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INTRODUCTION

We welcome you to the February 2018 issue of “**The Monty**” where everything is happy, happy, happy! Seriously these are the good times in the worldwide heat treating industry and our news items reflect the fact that things are good out there these days. We do have a plea for our readers-we are looking for surplus heat treating equipment to buy, trade or sell on consignment. As always the good times have caused their own problems the main one being that good used equipment is becoming harder and harder to find. If you have a surplus item we would be more than happy to give you a free appraisal and you can decide whether to keep it or sell it.

Warmest regards,
Gord

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HEAT TREAT NEWS

Wall Colmonoy Brazing School

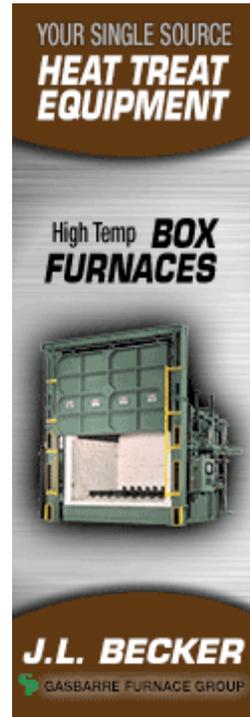
Recently we had a press release about the ambitious investment plans at Aerobraze in Cincinnati, Ohio, this announcement brings their name to the forefront yet again. "Preserving the tradition originated by the late Robert Peaslee, a brazing pioneer who invented the first nickel-based brazing filler metal, Wall Colmonoy offers a spring session of Modern Furnace Brazing School on May 15-17, 2018 at Wall Colmonoy's Aerobraze Brazing 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 experience on actual problems in brazing plants around the world. This three-day seminar offers knowledge and practical application on:

- *Brazing Design*
- *Metallurgical Aspects / Brazing Operation*
- *Brazing Atmosphere and Furnace Equipment*
- *Brazing Material Selection and Applications*
- *Quality Control*

Unlike other classroom-only seminars, Brazing School attendees will tour the facility and see



the actual brazing application on the shop floor. They will also have the opportunity to apply different forms of filler metal to supplied samples, have them vacuum brazed and discuss the outcomes. Wall Colmonoy's Leading Brazing Engineers have the technical know-how and practical experience to guide attendees through the brazing process from beginning to end production. For seminar details and registration information, contact Jim Nicoll, Marketing



Associate, at E. brazingschool@wallcolmonoy.com, T. 248.585.6400, ext. 233 or visit www.wallcolmonoy.com/brazing-school/ **January 31, 2018**

Metals Engineering Green Bay, Wisconsin

*“Metals Engineering transitions from ISO 9001:2008 to certification under ISO 9001:2015. The ISO 9001:2015 certification acknowledges the company’s robust quality system and the commitment of every associate to produce to specification, the first time, every time. The desire to achieve the highest quality standard in all that the company does has bred within Metals Engineering a culture that is focused on excellence. Company Quality Policy Metals Engineering will meet the quality requirements of our business partners through strict adherence to validated procedures, a total commitment to excellence, and a focus on improving the lives of those we serve. About Metals Engineering Since 1967 Metals Engineering has provided heat-treating services to foundries, fabrication shops, OEM’s, and machine shops located in WI and the greater Midwest. The company is family-owned and growth-focused.” **January 31, 2018***



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Polish Heat Treat Forum

Readers might have noticed the vertical banner ad on the left side of the page about the upcoming heat treat forum in Poland, the organizers have this comment to make about heat treating in Europe. **January 31, 2018**

