120" long X 48" high. Gas fired with a maximum operating temperature of 1200F. Vertical lift-air operated door, brick lined, 5 course refractory hearth, alloy roof baffles, alloy side wall ducts, dual zone burners-roof mounted combustion chambers with dual belt driven fans. Free standing prewired control panel. Good condition.

**Asking Price: \$65,000 USD**



# GENERATORS FOR SALE

See something you need, click on the link or scroll through all the items for sale. Searching for something we don't have listed, let us know.

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## **Quick Jump To Items:**

**Item # G201** Ammonia Dissociator 250 SCFH

**Item # G198** Endothermic Generator 3000 CFH

**Item # G197** Ammonia Dissociator 1000 CFH

**Item # G196** Surface Combustion 5000 CFH Endo Generator

**Item # G189** Surface Combustion 2400 CFH Endo Generator

**Item # G178** Ammonia Dissociators 3000 CFH

**Item # G176** Surface "Multi-Bottle" Endo Generators

**Item # G173** Lindberg Endo Generator 4500 CFH

**Item # G169** Gasbarre Endo Generator 3000 CFH

## ITEM # G201

### AMMONIA DISSOCIATOR 250 SCFH

**Ammonia Dissociator 250 SCFH.** Manufactured by CI Hayes. Model ADC 250. Included is a CI Hayes Molecular Sieve Dryer Model: MSA 11 Molecular – Dryer. Good operating condition.

**Best Offer**



## ITEM # G198

### 3,000 CFH ENDOTHERMIC GENERATOR

**3,000 CFH Endothermic Generator.** Manufactured by Sunbeam, model # ENG-30, S/N F-377-79. Gas fired, operating temperature of 1900F. Temperature Controls: Upgraded controls. Honeywell digital indicating controller and overtemp. Single alloy retort. Selas compressor. Waukee flowmeters. Air cooled. Package burner. Complete combustion controls and safeties. Good condition.

**Asking \$22,500.00 USD.**



## ITEM # G197

### AMMONIA DISSOCIATOR

**Ammonia Dissociator.** Manufactured by Lindberg. 1,000 CFH. Model Number: 16-1000-HYAM. Serial number 26004. Electrically heated, 460/3/60, 30 KW, 37.6 amps. Operating Temperature: 2000 deg.F. Temperature Controls: Honeywell indicating controller and overtemp. Standard Lindberg design with vertical sealed catalyst chamber. Ceramic fiber insulation. Nichrome heating elements. Air cooled heat exchanger. Includes pressure gauges, SSOV, Waukee DA flowmeter. Includes operating manual and drawings. Very good condition. Unit is complete and guaranteed operational.

**Asking Price \$11,500.00 USD.**

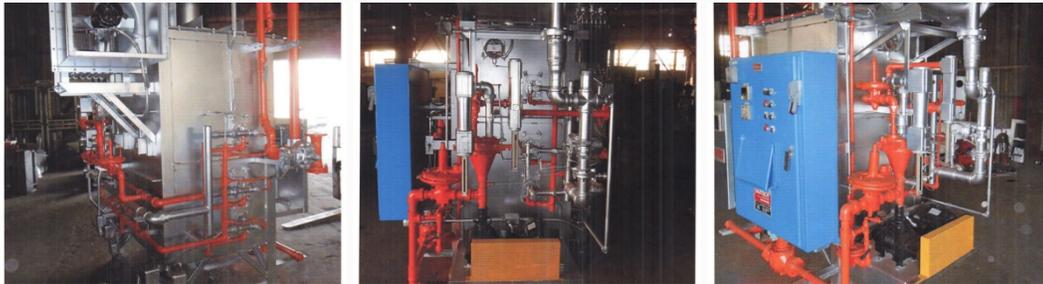


## ITEM # G196

### SURFACE COMBUSTION 5000 CFH ENDO GENERATOR

**Surface Combustion 5000 CFH Endo Generator.** Serial number AC 42332-1A. Maximum temperature 1950F. Barber-Coleman controls with digital recorder and over temp. Air cooled. Shipping dimensions of 8'5" W X 10'1" high X 8'11" long. Very good condition. Included is a new pump.

**Asking \$31,500.00 USD.**



## ITEM # G189

### SURFACE COMBUSTION 2400 CFH ENDO GENERATOR

**Surface Combustion 2400 CFH Endo Generator.** Two retort "multi-bottle" configuration allowing one retort to operate while the other is shut down for maintenance. New in 1995. S/N AC-43349-1. 2400 CFH capacity. Casemate controls, air cooling. Good condition. Currently installed and in operation but will be available shortly.

**Asking \$59,000 USD.**



## ITEM # G178

### AMMONIA DISSOCIATORS (4 AVAILABLE)

**Ammonia Dissociators (4 available).** Built by Sargeant & Wilbur, 4 electrically heated Ammonia Dissociators. Model GAD3000E. 3,000 CFH capacity. Maximum temperature 1759F. Voltage 480/3/60/60 kW. External dimensions of 5'W x 6'H x

8'L. **Controls:** Mounted and wired in a free standing panel includes the following:

- Yokogawa UT 350 digital control for dissociator undertemp.
- Yokogawa UT 350 digital control for dissociator overtemp.
- Yokogawa UT 350 digital control for dissociator temperature control.
- Two(2)Yokogawa UT 350 digital controls for vaporizer lower/upper zone.
- Yokogawa UT 350 digital control for vaporizer overtemp.
- All necessary signal lights, timers etc.

Mounted in the same control cabinet are three (3) SCR's. Two (2) "Halmar Robicon" and one (1). "Ametek". One is for dissociator heating elements and the other two are for vaporizer lower/upper zone heaters.

**Description:** Electrically heated Ammonia Dissociator suitable for supplying up to 3000 CFH of atmosphere with a composition of 75% Hydrogen and 25% Nitrogen. This atmosphere is obtained by cracking anhydrous ammonia vapor in a catalyst filled vessel maintained at a temperature of 1700°F to 1850°F. Incoming ammonia pressure is reduced before retort entry. At the outlet of the retort the hot dissociated ammonia passes through a dry cooler where the gas is cooled to near room temperature. It then passes through a flowmeter and on to the consuming device. This dissociator includes a Sargeant & Wilbur Ammonia vaporizer. This dissociator is provided with two (2)catalyst filled heat resisting alloy retorts. The retorts are mounted within the insulated dissociator heating chamber. The heating chamber consists of heavy Mullite T-Slot tiles. Retorts are heated with Sinuous-wound Nichrome Ribbon Heating elements which are mounted in the tile slots. The element tails and studs extend through the rear wall of the dissociator. Elements can be removed through the rear wall without having to unpack furnace insulation etc. A step-down transformer (480V to 240V 112.5 KVA) is included. Manuals and drawings are also included. Very good condition.

**Asking \$29,500.00 USD each.**



**ITEM # G176**

## **SURFACE "MULTI-BOTTLE" ENDO GENERATORS**

**Surface "Multi-Bottle" Endo Generators.** Manufactured by Surface Combustion. Natural gas heated 675 CFH/HR. Model # RX 35-75-3V. Maximum temperature 1950F. 7500 CFH

capacity. Controls are complete, water cooled. SSi atmosphere controls and Atmosphere Engineering "Endo Injector". Very good condition, ready to go.

**Asking \$75,000 USD.**



**ITEM # G173**

## **LINDBERG ENDO GENERATOR**

**Lindberg Endo Generator.** 4500 CFH, gas fired. Retorts and brickwork are in excellent condition however it requires temperature controls and an air cooler (vender has partially completed changing from water cooling to air).

**Asking \$17,500.00 USD.**



**ITEM # G169**

## **GASBARRE/SINTERITE FURNACE DIVISION ENDO GENERATOR**

**Gasbarre/Sinterite Furnace Division Endo Generator.** 3000 CFH, electrically heated 460/3/60/63 Amps/50kW. New in 2006. External dimensions of 106" wide x 75" deep x 116" high. Controls are enclosed in a panel attached to the side of the generator. Honeywell UDC 3200 digital temperature controller and Honeywell UDC 2500 digital high limit safety. Control switches with indicating lights are flush mounted in the enclosure. Flange mounted fused disconnect switch for control power. Separate non fused disconnect for the main power. Waukee flow meters are manifold mounted for incoming and outgoing gases. Flow

meters include: Natural Gas 0-1000 CFH, Air 0- 2500 CFH, (3) Mixed Gas 0-1500 CFH and Endo 0- 3500 CFH. Step down transformer for reduced voltage to the heating elements. Electrically heated 3 retort generator. Refractory lined shell with vertically mounted retorts. Total of twelve (12) silicon carbide heating elements, 6 on each side are mounted through the chamber for good uniform heating of the alloy retorts. The natural gas and air pass through a Waukee "mixor" valve then into the Waukee gas pump. Mixed gas enters the 3 "mixed gas" flow meters, through the Selas fire checks and enters the top of the retorts. The gas travels through the catalyst filled heated retorts and exits at the bottom. The exiting Endothermic gas passes through water cooled chambers then finned cooled air heat exchangers then through the Endothermic flow meter. A pressure regulator is supplied on the exiting gas piping. Good condition.

**Asking \$29,500.00 USD.**



# INDUCTION FOR SALE

See something you need, click on the link or scroll through all the items for sale. Searching for something we don't have listed, let us know.

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## **Quick Jump To Items:**

**Item # I177** 2 Station 24" Single Spindle Scanners

**Item # I176** Radyne Scanner and Power Supply

**Item # I175** Inductoheat /Lepel Induction Power Supply

**Item # I174** Ajax/Tocco Induction Heating Power Supply & Heat Station

**Item # I164** Ajax Tocco Induction Power Supply Unused

**Item # I160** Ajax Tocco Power Supply Unused

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## ITEM # I177

### 2 STATION 24" SINGLE SPINDLE SCANNERS

This is an integrated **Ajax 2 Station** (single spindle per station) 150 kW, 10 kHz Scanner System. It has a single SCR type power supply with a transfer switch to send power to station A or B. It has a single shared Quench Recirculating System with bag filter, single shared Water Recirculating System. Each station has a PLC Control and servo control. PLC is A/B SLC 5/03, Pacific Scientific Servos, and Nematron MMI. Also has Quick Change Coild Adapters (would cost about 4-5k today). This was built in 1998 but appears to have been well maintained and contains currently serviceable components.

**Asking Price: \$99,500 USD**



## ITEM # I176

### RADYNE SCANNER AND POWER SUPPLY

**Radyne Scanner and Power Supply.** Built by Radyne this is a Model 125TC10 unit, Serial Number 93118. 125 kw, 7-11 khz. Scanner has a travel length of 48". Heat Station is a model #14226.

**Asking \$9,900.00 USD**



## ITEM # I175

### INDUCTOHEAT /LEPEL INDUCTION POWER SUPPLY

**Inductoheat /Lepel Induction Power Supply.** This is a Lepel/ Inductoheat SP5-40 kW, 3/10 kHz SCR type induction heating power supply with a separate Heat Station (I believe this could be operated at 3 kHz but the heat station is currently arranged for 10 kHz). This is an "HS-3" Heat Station with 3 capacitors and a Jackson Transformer with ratios of 5-3 to 17-3. The Inductoheat SP5 has been a proven reliable power supply for heating and heat treating for many years. It can be used for short heat times as it has fast and consistent ramp up to set power. There is no warranty but it is sold with the assurance it is in good working order. It has recently been connected and tested in our facility. I can supply a video of the unit in operation. Start up and Training service is available at extra cost by an experienced induction heating service engineer. Excellent condition.

**Asking \$19,500.00 USD**



## ITEM # I174

### AJAX/TOCCO INDUCTION HEATING POWER SUPPLY & HEAT STATION

**Ajax/Tocco Induction Heating Power Supply & Heat Station.** Manufactured by Ajax/Tocco in August 2005. 480V three phase input is rated to be 1.2MW (1200KW). 660V three phase input is rated to be 2.2MW (2200KW). Unit requires three phase input of 480V, 2500A. System is deigned to work at 2.5 kHz in frequency. Requires 65 GPM of cooling. Buyer must have a dedicated transformer at the three phase input for this machine. Buyer must provide their own coils, bus, and water-cooled cables to attach power supply to heat station and heat station to coils. Limited warranty available. Note: Currently set up to work at 480V input voltage. In order to switch to 660V, buyer needs to change the input breaker. Excellent condition.

**Asking \$129,000 USD.**

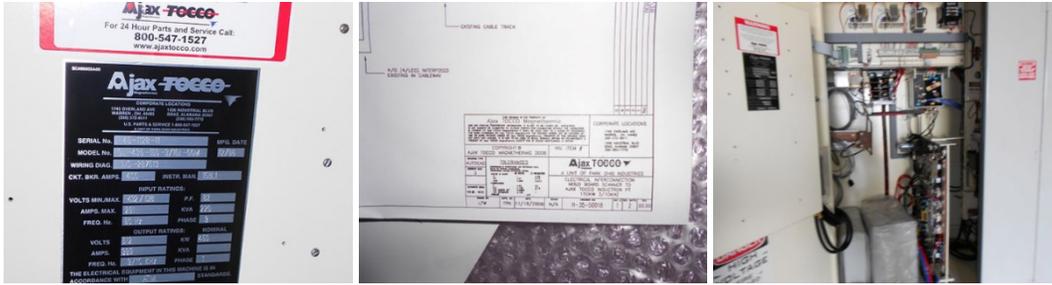


## ITEM # I164

### AJAX TOCCO INDUCTION POWER SUPPLY

**Ajax Tocco Induction Power Supply.** Model #OL-426-150-3/10-00M. Manufactured 12/06. Serial Number: 46-1128-11. Wiring Diag.: WD-287513. CKT.BKR. AMPS. : 400. Input Ratings: Volts Min./Max. : 432/528 P.F. : 82 Amps.Max. : 291 KVA : 220 Freq.Hz. : 60Hz Phase : 3 Output Ratings: Volts : 512 KW : 150 Amps. : 389 Freq.Hz. : 3/10 KHz Phase : 1 This unit was sold new to Caterpillar in 2006 and never installed and never used. Excellent condition.

**Asking \$33,000 USD.**

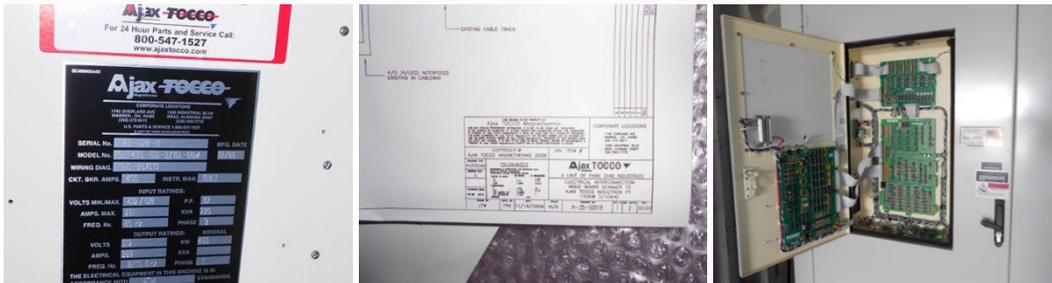


ITEM # I160

## AJAX TOCCO POWER SUPPLY (UN-USED)

**Ajax Tocco Power Supply (un-used).** Ajax Tocco Inductron PT power supply, capacity: 450kW. Frequency: 3-10 kHz. Output Voltage: 400 \*. Year of manufacture: 2006. This unit was never installed and is unused. \*Price quoted from Ajax Tocco to convert output voltage from 400 to 800 including parts and labor is \$15,230. New this unit was \$86,000 USD, [http://www.ajaxtocco.com/applications/documentlibrary/Inductron%20PT\\_092003.pdf](http://www.ajaxtocco.com/applications/documentlibrary/Inductron%20PT_092003.pdf)

**Asking \$39,000.00 USD.**



# LAB EQUIPMENT FOR SALE

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## **Quick Jump To Items:**

**Item # L8** Tensile Testing Machine

**Item # L7** Leco Micro Hardness Tester

**Item # L3** Laser Diffraction Particle Size Analyzer

**Item # L1** Detroit Testing Brinell Hardness Tester

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## ITEM #L7

### LECO MICRO HARDNESS TESTER

**Leco Micro Hardness Tester.** Complete and in good condition. Unit has become surplus to the vendors organization.

**Asking \$7,000.00 USD.**



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## ITEM #L3

### LASER DIFFRACTION PARTICLE SIZE ANALYZER

**Laser Diffraction Particle Size Analyzer.** Manufactured by Microtrac, Model S3500. Measurement capability from 0.02 to 2800 microns. Wet and dry measurements. Complete and in very good shape.

**Asking \$20,000** for complete system.

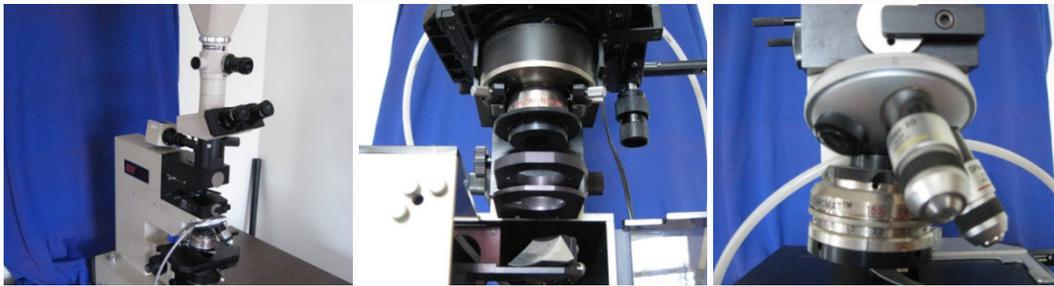


**ITEM # L1**

## **SPECTRA-TECH 0044-003 INFRARED MICROSCOPE**

**Spectra-Tech 0044-003 Infrared Microscope.** Model WHK 10X 201, Reflected & Transmitted light, multiple objectives, Polaroid 4×5 attachment.

**\$6,500.00 USD.**



# MISCELLANEOUS FOR SALE

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## ***Quick Jump To Items:***

- Item #M422 Dunk/Spray Washer
- Item #M421 Berg Chiller
- Item #M420 SBS "Quench Airs", (9 available)
- Item #M417 Soluble Oil Dunk Tank
- Item #M416 Wheelabrator 6' Diameter
- Item #M415 Surface Combustion Parts Washer
- Item #M414 Vacuum Residual Gas Analyzer (3 available)
- Item #M412 Atmosphere Engineering "Endoinjector"
- Item #M411 SBS Quench Oil Coolers (2 available)
- Item #M408 Surface Combustion Power Loading Table 30" Wide
- Item #M406 Surface Combustion Parts Washer
- Item #M400 Nitrogen Generating System 99.999 Purity
- Item #M396 Surplus Cast Link Belt HT Material
- Item #M381 Water Cooling System
- Item #M380 Bronco Wheelabrator 36" Meshbelt
- Item #M366 Wheelabrator Rubber Belt Tumblast
- Item #M363 SBS Large 3 Fan Unit
- Item #M348 Ipsen Dunk/Spray Washer 36" x 48" x 24"
- Item #M346 SBS Quench Air Single Fan Unit
- Item #M341 AFC Charge Car 36" x 48" Tray
- Item #M334 Berg Water Chiller Nearly New
- Item #M314 Holcroft Dunk/Spray Washer 24" x 24" x 36"

## ITEM #M422

### DUNK/SPRAY WASHER 36" X 48" X 36"

**Dunk/Spray Washer 36" X 48" X 36"**. Manufactured by Surface Combustion this is a Dunk/Spray batch IQ washer with working dimensions of 36" X 48" X 36". Electrically heated.

**Asking \$22,500 USD.**



## ITEM #M421

### BERG CHILLER

**Berg Chiller**. Brand: Sterling. Model: GPAC-20 (2014 mfg. year). Capacity: 5 ton. Voltage: 460V/3/60. In good condition.