“Two European economies have been growing quickly the past two years when it comes to heat treating; Germany and Poland. The result is full order books for several large international furnace manufacturers. Polish industry is buying furnaces which are securing and supporting its accelerating expansion, furnaces with less down time, guaranteeing 24/7 operation, always performing with high safety standards, fulfilling highest quality

expectations, following industry 4,0 requests etc. Several new commercial and captive heat treats in the country currently are under construction. In addition to that also old plants are modernizing or extending their capacities. Some of the international commercial heat treatment suppliers already existing in the area include Bodycote, Hauck, BöhlerUddeholm, Hanomag, Rübig, Technotherm, Listeman etc., and all are investing in the region (Poland, Czech Republic and Slovakia). German, American, Canadian, French, British and Italian aerospace companies and their suppliers in Poland are growing and investing in heat treatment equipment. Some German manufacturers are moving their heat treat shops to Poland, where the workforce is still much cheaper while at the same time the education level is very high. If you want to learn more about that market and its opportunities we recommend that you join the 5th edition of the Heat Treatment Forum & Expo event in Wroclaw/Poland on April, 25-26th (www.heat-treatment-forum.pl), this is the sole independent meeting of heat treaters in CE Europe.”



Advanced Heat Treat Corp. Expands Gas Nitriding/FNC Capacity in Waterloo, IA

“Advanced Heat Treat Corp. (AHT) has purchased a gas nitride unit to expand its capacity for UltraGlow® Gas Nitriding and UltraOx® surface treatment solutions at its Corporate Office and Service Center in Waterloo, IA. This new, large, state-of-the-art gas nitride/high temperature unit will also allow increased capacity of currently offered services including gas ferritic nitrocarburizing (FNC) and stress relief. Nearly 37 years ago, the company started with just two ion nitriding units at one location and has grown to over 50 units across its four locations in Alabama, Iowa and Michigan. By solving wear, corrosion and abrasion problems with their UltraGlow® family of processes, the company has grown significantly and continues to invest in the future.

“We are seeing substantial opportunity for gas nitriding/FNC applications in agriculture, construction, automotive, oil, gas and industries where corrosion resistance is imperative. The addition of this unit will also allow us to expand our UltraOx® capacity, a trademarked process of AHT that was launched in 2013 and is increasingly replacing QPQ, nickel plating, chrome plating and salt bath in many applications. We are fortunate to be able to meet customer demand and invest in the future with the addition of new gas nitriding/FNC equipment. Our commitment to quality and service has allowed us the growth to make this purchase possible, and we are truly thankful for that.” stated Mikel Woods, AHT President.

*Advanced Heat Treat Corp. (AHT) is a recognized leader in providing heat treat services and superior metallurgical solutions to companies across the globe, with locations in Alabama, Iowa and Michigan. Our UltraGlow® family of processes includes Plasma/Ion Nitriding, Ferritic Nitrocarburizing (FNC), Gas Nitriding, UltraOx® (a great alternative to QPQ/Nickel Plating/Chrome Plating), Through Hardening, Carburizing, Carbonitriding, Induction Hardening, Straightening, and many more.” **January 30, 2018***



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Business Opportunities

Please take a look at our most recent employment offerings. If you see anything you like don't hesitate to get in touch with us at jordan@themonty.com or 905-271-0033. **January 30, 2018**

Item # 0351 Technical Sales Associate
Item # 0350 Maintenance Supervisor
Item # 0349 General Manager Wanted
Item # 0348 Senior Account Manager Wanted
Item # 0347 Product Manager, Tech and Marketing Wanted
Item # 0346 Division Manager-OES (OEM) Wanted
Item # 0345 Multiple Positions Available



Solar Atmospheres of California Facility Expansion Complete

“Solar Atmospheres of California (SCA) is pleased to announce the completion of its most recent facility expansion. The new expansion allows SCA to double its current heat treating capacity on the west coast while continually striving to meet the needs of an ever growing customer base. Project expansion began taking shape in July 2016 with ground breaking for a new 25,000 sq. ft. building. Upon completion of building construction in July 2017 and, applying the lessons learned from SCA’s initial facility build in 2010-11, SCA immediately began the design, fabrication and installation of all required support systems including water and gas delivery. In preparation for the added growth, SCA has procured an additional four vacuum furnaces from sister company Solar Manufacturing (SMI) based in Souderton, PA. Additional state-of-the-art vacuum heat treating equipment includes:

SMI Model HFL-5748-10IQ-VC “High Pressure Vacuum Gas Carburizing Furnace”

- Rigid Graphite Hot Zone design measuring 36”W X 36”H X 48”Deep*
- 35” Varian Diffusion Pump for sustained high vacuum processing*
- Low Pressure Vacuum Carburizing capability*
- Operating Range: 600°F – 2200°F (Maximum Temperature 2750°F)*
- Maximum Cooling Pressure: 10 Bar (135 psig) with 300HP Gas Blower*

- *Maximum loading capacity: 7,000 lbs.*

SMI Model HFL-7472-10IQ-VC “High Pressure Vacuum Gas Carburizing Furnace”

- *Rigid Graphite Hot Zone design measuring 48”W X 48”H X 72” Deep*
- *35” Varian Diffusion Pump for sustained high vacuum processing*
- *Low Pressure Vacuum Carburizing capability*
- *Operating Range: 600°F – 2200°F (Maximum Temperature 2750°F)*
- *Maximum Cooling Pressure: 10 Bar (135 psig) with 300HP Gas Blower*
- *Maximum loading capacity: 15,000 lbs.*

SMI Model HFL-7472-2EQ “All Metal Hot Zone with Isolated Gas Quench System”

- *6-Layer All Moly Hot Zone design measuring 48”W X 48”H X 72” Deep*
- *35” Varian Diffusion Pump with “Isolated” external gas quench system for optimized sustained high vacuum processing of sensitive materials.*
- *Operating Range: 600°F – 2400°F (Maximum Temperature 2800°F)*
- *Maximum loading capacity: 15,000 lbs.*

SMI Model HCB-120288-2EQ “120”DIA X 288” Long Horizontal Car-Bottom Furnace”

- *Rigid Graphite Hot Zone design measuring 96”W X 96”H X 288” Deep*
- *Multiple 35” Varian Diffusion Pumps for sustained high vacuum processing*
- *Operating Range: 600°F – 2200°F (Maximum Temperature 2600°F)*
- *Maximum loading capacity: 150,000 lbs.*



All Solar Manufacturing furnaces are designed for high performance, low maintenance and energy efficient results. “We are very thankful for the opportunity to grow our facility,” states Derek Dennis, President, Solar Atmospheres of California. “Every SCA employee appreciates the trust and confidence that our customers have placed in our abilities to service their Vacuum Heat Treating, Brazing and Carburizing requirements. Our focus remains on providing the highest quality product with unsurpassed customer service on-time, every-time in the safest, most efficient and environmentally friendly manner. The last 6+ years of

providing vacuum processing services in Southern California have proven to be both challenging and rewarding. We look forward to working with our current customer base along with new customers in solving their heat treat challenges. SCA understands the importance we play in our customers' supply chain, especially where delivery and quality are expected. These new facility expansions will help us meet these expectations." For more information about Solar Atmospheres of California, visit us at www.solaratm.com, or contact Mike Drakeley at 866-559-5994 ext. 1303, or miked@solaratm-ca.com." **January 30, 2018**



Monday Morning Briefing

Mike Neuman/Paulo. To this Paulo Press release we can add that Mike started at commercial heat treater **Bodycote** many years ago before working as Sales engineer for furnace Builder for **AFC-Holcroft**. He knows his stuff and will do a great job for **Paulo**. "Paulo is excited to announce two additions to our team. Mike Neumann will join Paulo as the Plant Manager for the Kansas City location. The Kansas City Division serves the Automotive/Heavy Truck, Aerospace, and Railway industries and has a diverse offering of equipment including continuous belt, integral quench, salt baths, and vacuum furnaces. Mike comes to us with 20 years of progressive experience in the heat treating industry in both Sales and Operations functions. He holds a Bachelor's degree in Mechanical Engineering,



specializing in Metallurgy, from Texas A&M and a Master's degree in Business Administration from University of St. Thomas. Mike will begin on January 29th and will report to Ben