**Asking Price: \$8000.00 obo**



## ITEM #M420

### SBS "QUENCH AIRS", (9 AVAILABLE)

**SBS "Quench Airs", (9 available)**. We have available 9 SBS air to oil quench oil coolers "Quench Air". These are all in good condition and range in size from 2' long up to 10' long with a total of 5 different models. All are 460V. Asking from **\$1,000 USD** for the 2' units up to **\$5,000 USD** for the 10' long model.



## ITEM #M417

### SOLUBLE OIL DUNK TANK

#### **Soluble Oil Dunk Tank**

Working dimensions of 30" X 48" X 30". Tank has a capacity of 2500 pounds. Includes chart recorder, cooler, recirculation pump, and controls. This could easily be modified or used to water quench aluminum. Good condition.

**Asking \$8,000 USD.**



## ITEM #M416

### WHEELABRATOR 6' DIAMETER

**Wheelabrator 6' Diameter.** 6" Diameter table blast wheelabrator. 30 HP belt drive. Installed and in use until March 2018. Recently reconditioned with rebuilt auger. Brand New wheel and wheel housing. Good controls with pneumatic operated control and timer to shut down wheel and notify operator when cycle is complete. Very reliable machine in excellent condition. Table is mounted on the door with full access for overhead crane.

**Asking \$75000.00 USD.**



## ITEM #M415

### SURFACE COMBUSTION PARTS WASHER

**Surface Combustion Parts Washer.** Manufactured by Surface Combustion of Ohio this is a spray washer with working dimensions of 30" X 48" X 30" high. Radiant tube gas heat and rotary drum oil skimmer and separate skim tank located on back of wash. This is partially reconditioned . It is in overall good condition.

**BEST OFFER**



## ITEM #M414

### VACUUM RESIDUAL GAS ANALYZER (3 AVAILABLE)

**Vacuum Residual Gas Analyzer (3 available).** Pfeiffer Vacuum PrismaPlus QMG220 Compact Mass Spectrometer, Mass Range 1-200 amu, Catalog # PT M06 211 111, Residual Gas Analyzer. Unused these were new in Dec. 2015 and are still in original factory packaging. Warranty expired, but still factory supported. Each set consists of the following;

1. 1 Each, Quadrupole electronics QME220, P/N PTM28612
2. 1 Each, Quadrupole analyzer QMA200, P/N PTM25253
3. 1 Set, QMS220, Accessories & Spare Parts
4. 1 Each, SP 220, (033-0038 43202) Power Supply 90-264VAC, 2.1mm R/A (24 V Output)
5. 1 Each, 45-0007 43024 UTP-Patch-Cable, 3m, Crossed, Red
6. 1 Each, B4564309YX Inficon Mains Cable (USA) LNPE, AWG 18, 2.5m
7. 1 Each, 45-0006 UTP-Patch-Cable, 3m, 1:1, grey 43024

- 8. 1 Each, PT882400-T Quadera-software, Version 4.61 12/10/2015 for Windows 7 or XP (32-bit Pro)
- 9. 2 Each, PrismaPlus QMG220 Operating Instructions (1-English & 1-German)
- 10. 1 Each, Test Reports and Configuration
- 11. 1 Each, PT R 26 002 Compact Full Range Vacuum Gauge PKR 251, DN 40 CF F
- 12. 1 Each, PT 448 250-T Sensor Cable

**Price: \$8,800/Set (3 Available) Free Shipping included in price**



**ITEM #M412**

**ATMOSPHERE ENGINEERING "ENDOINJECTOR"**

**Atmosphere Engineering "Endoinjector"** 3 year old Atmosphere Engineering Endoinjector for controlling output on an endothermic generator. S/N 0601-DP1, Endo Output 600-3000 CFH. Includes PLC. Good condition and less than a third of the price of new.

**Asking \$6,500.00 USD.**



**ITEM #M411**

**SBS QUENCH OIL COOLERS (2 AVAILABLE)**

**SBS Quench Oil Coolers (2 available).** Air to oil quench oil coolers manufactured by SBS Corporation. 480V/6/60. External dimensions of 6' wide X 5' high X 21' long. This unit has three (3) NEMA type disconnect switches mounted on side of unit. Standard "SBS Quench

Air” air cooled heat exchanger with removable tube manifold, propeller fans for moving air across the tube bundle, flanged inlet & outlets, three (3) NEMA type disconnect switches mounted on the side of the heat exchanger. This unit has a removable top that has louvers for directing the air horizontally instead of vertically. Good condition.

**Asking \$13,500.00 USD Each.**



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### ITEM #M408

### SURFACE COMBUSTION POWER LOADING TABLE 30" WIDE

**Surface Combustion Power Loading Table** (stationary), 30" wide.

**Asking Price: \$1,000 USD**



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### ITEM #M406

### SURFACE COMBUSTION PARTS WASHER

**Surface Combustion Parts Washer.** Manufactured by Surface Combustion this is a Spray washer with working dimensions of 30" wide X 48" deep X 30" high. Gas fired with an operating temperature of 200F. Good overall condition.

**Asking price of \$12,500 USD**

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## ITEM #M400

### NITROGEN GENERATING SYSTEM

**Nitrogen Generating System.** Manufactured by South Tek Systems in 2013 this system is in "like new" condition. The unit includes; STS N2-GEN 200S with Oxygen Analyzer, 1,060 Nitrogen Storage Tank, Kaeser ASD40T Complete Air Compressor package with Refrigerant Dryer and 240 Gallon Air Receiver Tank, Connection Package. Performance Capabilities: Nitrogen Purity Ranging from 95% – 99.999%, Nitrogen Hourly Flow Rate Ranging from: 473 SCFH – 5,371 SCFH \*depending on purity setting, Nitrogen Outlet Pressure Range: 0 – 80 PSI. Excellent condition, available the end of June.

**Asking \$82,500.00 USD.**



## ITEM #M396

### SURPLUS CAST LINK BELT

**Surplus Cast Link Belt.** Used Omega HT Cast Link belt with HR 120 connecting rods. 4" pitch, 78" wide X 130' long. Weight 26,741 pounds. Also available is a porcupine drive roll, 11' long, 700 pounds. A tail roll 11' long X 11" diameter, 700 pounds, entry and exit hearth rolls 10.5' long X 6" diameter and a return roll 10.5' long X 14.4" diameter. Good condition. Buyer can inspect condition upon request.

**Please call for pricing – Gord: 905.271.0033**



## ITEM #M381

### WATER COOLING SYSTEM

**Water Cooling System.** VFC 500 gallon, 10HP 150 GPM pump, 3500 rpm motor. Plate heat exchanger, Graham model VFX-18, s/n 93-10058-1. This unit was used on 5,000 lb. loads.

**Asking \$7,500.00 USD.**



## ITEM #M380

### WHEELABRATOR – BRONCO

**Wheelabrator – Bronco.** Model# SLC500. 36" Mesh Belt –VFD drive. 8 – 20hp Blasting Wheels – VFD drive. Media separator, Torrit dust collector. Some spare parts are also included. Well maintained and works well. Footprint – 30' long, 16' high, aprox. 12' wide.

**Asking Price: \$39,900 USD.** (Includes loading at the facility)



## ITEM #M366

### WHEELABRATOR RUBBER BELT TUMBLAST

**Wheelabrator Rubber Belt Tumbblast.** Model # TBR-12, Serial # A142403, Voltage 480/3/60, 12 cubic feet, Controls – complete. Available Immediately, very good condition.

**Asking: \$55, 000.00 USD.**



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## ITEM #M363

### SBS UNIT

**SBS Unit.** Specs: S/N: 4926. Year: 2007. Three (3) Fans with side mounted disconnects. Overall Size: 6'w x 6'h x 21'l. W-RES, MAWP 75 psi @ 450°F, MBMT -20°F, 75 psi.

**Price: \$15,500.00.**



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## ITEM #M348

### IPSEN AUTOMATIC DUNK/SPRAY WASHER

**Ipsen Automatic Dunk/Spray Washer.** Model #WRD-11, Serial Number 57690. Working dimensions of 36" wide X 48" deep X 24"+ high, 2200 pound capacity. Electrically heated, 72KW. Companion washer-In/Out or straight through design. Door each end, Cal Rod element bundle. 12" wide belt oil skimmer, air operated-full width elevator rack for submerged oscillation, overhead spray rinse. Overall dimensions of 7' 5" wide X 5' 4" long X 11' 8" high. Rebuilt,

**Excellent condition asking \$35,000 USD.**



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## ITEM #M346

### SBS "QUENCHAIR"

**SBS "QuenchAir"**. SBS Corporation air/oil quench oil cooler. Single fan unit model 5084-Q4. Serial number: 2365, 230/460 voltage, overall size: 74" wide X 104" long X 55" high. Comes with disconnects. Very good condition.

**Asking \$5,500.00 USD.**



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## ITEM #M341

### AFC CHARGE CAR

**AFC Charge Car**. Drawing # MT-237014. Voltage 480/3/60. Suited for a 36" wide X 48" tray. External dimensions of 100" wide X 84" deep X 84" high. Side mounted control panel with Allen Bradley SLC 500 PLC Logic Control. Double ended chain driven powered charge car with roller rail top. Excellent condition.

**Asking \$28,500.00 USD.**



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## ITEM #M334

### BERG WATER CHILLER

**Berg Water Chiller.** This is a BERG Air Cooled portable Chiller, Model PA-1.5-1P capable of supplying 1.5 tons of cooling capacity at 15 degrees F leaving and 95 degrees F ambient temperature. Used for only 3 days (low hours), and is in nearly new condition. Electrics are 460/3/60 and it comes with a 575-460 transformer.

**Asking \$5,500.00.**



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## ITEM #M314

### HOLCROFT DUNK/SPRAY WASHER

**Holcroft Dunk/Spray Washer.** Model GPWS 24-36-24. Electrically heated, 480/3/60/50 amps. Working dimensions of 24" wide X 24" high X 36" deep. External dimensions of 96"W X 143" high X 124" long (91" without skimmer attached). This is a standard dunk/spray washer with 4 Warren Electric immersion heaters. Spray nozzles are arranged over and all sides of the wash area. Load height is 51" from floor to top of rollers. Wheel centres are 14-1/2". Controls are mounted and wired on the right hand side of the washer and includes all necessary pushbuttons and signal lights. There is a dunk cycle timer and spray cycle timer. A Honeywell UDC 2000 digital temperature controller controls wash temperature. Good condition.

**Asking \$18,500.00 USD.**



# VACUUMS FURNACES FOR SALE

See something you need, click on the link or scroll through all the items for sale. Searching for something we don't have listed, let us know.

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## ***Quick Jump To Items:***

- Item # VF338** Abar Ipsen TurboTreater "2 Bar"
- Item # VF337** Oil Quench Vacuum Furnace
- Item # VF336** C.I. Hayes Vacuum Furnace
- Item # VF335** ALD Vacuum Carburizing Furnace
- Item # VF334** Degussa Vacuum Hardening Furnace
- Item # VF333** Low Temperature Vacuum Tempering Furnace
- Item # VF332** IVA Vacuum Furnace 6 Bar
- Item # VF331** High Temperature Vacuum Furnace 2300 °
- Item # VF330** Surface 2-Bar Quench Vacuum Furnace
- Item # VF328** Abar Ipsen Model HS-26 Vacuum Furnace
- Item # VF327** Surface Combustion Vacuum Temper Furnace
- Item # VF326** Ipsen 924 Vacuum Furnace
- Item # VF321** Ipsen Vacuum Furnace
- Item # VF320** High Temperature Vacuum Furnace
- Item # VF319** Vacuum Induction Melting System
- Item # VF317** Twin High Temperature Vacuum HT Sintering Furnaces
- Item # VF316** AVS Vacuum Furnace 24" x 24" x 48"
- Item # VF315** AVS Vacuum Furnace (Rebuilt)
- Item # VF314** Ipsen Bottom Load Furnace 60" x 96"
- Item # VF313** Top Loading Vacuum Furnaces 2100 C
- Item # VF312** Vacuum Furnace 2400 C
- Item # VF307** Bottom Loading Vacuum Furnace 48" x 60"
- Item # VF299** Sunbeam Vacuum Furnace 36" x 120"
- Item # VF294** Vacuum Annealing Furnace 8" x 90"
- Item # VF289** Ipsen Vacuum Temper 12" x 16" x 24"
- Item # VF282** AVS Vacuum Debinding/Sintering Furnace

Item # VF271 Sintering/De-Wax Furnace 1400 C

Item # VF267 Semi-Continuous Titanium Diffusion Bonding Hot Press

Item # VF266 Kinney 75 CFM Vacuum Pump

Item # VF243 35" Diffusion Pump

Item # VF242 35" Diffusion Pump

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## ITEM # VF338

### ABAR IPSEN TURBOTREATER "2 BAR"

**Abar Ipsen TurboTreater "2 Bar"**. Abar Ipsen "TurboTreater" vacuum furnace. 2 Bar quenching. Working dimensions of 36" X 36" X 24". 18" diffusion pump, Stokes 671 booster pump and 212H roughing pump. Yokogawa CX 2000 controller and CM31 vacuum gauges. Hot zone is approximately 6 years old. Moly elements with graphite insulation. Bottom 1/3 of furnace covered in CFC carbon fibre for added protection. Date of manufacture 12-1-1990. Closed loop cooling system included-furnace has always been run with a closed loop glycol system. Annual ultrasonic testing of the shell for the past 6 years. Installed. This furnace has always operated in an aerospace facility with all parts cleaned before processing. Immaculate condition!

**Asking \$225,000 USD**



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## ITEM # VF337

### OIL QUENCH VACUUM FURNACE

**Oil Quench Vacuum Furnace** (with gas quench capability at 1000 m bar). Manufactured in 2004 with working dimensions of 500 mm W x 420 mm H x 710 mm L. Loading Capacity : 280 kg. Max. Temperature : 1250 deg C. Heating Power : 100 kW. Vacuum Level : 10exp-1 mbar range.

**Price : 120.000 Euros.** (quench oil and loading truck included, located in Turkey)



**ITEM # VF336**

### C.I. HAYES VACUUM FURNACE

**C.I. Hayes Vacuum Sealed Quench Furnace Model:** VSQ-182436; S/N: 16007. Working Dimensions: 18" High x 24" Wide x 36" Long. Graphite Heating Elements. Max Operation Temp: 2400°F (1093°C). Temperature Uniformity: 25°F Total Spread. Connected Load: 90 KVA. Total Load: 120 KVA. Gas Backfill Requirements: 160 SCF. Typical Loading and Quenching Capacity: 500 lbs. at 1600°F. Quench Tank Capacity: 685 Gallons. Compressed Air Requirements: Small Demand at 100 psig. (must be maintained at ±10%). Sight Port: 5" Dia. Hearth Level: 25-1/4". Cooling Water: 5-15 GPM (60°F). Quenching Speed: <10 Seconds (heating chamber into quench tank). Furnace needs work in order to run parts. System was originally installed with a Stokes 412 vacuum roughing pump.

**Asking Price: \$20,000**



**ITEM # VF335**

### ALD VACUUM CARBURIZING FURNACE

**ALD Vacuum Carburizing Furnace.** Loading Dimensions : Width 400 x Length 400 x Height 400 mm. Loading Capacity : 80 kg max. Cooling Fan Motor : 75 kW, 3000 rpm for 10 bar N2. Vacuum System : Leybold SV100 Mechanical Pump. Leybold WA501 Roots Pump. Leybold E250 Mechanical Pump. Leybold WA1001 Roots Pump. Vacuum Level : <math>5 \times 10^{-2}</math> mbar. Leak Rate : <math>5 \times 10^{-3}</math> mbar l/s. Heating Zone : 120 kW, 2 zones. Plasma

Chamber : 60 kW, 1 zone. Diffusion Zone : 180 kW, 3 zones. Max. Temperature : 1250 °C (Heating chamber). Operating Temperature : 800-1100°C. Process Gases : Nitrogen, Methan, Argon, Hydrogen. Installed Power : 700 kVA, 3x400V 50 Hz. Manufacturing Year : 2002.

**Price: FOT/Germany : 75.000. Euro**



**ITEM # VF334**

## **DEGUSSA VACUUM HARDENING FURNACE**

**Degussa Vacuum Hardening Furnace.** Year of construction 1990. The furnace name is VKSQ 80/80/120. The maximum temperature is 1350 °C, the max. The load is 1500Kg gross, the heating capacity is 250kW, the working space is 800x1200x800mm, the permissible pressure of the system is 6bar absolute and the furnace has the possibility of convective heating. The furnace control was renewed a few years ago (Demig). Located in Germany.

**Price : FOT / Germany Euro 60.000**



**ITEM # VF333**

## **LOW TEMPERATURE VACUUM TEMPERING FURNACE**

**Low Temperature Vacuum Tempering Furnace.** Maximum temperature is 500 C. Located in Turkey.

**Price : FOT/Germany Euro 28.000**



ITEM # VF332

### IVA VACUUM FURNACE 6 BAR

**IVA Vacuum Hardening Furnace.** Useful Dimensions: W300xL500xH300 mm. Capacity: 100 kg. Max. Temperature: 1300 C. Temperature Uniformity: +/- 5 C. Heating Power: 50 kW. Vacuum Level:  $10 \times 10^{-2}$  mbar. Cooling Pressure: 6 bar. Year of Manufacturing: 1993. Located in Turkey.

**Price : FOT/Germany Euro 28.000.**



ITEM # VF331

### HIGH TEMPERATURE VACUUM FURNACE 2300

**High Temperature Vacuum Furnace 2300.** Manufactured by Elnik this is a MODEL T-3000 unit, built in 1993. The vacuum furnace consists of a watercooled cylindrical chamber, a molybdenum hot zone with tungsten heaters, a roughing pump, a holding pump, a diffusion pump, a heat exchanger assembly, and all associated valving.

- The furnace runs on 480 volts
- Stokes roughing pump Model 148 H-9
- Holding pump (Walsh) 1402
- Varian diffusion pump - VHS-6
- Water system - Model WCS 305-ET with a 300 gallon stainless steel recirculating tower model 1CT4-64
- 2300F operating temperature

- Ut35 temperature controller controls the temperature of the furnace as programmed by the operator via the computer's profiler utility
- Complete and in Good Condition

**Asking \$19,950.00 USD**



**ITEM # VF330**

**SURFACE 2-BAR QUENCH VACUUM FURNACE**

**Surface 2-Bar Quench Vacuum Furnace.** Model# HVPI 484824. Maximum Temperature: 2400F. Power requirements: 460/3/60, 275 KW. Hot Zone Dimensions: 48" Wide x 48" Deep x 24" High. External Dimensions: 12' Wide x 12' Deep x 11' High. Features: Horizontally Loaded Vacuum Furnace complete with 412 Stokes Vacuum Pump, Roots 615 Booster Pump, 2 Bar Quenching, Graphite Heating Elements, "Autoclave" Style Swing-Out Front Door, and Powered Big Joe Loader. Also Included is (1) Crate of New Spare Heating Elements and Connectors. Controls: Free-Standing Control Panel complete with Marathon Monitors Digital Temperature Controller, Honeywell Digital High Limit, and Honeywell Round Chart Recorder. Condition: Very good – Operational. Approx. Weight: 25,000 lbs

**Asking Price: \$119,000**



**ITEM # VF328**

**ABAR IPSEN MODEL HS-26 VACUUM FURNACE**

**Abar Ipsen Model HS-26 Vacuum Furnace.** Model HS-26 Abar Ipsen vacuum furnace. Working dimensions of 24" wide X 18" high X 36" deep. Working capacity of 750 pounds. Stocks vacuum pumps and Varian Diffusion pump. 1 zone of temperature control. Honeywell controllers with Honeywell paper chart recorder. MKS vacuum instruments. Operating temperature of 2400F. 480 volts. Was used in an aerospace facility before it was very recently removed. Complete. Please ask for pricing and more details.