Crawford, Vice President Operations. Ben comments, "Mike's experience effectively driving innovative processing methods will enable us to increase efficiency and strengthen customer service." Kathy Neumann will join Paulo as the Director of Corporate Safety

based at our Kansas City facility. Kathy has extensive experience managing multi-plant safety programs for commercial heat treatment and traditional manufacturing companies. She holds a Bachelor's degree in Ecology and a Master's degree in Biochemistry both from Texas A&M. She also holds numerous OSHA certifications. Kathy will begin work at Paulo on January 29th and will report to Ben Crawford.

In Gibsonburg, Ohio, USA a company by the name of **Atlas Industries** auctioned off some of their surplus equipment January 23/2018. Amongst the items was a 1998 Electropuls P300/600Z Plasma Nitride Heat Treat Furnace with Automatic Parts Washing Line. Now in our experience Plasma (Ion) Ion Nitriding is not a large part of the North American market however generally when a unit comes on the market it sells pretty quickly so we were puzzled as it why it is still available. As it turns out this unit has not been used in years, needs some work and support is virtually unobtainable. This photo shows the system.



From furnace builder **SECO/WARWICK** we have this press release; "*North American Aircraft Brake Manufacturer Orders Additional Furnace to Meet Expanding Market Demand;*

Optimum quality is essential for critical carbonizing, graphitizing, CVI, and other intermediate steps in the manufacture of aircraft brakes. SECO/WARWICK offers the latest technology for aircraft brake manufacturing with a full range of equipment to meet processing and customer material handling requirements. The carbon fiber market is poised for expansion through 2018 in the United States as more applications are being developed for the aerospace, aircraft, automotive and energy markets due to the materials high strength and lightweight properties.

“SECO/WARWICK has been supplying equipment for CVI, graphitizing, carbonizing, and other process steps in the manufacture of aircraft brake materials for over 30 years,” commented Jonathan Markley, Managing Director, SECO/WARWICK, USA. “The application demands repeatable results year after year and our customers continue to rely on us to provide them robust equipment which is up to the challenge,” Markley added. SECO/WARWICK has the full range of thermal processing equipment for the manufacture of aircraft braking systems. Due to the continuous investments in the development of new technologies and in quality manufacturing, SECO/WARWICK consistently exceeds aerospace requirements, assuring the longevity and safety of the equipment supplied. Email Gary Armour for more information or visit our website at Thermal Heat Treatment.



www.secowarwick.com

Commercial heat treater **Thermex** in Edmonton, Alberta, undoubtedly the largest heat treater in the province recently ordered a new Endothermic Generator. This photo shows part of the installation process.



Where are they Now, **Mark Smith**. In the UK Mark started his career with **Ipsen Abar UK** as Aftermarket Sale Manager back in 2001. After a number of years with the company he moved on to **Vacuum & Atmosphere Services** in 2012 again as Aftermarket Sales Manager. Most recently (just a couple of months ago) he became Operations Manager. Congratulations to him. And to round things out we have this interview with Mr. **Duane Halleck** owner of **Cooley Wire Products** one of the largest fabricated basket suppliers in North America.

Duane Halleck / Cooley Wire Products.

Thanks for taking the time to do an interview with me Duane, I really appreciate it. To get things started;

How did you get your start in the heat treating industry?

"I started out as a lowly salesman for Cooley."

Can you tell us a little bit about Cooley's background and how they got started? (Where are they located, how many people work there, what products you offer. . .)

"Cooley was a mom and pop outfit with just a few a few heat treat customers and had approx 5 employees.. We purchased the business in 1986. We are still in Schiller Park IL, In 2008 we had 15 employees, in 2009 we had 6. Now we currently have about 12. Looking for a few more, anybody?, anybody?"