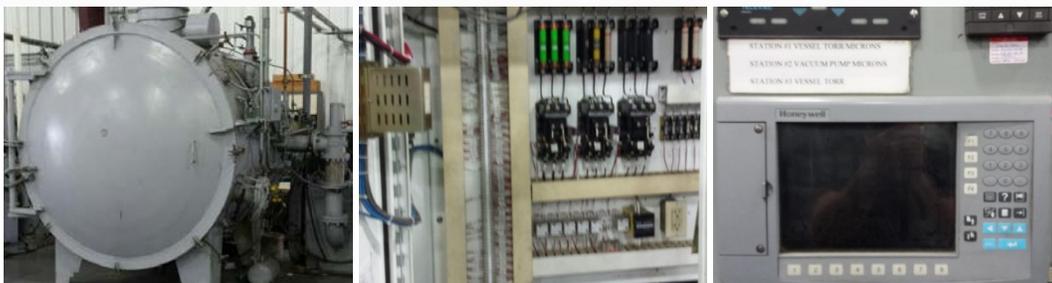


ITEM # VF327

## SURFACE COMBUSTION VACUUM TEMPER FURNACE

**Surface Combustion Vacuum Temper Furnace.** Working dimensions of 36" x 48" x 24" and is approximately 23 years old. The equipment is in good condition with Honeywell HC900 Controls, Telvac Vacuum Control & Sensors, Honeywell UDC 2000 overtemp control, Stokes 412 Vacuum Pump, Controls Concepts SCR, McLeen Cabinet Cooler. Brand New Heating Elements ready to be installed. Internal Fan Circulation. This unit was pulled from service to make room for a new Vacuum furnace just recently. Max Temp 1500° F, 480 Volt / Three Phase.

**Asking Price: \$50,000 USD**



ITEM # VF326

## IPSEN 924 VACUUM FURNACE

**Ipsen 924 Vacuum Furnace.** Ipsen VFC-924-R Vacuum Furnace. Working dimensions of 32" wide X 53" deep X 26" high. Maximum operating temperature of 2400F, recently

surveyed from 1400-2000F at +-25F. Stokes vacuum pumps and Varian Diffusion pump. One zone of control. Honeywell controllers. Good operating condition, currently installed but not in use. 480 Volts.

**More details and asking price available upon request.**



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**ITEM # VF321**

## **IPSEN VACUUM FURNACE**

### **Ipsen Vacuum Furnace:**

- Manufacturer: Ipsen
- Model: VFC-524
- Temperature: 2400F
- Moly-faced hot zone
- Graphite heating elements
- 18" Ipsen Diffusion Pump
- Stokes 412H-10 (old style) mechanical pump
- 50 kVA power transformer
- Top-mounted cooling fan with 15 HP Motor
- Had a new control Panel with Athena AT25 Digital Temp Control, Hastings Series 310 Digital Vacuum Controller, and L&N strip chart recorder.
- Currently in storage in San Diego, CA area

**Price: \$58,000 USD.**



## ITEM # VF320

### HIGH TEMPERATURE VACUUM FURNACE

**High Temperature Vacuum Furnace.** Manufactured by Thermal Technologies LLC, Model 121224G. Working dimensions of 12" wide X 12" high X 24" deep. Maximum load weight of 200 pounds. Operating temperature of 1565C, maximum temperature of 2000C. Operating vacuum level 10-2 torr range. Ultimate vacuum level 10-3 torr. Process gas argon. Front and rear doors. Graphite heating elements with rigid fibrous graphite insulation panels (hot zone is NOT installed but virtually all the components are included) 125jVA power supply. Rotary vane pump , Trivac B Leybold Model D65B (53CFM). Eurotherm Model 2704 high performance controller/programmer with SpecView software. Furnace comes complete with chiller and parts washer.

**Asking \$100,000 USD for everything.**



## ITEM # VF319

### VACUUM INDUCTION MELTING SYSTEM

**Vacuum Induction Melting System.** Manufactured by Ionex, Model 260 LB VIM, S/N 93978. Electrically heated 480/3/60/200 KVA. Work area 150 kW, 3 kHz, 260 Pound. External dimensions of 10' wide X 10' high X 15' long. Controls; Complete with PLC and touchscreen HMI interface. 260 pound horizontal front loading VIM with water cooled stainless steel vacuum chamber. Pumping system includes a BOC/Edwards 1722 package with mechanical pump/booster and a stainless steel 20" T-M Vacuum diffusion pump. Induction power supply consists of a Pillar 150 kW, 3 kHz and includes water cooled power leads. This furnace has automatic tilt and includes two (2) crucibles. Also included with this VIM is a rotating load table that moves up and down for accurate pouring. Lot of misc. spare parts and molds are included. Excellent condition.

**Asking \$285,000 USD.**



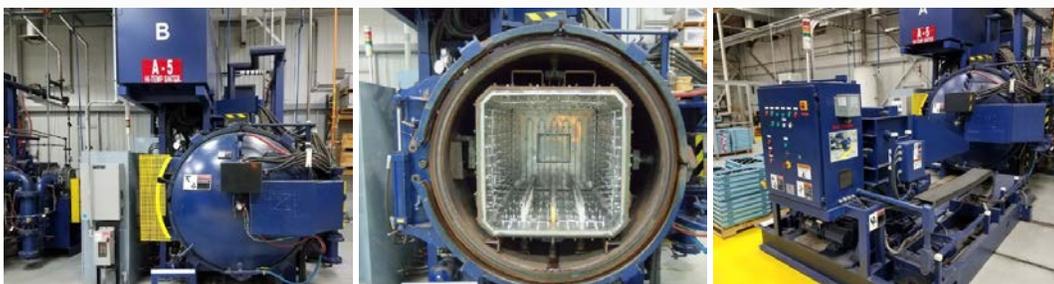
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## ITEM # VF317

### TWIN HIGH TEMPERATURE VACUUM HT & SINTERING FURNACES

**Twin High Temperature Vacuum HT & Sintering Furnaces.** Two each Seco/Warwick Model V40-35/48 Vacuum Furnaces, 1500C (2732 F) Max. operating temperature, 1600C (2912F) burn-out temperature, Work Zones: 600mm x 650mm x 1200mm (23.6" x 25.6" x 47.2"), Design uniformity +/- 10C, but with elements on all 6 sides we would expect much better uniformity, One furnace hot zone is in excellent condition and the other is nearing time for replacement, All-Metal Hot Zones (Layers: 1 Tungsten, 7 Moly, 1 Stainless Steel), Low voltage Tungsten Heating Elements, Moly hearth, Load Rating: 2850 lb. (1300 Kg), Power: 480V/3Ph/60Hz, 390 kW SCR Heating Input with 3-zone control, 420 kVA total power, Stainless steel chamber, water jacket and hot zone plenum, Controls are CompactLogix PLC with computer, touch screen and SCADA software, Leybold TTR91 pirani vacuum sensor, Edwards (Stokes) 212J mechanical pump with Edwards 607 booster pump, Gases set up for Argon cooling and hydrogen purge, Hydrogen mass flow controller, Gas quench pressure rating is 1.05 Bar absolute. Mezzanine-mounted power supplies for minimal floor space requirement. Both furnaces (2), factory loader and existing spare parts are included at this price. Disassembly and Loading: Buyer's responsibility. Built in 2010 these furnaces were only used for 1 year. Excellent condition!

**Asking \$275,000 USD for Both.**

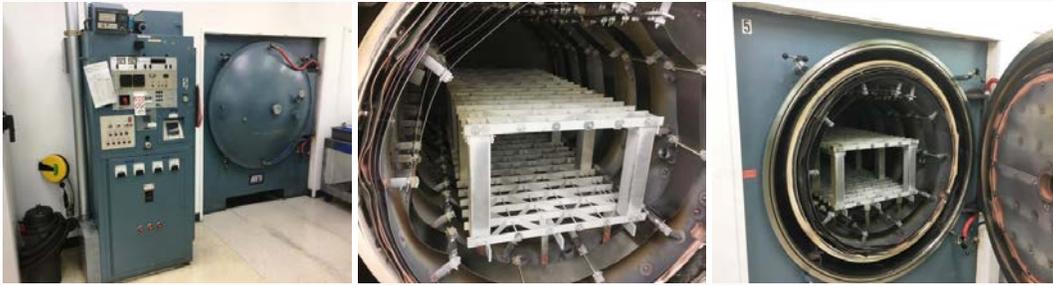


## ITEM # VF316

### AVS VACUUM FURNACE

**AVS Vacuum Furnace.** Model HMF-24-24-48-1100. Hot Zone: 24" x 24" x 48" deep, Moly with moly elements. Eurotherm controls 2704 & 2116i, Turbopump controller needs to be replaced. Operating temperature of 2400F. Cryotorr high vacuum pump; Turbopump may need rebuild. Additional Port for 20" Diffusion Pump. Current footprint: 15' Deep x 15' Wide x 11' High (8'H without power supply). Power: 250KVA, 440-480V, 3Ph, 60Hz. 2-Tier Moly Fixture. VFD on blower. Rear Access Door. Needs new hot zone. May need turbopump and turbopump controller.

**As is or Asking \$195,000 USD with COMPLETE Rebuild.**



## ITEM # VF315

### AVS VACUUM FURNACE (REBUILT)

**AVS Vacuum Furnace (Rebuilt).** Model HMF-24-24-48-1100, Hot Zone: 24" x 24" x 48" deep, Moly with moly elements. Controls new in 2015. Operating temperature of 2400F. Pumps: Cryotorr high vacuum pump; Turbovac MAG Intregra roughing pump; New turbopumps and valving in 2015. Additional Port for 20" Diffusion Pump. (GVT has 20" D.P. & right angle valve available). CTI-Cryogenics 9600 compressor. Current footprint: 15' Deep x 15' Wide x 11' High (8'H without power supply). Power: 250KVA, 440-480V, 3Ph, 60Hz. Loader Included as well as a 2-Tier Moly Fixture. VFD on blower. Rear Access Door. EXCELLENT condition. Rebuilt July 2015.

**Asking \$195,000 USD.**



## ITEM # VF314

### IPSEN BOTTOM LOAD VACUUM FURNACE

**Ipsen Bottom Load Vacuum Furnace.** Work Zone: 60" Diameter x 96" Tall with a Temperature of 2400F. Diffusion pump: 35" diffusion pump, with port and right angle valve. Manufactured in the 1980's with a Power of 480V/3Ph/60Hz; 600kW. Hot Zone: 2008 reline, graphite elements. Cooling Gas: Was running Argon; capable of 1-Bar cooling. Top mounted cooling fan. Water Cooling: Includes Dry Cooler closed-loop AquaVent water cooling system; 2005, 200 GPM, Plate & Frame Heat Exchanger with Thermacare fiberglass Tower.

**Asking Price: \$325,000 USD.**



## ITEM # VF313

### TOP LOADING VACUUM FURNACES (6 AVAILABLE)

**Top Loading Vacuum Furnaces (6 available).** Manufactured by GT Technologies, Model # AMPF-4836HP – 2015. Working dimensions of 1200mm diameter x 900mm High. Operating temperature of 2100C. Controls by Loy Instruments (Honeywell graphic touchscreen). This unique ultra high temperature furnace is high vacuum, has resistance heating with all graphite hot zone and graphite felt insulation for high efficiency operation. 480 volt 3PH 50/60 HZ, 160 KVA. Maximum load 1,000 KG. Double Wall Stainless Steel Vessel construction. Platform with Stairs included. Halogen Gas Purge equipped, Dry Vacuum Pumping System with Blower. Graphite Purity levels to less than 5ppm. Cycle time 72 – 84 hours. 10 – 3 Torr vacuum level achievable. Options: Exhaust Scrubber System, Overhead Crane. Very good condition.

**Asking \$175,000 USD each.**



## ITEM # VF312

### 2400C VACUUM FURNACE

**2400C Vacuum Furnace.** Capable of 2400C (4320F). Working dimensions of 10" high x 22" wide x 36" deep element-to-element. External dimensions of 86" high x 76" wide x 85" deep. 480 volts, 3 phase, 225 kw. This unit is capable of both vacuum and atmosphere operation. Graphite rigid board insulations, graphite heating elements on all 4 sides, graphite hearth plate, 6 channel digital chart recorder, Yokogawa UP 550 digital programmable controller. High accuracy Raytek digital optical pyrometer. All New Vacuum Chamber – Tested and Certified and new graphite hot zone. Very good condition.

**Asking \$149,000 USD.**



## ITEM # VF307

### BOTTOM LOADING VACUUM FURNACE

**Bottom Loading Vacuum Furnace.** Manufactured by Vac Aero. Working dimensions of 48" diameter X 60" high. 4860 High Vacuum ( diff pump) bottom loader Main Chamber replaced new in 2000. 50 HP Spencer Turbine gas quench blower with a .85 Bar pressure quench. Closed loop water system w/o air coil. Yokogawa paperless chart recorder. Honeywell DCP550 Set point programmer. Edwards vacuum gauge controller. Furnace is installed and presently in operation. Customer responsible for removal. Complete and in good overall condition.

**Please call for pricing.**



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## ITEM # VF299

### SUNBEAM VACUUM FURNACE

**Sunbeam Vacuum Furnace.** Model # 40236, Serial Number F-170-82. Working dimensions of 36" wide X 120" long X 36" high. Maximum operating temperature of 2552F (1400C). 460 volts, 400Kw, 3 phase. Honeywell digital program control, Honeywell digital overtemperature control, Honeywell strip chart (inoperative) and Granville-Phillips 375 Convectron vacuum controller in enclosed panel. Double walled water cooled horizontal load vessel. Interior has a molybdenum liner with graphite heating elements on both walls, roof and floor. 20 HP cooling fan mounted in rear. Pumping system consists of a Stokes 412-11 mechanical pump with Roots booster. Power to the heating elements is through VRT's. A battery powered loader is included. Some of the heating elements were damaged during shipment and will need to be replaced by buyer.

**Asking Price: \$95,000 USD.**



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## ITEM # VF294

### VACUUM ANNEALING FURNACE

**Vacuum Annealing Furnace.** Manufactured by Thermionics this is a custom designed vacuum annealing furnace designed to heat treat wire up to 210 cm long. The vacuum chamber has an 8" Dia. X 90" effective working length. The operating temperature was developed for a maximum operating temp of 1200° F, The vacuum nominal level (continuous) duty was developed as 1 X 10<sup>-6</sup> Torr. Maximum vacuum level to operate in

continuous duty is  $5 \times 10^{-8}$  Torr. The unit was designed to use N<sub>2</sub> gas. The unit was an R & D unit that was built in 1998, but has had little to no use. Excellent condition. New this was \$90,000 USD.

**Asking Price: \$29,000.00 USD.**



**ITEM # VF289**

## **IPSEN VACUUM TEMPER FURNACE**

**Ipsen Vacuum Temper Furnace.** Built in 1981. Working dimensions of 280 mm high X 420 mm wide X 590 mm deep (11" X 16.5" X 23.2"). Maximum load 100kg (220 pounds). Minimum operating temperature 150C, maximum operating temperature 700C. Input power 94 KVA, heating 71Kw, 575 volts, 60Hz. Type K T/C's, Honeywell controls. Vacuum contact point  $1.0 \times 10^{-1}$  mbar, operating pressure 1000 mbar. Maximum vacuum level  $5.0 \times 10^{-2}$  mbar. Circulated nitrogen atmosphere gas. Elements Cr-Ni Steel. Stokes model 149H vacuum pump. SS hot zone. Class 3 furnace with a temperature uniformity of  $\pm 8$ C. Used in an aerospace heat treat facility until it was replaced with a new furnace. Complete although missing the temperature recorder. Included are a manual loader and 3 baskets. Excellent condition.

**Asking Price: \$59,500 USD.**



**ITEM # VF282**

## **AVS VACUUM DEBINDING/SINTERING FURNACE**

**AVS Vacuum Debinding/Sintering Furnace.** This is a horizontal graphite vacuum debinding sintering furnace for steel MIM parts completely rebuilt from top to bottom by AVS in 2010. Working volume – approximately 18 cubic feet, 28” wide x 26” high x 42” long graphite retort, 1500# capacity. Temperature – rated for continuous operation at 1400°C ±10°C in vacuum, 1450°C burn-out. 50μ ultimate vacuum; leak rate <10μ / hour, CEDORT (Clean, Empty, Dry, Outgassed, Room Temperature). De-bind system - nitrogen or argon sweep gas, 0 - 100 torr differential pressure controlled by PLC and automatic I-to-P modulating vacuum valve, binder trap, condenser assembly; options available for hydrogen gas and burn-off. De-bind lines heated to keep vapor from condensing in vacuum lines. Fast cooling with circulation fan and automatic gas re-circulation ports. Control system - AVS ACE™ control/data acquisition system. Estimated cold-to-cold cycle time of 16 to 20 hours with AVS “Fast Cool” option. Horizontal jacketed chamber - 60” dia. x 80” long, nominal dimensions, flanged, on legs. SA-516-70 mild steel construction on water jackets and door + body flanges. Stainless Steel inner jacket & dished head plus all power ports Front-loading chamber with 2 doors - both doors on adjustable hinges, with buna o-rings, manual clamps, for operation from 50 millitorr vacuum to 3 psig positive pressure; rear door opens for service. Ports - rough line on side of chamber, delube line from bottom, fan housing flange on rear door Additional PORTS added to the system to accommodate future system modifications for processing ‘sinter-hard’ P/M materials – a total of up to 7 additional ports ranging from 18” in diameter down to 1” in diameter will be added. Further details available upon request. Currently installed and in excellent condition.

**Asking Price: \$169,000 USD.**



**ITEM # VF271**

## **SINTERING / DE-WAXING FURNACE**

**Sintering / De-Waxing Furnace.** Horizontal sintering furnace with wax condenser 1470°C operating temperature. Water cooled 304 stainless steel chamber with mild steel flanges. Graphite hot zone – 24” wide x 18” high x 36” deep, with hearth rails. Graphite retort – 4 to 5 cubic foot work space, shelves, graphite rollers, de-wax tube and -cooling. 5 HP recirculation cooling fan system – cooling flaps in insulation and retort. Wax condenser assembly with hot water circulation system and removable wax receiver pot. Power supply – transformer-type, low voltage secondary, nominal 250 kW. Vacuum pumps – Stokes 212-

H, 150 cfm rough pump, Roots 615, 1600 cfm booster. Dynamic partial pressure gas system. Unit can be seen in operation and is available for immediate delivery.

**Asking Price: \$299,000 USD.**

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**ITEM # VF267**

**SEMI-CONTINUOUS TITANIUM DIFFUSION BONDING HOT PRESS**

**Semi-Continuous Titanium Diffusion Bonding Hot Press.** System consists of; Load Chamber. Rated for 2720 kg load Moly Pin walking system rated for 2720 kg load 44" w x 54" d x 6.5" high product size in semi continuous mode Stokes 612/300 pump/blower Mounted on roll out frame for easy maintenance

Preheat Chamber. 35" diffusion pump / 100 CFM holding pump Moly Pin walking system rated for 2720 kg load 44" w x 54" d x 6.5" high product size in semi continuous mode Stokes 300 CFM mechanical pump 5 x 10<sup>-5</sup> Torr in 20 minutes 300 kW heater power (Hunterdon) Moly Hot Zone Mounted on roll out frame

Bonding Chamber. 20" diffusion pump / 100 CFM holding pump Moly Pin walking system rated for 2720 kg load 44" w x 54" d x 20" high product size in batch mode 44" w x 54" d x 6.5" high product size in semi continuous mode Constant 1100°C Heated Platens, Moly pressing surface 1000 tons of force, up pressing ram 300 kW heater power (Hunterdon) Moly Hot Zone Mounted on roll out frame

Cooling Chamber. 20" diffusion pump. Stokes 612/300 pump/blower Moly Pin walking system rated for 2720 kg load 44" w x 54" d x 6.5" high product size in semi continuous mode Fast Cool 60°F /min argon. 1750F to 1200F. 25°F variation over part 5 x 10<sup>-5</sup> Torr in 20 minutes Fast Backfill Port Mounted on roll out frame

This system is ideal for any company wanting to develop process for diffusion bonding of any materials which are capable of being processed within the specifications of the furnace. The system is available as a batch or semi-continuous, as the system can be set up in Batch mode for development purposes and semi continuous mode for production. The system is available for inspection as warehoused in the Northeastern USA. New Price for this system is over USD \$16,000,000. This system is available in almost any configuration.

cash and carry with support available from the original manufacturer at a reduced rate, or reconfigured to match your specific requirement at a price TBD. Immediate delivery.