When I think of Cooley the first thing that jumps to my mind is baskets! Obviously you're well known for those, but what other products are big sellers for you?

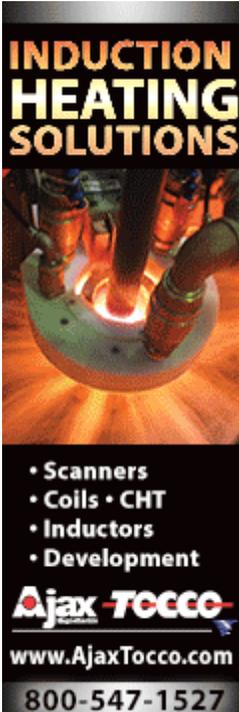
"Baskets are our bread and butter. We do have 2 looms that weave wire cloth for end customers as well as wholesalers. Looking for more wholesalers, anybody?, anybody?"

What are your biggest challenges as a company and how do you overcome them?

"Convincing potential customers that it is okay to try a new basket supplier. We are very easy to work with."

A basket's a basket's a basket is generally how most people think of a basket. Is there anything that really differentiates a basket made by different suppliers?

"Well, probably the ID tags. The ones with Cooley on them provide better stacking support."



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In my opinion basket design hasn't changed much in the past, do you see any future changes that will revolutionize how we see baskets?

"I don't see any "revolution" taking place within the immediate future."

Typically baskets are made out of 330 material, do you get requests often for more exotic materials? What's the most exotic material someone has asked you to make a basket out of?

"Everybody is looking for that inexpensive material to handle temps up to 2300F. The most exotic place we have sent a basket to is probably Puerto Rico or Australia."

Where do you think Cooley ranks in size for fabricated alloy suppliers?

"We are double the size of any competitor. Wait a minute, that's what competition is saying!"

How's business going for you so far in the 2018? Is it shaping up to be a record year?

"Shut your mouth! Don't jinx this!"

What do you think the future holds for Cooley in 5, 10, 20... Years?

*"We are just going with the flow. My crystal ball is telling us to stay the course." **January 29, 2018***



East Carolina Metal Treating

Back in April of 2017 we had this press release about East Carolina Metal Treating (ECMT); *"East Carolina Metal Treating in Raleigh, NC is making some large investments these days. The company has just ordered two gas nitriding systems from Nitrex which are*

scheduled to be installed October of this year. Each has working dimensions of 39" Diameter by 72" Deep. East Carolina is a larger than average privately owned commercial heat treater run by Jamie Ramm which offers most types of heat treating processes. We mentioned the company a few months back when they invested in a brand new batch IQ line.

As an update to this story we now have this photo of the completed installation and no surprise, it looks like a very typical, professionally done installation by Nitrex. **January 26, 2018**



Used Equipment

Please take a look at our most recent used equipment offerings. If you see anything you like don't hesitate to get in touch with us at jordan@themonty.com or 905-271-0033. **January 26, 2018**

Item # B438 Super 30 Allcase

Item # T349 Box Type Draw Furnace (1250 F)

Item # C332 Sunbeam Mesh Belt Temper (8" x 36" x 14')

Item # B437 Ipsen Recirculating Box Furnace (1400 F)

Item # C331 Lindberg Pusher Furnace (1,415,000 BTU/Hour)

Item # T348 Car Bottom Tempering Furnace (1250 F)



Inductoheat, Madison Heights, MI

If you have ever had anything to do with induction heating chances are you have run across Inductoheat which is part of the Inductotherm Group, a group which includes over 40 companies with 38 manufacturing facilities in 19 countries. The group includes names such as Inductotherm, Inductoheat, Thermatool, Radyne and Consarc with the entire group being privately held which is rather unusual. Last week we visited Inductoheat in Madison Heights, Michigan for a very interesting tour of what proved to be a top notch manufacturing facility which included a large R & D lab with over a dozen operating induction systems, a very impressive metallurgical lab, machine assembly and induction coil manufacturing and repair including 7 CNC centers. It is worth noting that while our interest in Induction largely starts and stops with heat treating Inductoheat offers equipment for heat treating, forging, shrink fitting, pipe full body and end heating and other applications using low, medium and high frequencies. We are hoping to be able to offer you an interview with the CEO of the company Mr. Gary Doyon in the near future but for now we will leave you with these photos. *January 25, 2018*



Doug Brown, President & COO Inductoheat, Gord Montgomery



*Gord Montgomery, Dr. Valery Rudnev, Group Director Science & Technology, Tim Boussie,
Technology Manager*



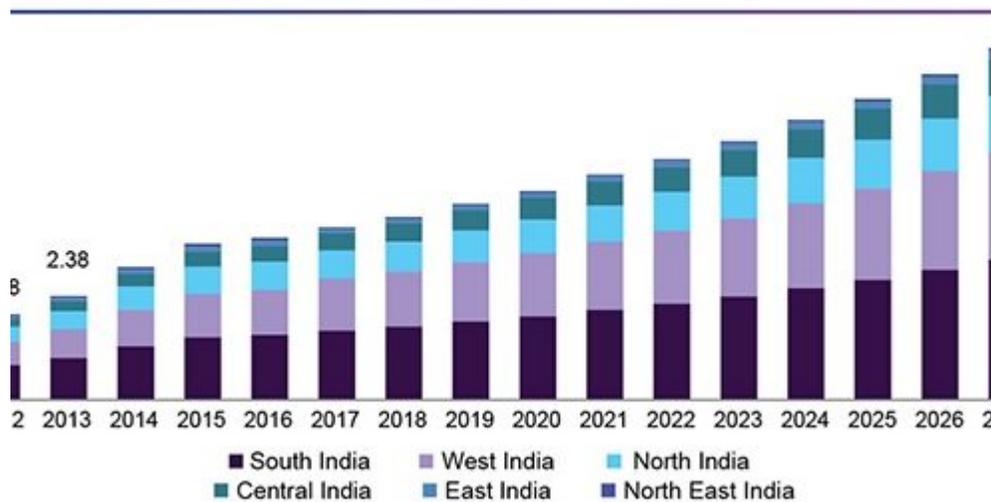
Indian Heat Treat Market

Just a couple of weeks back we talked about the size of the North American heat treating market as part of our story about the largest captive heat treaters in North America (the item can be found in our articles section). Well according to some outfit by the name of Grand View Research the Indian market is expected to reach \$8.37 Billion by 2027 as opposed to the current size of roughly \$4 Billion. This compares to an estimated size of roughly \$20 Billion for the US market. This is a brief summary about what the report has to say; *January 24, 2018*

“The India heat treating market was valued at USD 3.80 billion in 2016 and is expected to expand at a CAGR of 7.5% from 2017 to 2027. Market growth can be attributed to rapidly-expanding industries such as automotive and aerospace. Steady GDP growth and progressive economic performance of the country has attracted significant foreign investments in end-use industries such as automotive and aerospace. This has encouraged various players from the international market to reinforce their presence in India. Penetration of energy-efficient and green technologies is projected to open new avenues in the market, providing local vendors potential to compete with international players. In terms of revenue, the automotive application segment accounted for 50% of the India market in 2016, followed by aerospace. Prospective growth in the automotive industry has created lucrative opportunities for players. By process, the case hardening segment is expected to witness the highest CAGR of 8.2% over the forecast period on account of increasing adoption of carburizing over traditional hardening process. South India and West India are anticipated to be the most lucrative regions in the India heat treating market. Key players in the Indian market include Unitherm Engineers Limited, HighTemp Furnaces Limited, Deck India Engineering Pvt. Ltd., Sourabh Inductotherm, and AFECO Heating Systems.”