**As is \$890,000.00 USD**



ITEM # VF266

## KINNEY 75 CFM VACUUM PUMP

**Kinney 75 CFM Vacuum Pump.** Warranty Rebuilt Kinney Model KTC-75, Part No. 804982-D, S/N 1105-Y 7710-5 mechanical vacuum pump. 12 Month warranty on rebuild. Will be repainted at rebuilders' shop. Running without problems when removed from service.

**Asking Price: \$ 5,700 USD** F.O.B. West Coast U.S.



ITEM # VF243

## 35" DIFFUSION PUMP

**35" Diffusion Pump.** CVC Model PMC-32C, 35" Diffusion Pumps (Today this is the Varian HS-35. Varian purchased CVC rights to this pump.) Rebuilt condition with a 12 Month warranty. 35" Throat Diameter. Bolt Circle is approx. 38-3/4" with 14 Holes on approx. 8-9/16" Centers. Flange O.D. is 41-3/4". O-Ring Center Diameter is 36-1/8". Approx. 72-3/4" Overall Height (79" on 48" x 48" shipping pallet). Note: Mating 35" Cryo-Baffle is also available for improved low-range vacuum and elimination of backstreaming (See Item# 3161 Below). 6" Foreline with approx. 9-1/2" Bolt Circle with 8 Holes on approx. 3-5/8" Centers. 1/4" dia. O-ring is approx. 8-7/8" diameter to center. Shipping Wt. with pallet approx. 2050 lb. Price in Warranty Rebuilt Condition, Painted:

**\$ 12,250.00 (with existing working elements. Add \$6,000 if you want brand new elements.)**



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ITEM # VF242

### 35" DIFFUSION PUMP

**35" Diffusion Pump.** CVC Model PMC-32C, 35" Diffusion Pumps (Today this is the Varian HS-35. Varian purchased CVC rights to this pump.) Can be purchased either in As-Is condition or in Rebuilt condition with a warranty. 35" Throat Diameter. Bolt Circle is approx. 38-3/4" with 14 Holes on approx. 8-9/16" Centers. Flange O.D. is 41-3/4". O-Ring Center Diameter is 36-1/8". Approx. 72-3/4" Overall Height (79" on 48" x 48" shipping pallet). Note: Mating 35" Cryo-Baffle is also available for improved low-range vacuum and elimination of backstreaming (See Item# 3161 Below). 6" Foreline with approx. 9-1/2" Bolt Circle with 8 Holes on approx. 3-5/8" Centers. 1/4" dia. O-ring is approx. 8-7/8" diameter to center. Shipping Wt. with pallet approx. 2050 lb.

**Price in As-Is Condition: \$ 6,400.00 USD**

**Price in Warranty Rebuilt Condition, Painted: \$ 12,250.00**(with existing working elements. Add \$4,500 if you want brand new elements.)



# HEAT TREAT CENTRAL

- High Quality Low Cost Base Trays
- **Investment cast only**
- Fast Delivery for in-stock trays<sup>1</sup>
- **Surface Combustion Allcase Tray**
- UBQ Furnace Tray
- **Site-specific custom trays**
- Based on existing castings
- **No setup or pattern fees<sup>2</sup>**
- Industrial alloy grades available
- **HU, HT, Super NA22H, ...**

Please send your enquiries to:

Jordan Montgomery  
**[jordan@themonty.com](mailto:jordan@themonty.com)**  
905-271-0033

<sup>1</sup>While supplies last

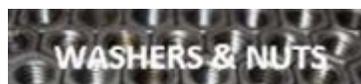
<sup>2</sup>Applies to standard design trays only. Some restrictions apply.

©Heat Treat Central

# Moly

At “**The Moly Store**” we offer extremely competitive pricing on all your molybdenum requirements including wire, round bar, nuts, washers, studs, all thread, sheet, plate even designed and assembled grids! This is combined with unsurpassed quality and a large inventory in the USA available for immediate delivery. The links below will take you to our current inventory all of which can be shipped almost immediately.

**Bob and Ben Grammer welcome the opportunity to help with your requirements [Sales@gvtinc.com](mailto:Sales@gvtinc.com) Phone: 208 765-6854**



# NEW EQUIPMENT

As most of you are aware our background is as Manufacturers Representatives selling Heat Treating Equipment. The alphabetical list below shows the companies which we represent with a brief description of what each does.

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## AFC-Holcroft



**AFC-Holcroft** of Wixom, Michigan manufactures heat treat furnaces, including batch integral quench, continuous austempering lines, mesh belt furnaces, pusher lines, endothermic generators and continuous solution heat treat for aluminum parts. The Process Master division of AFC/Holcroft offers complete control systems for the HT Industry.

<https://afc-holcroft.com/en/>

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## ALD Vacuum Systems



**ALD Vacuum Systems** of Wixom, Michigan provides *'The Solution'* to your high volume, vacuum based heat-treating equipment requirements. We provide process capabilities such as Low Pressure Carburizing (LPC) and high pressure gas quenching (HPGQ) as well as vacuum oil quenching, neutral hardening and on and on. Automated processing of heat treat is the most economical means to gaining the most from your capital investment.

<https://www.ald-web.de/en/>

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## Cooley Wire Products



**Cooley Wire Products:** When it comes to fabricated 330 SS baskets we are unbeatable! A quality manufacturer of heat treating and corrosion resistant fabrications. We manufacture industry standard and custom designed baskets and fixtures. We can manufacture to your drawing, or design something based on your submitted part or part drawing.

<http://www.cooleywire.com/>

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## Custom Electric Manufacturing



**Custom Electric Manufacturing (Electric Heating Elements):** The Custom Electric engineering team has more than 75 years of heating element design experience. Working with original equipment manufacturers and end users, they design elements for new and unusual applications in addition to replacement elements that ensure production efficiency. Phone Number: 248-305-7700.

<https://custom-electric.com/>

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## Dry Coolers



**Dry Coolers Inc.** of Oxford, Michigan makes closed loop process water cooling systems either Air Cooled, Evaporative Cooled, or Mechanically Refrigerated. Dry Coolers also offers quench oil coolers, filtration systems, and a unique outdoor mechanical room "Tower Shed". They are industry leaders in vacuum furnace cooling packages.

<http://drycoolers.com/>

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## **Grammer Vacuum Technologies, Inc. (Molybdenum)**

Grammer Vacuum Technologies, Inc. (Molybdenum): Molybdenum Mill Products, Custom Moly Fixtures and Grids, & Custom Moly Mill Products. All of these are stocked in the USA. Phone Number: 208-765-6854, [Sales@gvtinc.com](mailto:Sales@gvtinc.com).

<http://www.gvtinc.com/pages/MolybdenumProducts.htm>

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## **Graphite Materials**



**Graphite Materials** is your reliable partner for carbon and CFC (Carbon Fibre Composite) components for high temperature applications. We have years of experience designing, manufacturing and testing fixturing for high temperature applications such as vacuum furnaces and vacuum carburizing systems. Carbon and CFC components offers you a product which is light, precise and will offer years of service with no cracking or distortion. More and more heat treaters around the world are considering carbon and CFC fixtures as an alternative to fabricated and cast fixturing.

<http://www.graphite-materials.com/en/>

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## **Heat Treat Central**



Based in Michigan HTC is your supplier for high quality, low cost investment cast base trays. Investment cast trays offer you a longer service life, less porosity and tighter tolerances than standard sand cast base trays at a substantially lower cost. Standard trays available within 1 week.

<http://www.heattreatcentral.com/>

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## Idemitsu



**Idemitsu** is one of the largest suppliers in the world of Quench Oils and Polymer Quenches. Cold, Semi-Hot or Hot quench oils- we have a product that will work for you. We are able to ship typically in less than 5 days from multiple locations around the world. You will find us fast, responsive, cost competitive and we offer free analysis of your current quench oils.

<http://www.idemitsu.com/products/lubricants/index.html>

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## South-Tek



**South-Tek.** South-Tek manufactures a variety of Nitrogen Generators, from those designed to output a few liters per minute of Nitrogen flow rate for table top laboratory applications, to designs capable of producing 75,000 cubic feet per hour to meet the demands of some of the largest industrial plants. Our systems are capable of producing Nitrogen purities of up to 99.9995% (5 PPM and lower). Whether you are using nitrogen for vacuum quenching, inerting atmosphere furnaces or for required safety purge South-Tek Systems has your solution. For more information on PSA Nitrogen Generators and heat treating applications, please visit:

<http://www.southteksystems.com/>

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## Super Systems



**Super Systems Inc.** develops and manufactures products for the thermal processing industry. Our products include probes, analyzers, controllers, software solutions, flow control and engineered systems. We have extensive experience in addressing industry demands with technology to help our customers be more efficient and produce better quality products. Our state-of-the-art manufacturing facility in Cincinnati, Ohio, and offices around the globe give us the resources to address the instrumentation, software and technical needs of the industry.

<http://www.supersystems.com/>

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# EMPLOYMENT OPPORTUNITIES ADVERTISING

The cost is \$150.00 USD per month for a minimum of two months. Payment can be made by Visa or Check. Opportunities should be in the form of a “Word” document and e-mailed to [jordan@themonty.com](mailto:jordan@themonty.com) All “Employment Opportunity” ads can include your company logo and will automatically appear both on the website and in the monthly newsletter “The Monty”.

## Employment Opportunities

### *Quick Jump To Items:*

**Item # 0349** Heat Treat Engineer

**Item # 0348** 1st. Shift Maintenance Technician / Supervisor

**Item # 0347** Heat Treating Manager/Metallurgist/Materials Engineer

**Item # 0346** Heat Treat Technician

**Item # 0345** Multiple Positions Available

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### ITEM # 0349 HEAT TREAT ENGINEER

AAM is a premier, global leader in design, engineering, validation and manufacturing with over 25,000 associates operating at more than 90 facilities in 17 countries.

We’re hiring a Heat Treat Engineer who will be based out of our world headquarters in Detroit, MI. The ideal candidate has:

- A degree in Mechanical, Electrical or Metallurgy Engineering
- A minimum of 5 years experience with heat treat processes and equipment
- Detailed knowledge of carburizing and induction equipment operation and process controls
- Basic knowledge of facilities operations
- The ability to use AutoCAD
- Familiarity with PLC controlled equipment

Responsibilities include, but aren’t limited to:

- Planning, designing and writing specifications for the purchase of heat treat furnaces and tooling or retrofitting of equipment

- Troubleshooting and supporting all heat treat processes, including carburizing, induction and other heat treat furnace operations
- Leading new capital projects to implement the inspection, installation and PPAP of heat treat equipment
- Monitoring and assisting the maintenance organization to develop and/or maintain a detailed preventative maintenance program
- Working on new alloy designs and testing new alloy material for material performance improvements
- Traveling: 50% minimum, U.S. and International

We offer competitive wages and employer-paid benefits, including medical, dental, 401(k), annual profit sharing, annual pay rate increases, and much more. For more information or to apply, [visit aam.com/join-us/careers](http://aam.com/join-us/careers). AAM is an equal opportunity employer.

## ITEM # 0348

### 1ST. SHIFT MAINTENANCE TECHNICIAN / SUPERVISOR

**1st. Shift Maintenance Technician / Supervisor.** Rockford Heat Treaters is a family owned business, we have been in business for 50 years. We are looking for a person who would like to join our team. We offer health, dental, vision, life and disability insurance. We also offer 401K plan with a company match, paid bonus, vacations and holidays.

Qualifications: Education: High School diploma or equivalent. 5 years in the heat treating industry. Must be able to interact and work with co-workers, and be a self-starter. Must be able to read blue prints for both electrical and mechanical equipment. Must be able to trouble shoot equipment (PLC and Relay Logic) and make repairs as needed. Must understand the basic operation of Vacuum, Atmosphere, Pusher, Gas Nitride furnaces ect. Good communications skills. Job Duties: Perform general maintenance duties on all building and equipment as needed. Basic machining and welding skills would be a plus, but not required. Must be able to lift 50 lbs. and be able to climb, bend and stand for long periods. Work with electrical, pneumatics, water and hydraulic systems as they relate to the heat treating industry. Work independently and with co-workers as required. 40-50 hour work weeks – some weekends as needed. Compensation: We offer competitive wages that will be based off of your knowledge and experience. Please email resume to [tom@rockfordheattreaters.com](mailto:tom@rockfordheattreaters.com)

## ITEM # 0347

### HEAT TREATING MANAGER/METALLURGIST/MATERIALS ENGINEER

Heat Treating Manager/Metallurgist/Materials Engineer. Reports To: Director of Manufacturing. Essential Function: NY based Aerospace components manufacturer is seeking an experienced Aerospace Heat Treating Engineer/Manager. This is a new position

for the company that is starting an in-house heat treating operation. Qualifications required are a degree in Metallurgy or Material Science and five-plus years' experience in heat treating aerospace alloys. Must be proficient in Pyrometry procedures, have a working knowledge of ASM –H-6875 AMS 2959 1, 2, 3, 4, 5, 8A, 11 and be able to procure and manage a metallurgical lab using the appropriate ASTM procedures.

#### Primary Responsibilities:

- Procure and establish a metallurgical lab to support the heat treating operation. The initial in-house processes will be normalizing, quench and tempering and Ion Nitriding.
- Establish work procedure for each process in accordance with customer specification or specific ASM specifications.
- Develop procedures in accordance with AMS 2750E for SAT and TUS for each equipment and train personnel to perform these tests as required.
- Hire qualified heat treat operators and also establish a training program for new hires using the guidelines of customer specifications and SAE ARP 162 (Training of Heat Treat Personnel).
- Coordinate and work closely with the quality manager to insure all procedures are followed.
- Insure that lot integrity is adhered to and that materials are segregated and identified until the metallurgical results confirm compliance.
- Establish rework procedures for heat treating when allowed.

#### Knowledge, Skills and Abilities:

- Must be able to achieve NADCAP certification for the in house processes.
- Must be able to establish an audit plan for outside heat treating services to insure compliance with written procedures.
- Manage and train Lab personnel in preparing metallurgical mounts to examine carburized and nitrided case depths and train personnel in using hardness testing equipment.
- Organize calibration services for all lab equipment as required by customer specifications or ASTM requirements.
- Establish a plan for continuous process improvement.
- Insure outside suppliers; gases, thermocouples, etchants and others meet the requirements established by the customer and or AMS or ASTM specifications.
- Provide leadership and team building to the department.

#### PRECISION GEAR INCORPORATED

#### Education and Experience

- College diploma or equivalent is required.

- A minimum of 5 years' experience in a manufacturing plant is required
- Strong supervisory and management skills
- Strong knowledge of plant and manufacturing operations required
- Good training skills
- Ability to read blueprints and parts lists and to apply the metric system
- Ability to work independently and as part of a team in a fast paced environment with little direction
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance a plus

#### REQUIREMENTS

- Must be a U.S. citizen or lawful permanent resident

Please send resumes to Pelay Tran [hr@precisiongearinc.com](mailto:hr@precisiongearinc.com).

## ITEM # O346 HEAT TREAT TECHNICIAN

Heat Treat Technician 2nd and 3rd Shifts. Ability to work weekend overtime. McGard LLC is a well-established progressive WNY company & a world leader in specialized precision mechanical security devices. Our proprietary products are in high demand and & manufactured right here at our WNY facility. McGard offers a competitive salary & comprehensive benefits package: health, dental, life insurance, paid personal days, vacations, holidays, quarterly profit sharing, a 401(k) plan, plus more!

A Heat Treat Technician is responsible for controlling heat treating furnaces to alter the properties of selected materials. This individual will operate the furnaces, draw ovens, pit draws, and any other related equipment. A Heat Treat Technician is also responsible for performing hardness checks according to work instructions. The parts are quenched in oil/gas within the furnace and then removed after prescribed time.

We are looking for an individual with 3 years' experience in Heat Treat Operations and with a strong mechanical aptitude and leadership qualities. This self-motivated, team player will gain experience in a fast-paced production environment, possess the ability to multitask, have problem solving skills and the ability to work well under pressure. A high school diploma is required.

You may send resumes to: Human Resources, McGard LLC, 3875 California Road, Orchard Park, NY 14127.

**Click to apply**

**online: [https://workforcenow.adp.com/mascsr/default/mdf/recruitment/recruitment.html?cid=e5aca532-3921-4cac-89e4-2780a5d9cb9f&jobId=148107&lang=en\\_US&source=CC2&cclId=19000101\\_000001](https://workforcenow.adp.com/mascsr/default/mdf/recruitment/recruitment.html?cid=e5aca532-3921-4cac-89e4-2780a5d9cb9f&jobId=148107&lang=en_US&source=CC2&cclId=19000101_000001)**

*"We are an equal opportunity employer and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability status, protected veteran status or other characteristic protected by law."*



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## ITEM # 0345 MULTIPLE POSITIONS AVAILABLE

Vesco-McLaughlin located in East Windsor, CT and McLaughlin Services located in Avilla, IN are looking to expand and hire people in the industry with any of the following experience:

- Hot Zone Design
- Vacuum and Atmosphere Furnace Design
- Vacuum and Atmosphere Furnace Service Experience
- Vacuum and Atmosphere Furnace Manufacturing Experience
- Electrical and Controls Experience

Please send all resumes and questions regarding positions to Ben Tackett, [btackett@vacuumengineering.com](mailto:btackett@vacuumengineering.com), Main: (860) 627-7015, Fax: (860) 627-9964.

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## SEEKING EMPLOYMENT ADVERTISING

If you are looking for a job position ads are completely free! Simply send us a brief summary of your skills along with what you are looking for in a "Word" Document and e-mail to [jordan@themonty.com](mailto:jordan@themonty.com) Your ad will appear both on the website [themonty.wpengine.com](http://themonty.wpengine.com) and in our monthly newsletter "**The Monty**".

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### **Metallurgical Engineer Looking For a Position**

Metallurgical Engineer Looking for a fulltime, part time or contract position in the Heat Treating industry. Skilled in metallurgical processes with more than 20 years of experience as a Heat-Treating Manager/Metallurgist/Material engineer with strong knowledge of heat treating, forging, and metal castings for manufacturing industries.

-Advanced Knowledge and experience of heat treating processes (gas and plasma nitriding, vacuum heat treating, flame and induction hardening of gears, controlled atmosphere, carburizing and carbo-nitriding, salt baths, precipitation hardening, cryogenic treatments, corrosion protection, etc.).

-Achieved certification for in house heat treating processes of Nuclear Plant products - Manage and train Lab personnel in preparing metallurgical coupons to examine heat treated (carburizing, nitriding, induction hardening and other processes) parts as per AGMA, ASTM or ASM standards.

-Establish TUS procedure as per AMS 2759 for temperature survey.

Please Email: Dan Jelescu, [d.jelescu@gmail.com](mailto:d.jelescu@gmail.com)

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## In Parting

We always enjoy comments, feedback and constructive criticism. Thanks for your feedback and don't hesitate to let us know your thoughts. Don't forget to visit us daily at [www.themonty.com](http://www.themonty.com).

**Gord Montgomery,**

W.G. Montgomery Limited

Phone: 905 271-0033

Fax: 905 271-9324

Email: [gord@themonty.com](mailto:gord@themonty.com)

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