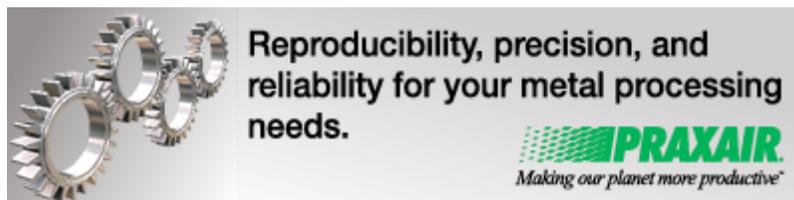


India heat treating market, by region, 2012 - 2027 (USD Billion)



Bodycote confirms European expansion in hot isostatic pressing

“Bodycote, the world’s largest provider of heat treatment and specialist thermal processing services, is pleased to announce that its Sint Niklaas, Belgium, Hot Isostatic Pressing (HIP) location will take delivery of a new “Mega-HIP” unit which will be operational by the end of 2018. The new high pressure, high temperature Mega-HIP is Nadcap capable to meet the growing demand of the European aerospace market over the next five years and beyond. This investment will significantly increase Bodycote’s Nadcap HIP capacity globally, in addition to the substantial increase in Nadcap capacity which Bodycote completed in 2017. These recent investments highlight Bodycote’s commitment to expand its global HIP capacity to meet market requirements. Bodycote operates the world’s largest HIP equipment network and continues to invest in recognition of growing demand for HIP technology. Having established HIP expertise over several decades, Bodycote has over 50 HIP vessels of varying sizes in multiple locations. Processing capability can accommodate components which are nominally up to 2m diameter by 3.5 m high; and weighing 0.1kg to over 30,000kg. In addition to standard quality and environmental accreditations, Bodycote’s HIP facilities also hold ASTM and NORSOK accreditations.” January 24, 2018



Cooper Heat Treating

Part of our Monday morning briefing yesterday included a story about Cooper Heat Treating in Detroit, Michigan adding a great deal of FNC capacity which prompted us to put together a summary about the company. Originally Cooper Heat Treating was part of RMT Woodworth one of the largest commercial heat treaters in North America. Back in 2013 Matt Cooper bought the location on Sherwood Street in Detroit and the company was renamed Cooper Heat Treating. The company has thrived under the direction of Matt and with roughly 30 employees offers gas nitriding, vacuum heat treating and FNC processing.

As we speak Cooper is in the midst of a large investment which includes the FNC units we mentioned yesterday, updated controls a brand new lab, completely remodelled offices and the addition of some brand new ancillary equipment. The photos below show the plant now-in 6 months when all the investments are complete we will show you the before and after photos. *January 23, 2018*



Solar Manufacturing Press Release

“Solar Manufacturing Incorporated, an industry leader in manufacturing advanced industrial vacuum furnaces, is relocating its headquarters to Sellersville, Pennsylvania. The Sellersville Borough Council recently granted unanimous preliminary and final approval for the new building located on a combined 8.5 acres of Lots #5 and #6 on East Clymer Avenue, Sellersville, PA 18960. The manufacturing area will occupy 40,000 square feet of the facility with an additional 17,500 square feet of office space. There is the option of an extra 22,500 square foot addition to the manufacturing building in the future.

“I am thrilled to see this project moving forward for our new headquarters. This new facility will provide us the space we need to grow and consolidate all our staff in one facility,” said William Jones, who along with his wife, Myrtle Jones, owns Solar Manufacturing, Inc. Gorski Engineering is scheduled to begin breaking ground for the new eight million dollar facility in the spring of 2018, with completion and occupancy later that fall. According to Jim Nagy, President of Solar Manufacturing, “Our most



important customer is our sister company, Solar Atmospheres of Souderton, PA, with additional plants in Hermitage, PA, Fontana, CA, and Greenville, SC. Solar Atmospheres operates over 60 production vacuum furnaces, with additional large production vacuum furnaces on order for commercial vacuum heat treating applications.”

Solar Manufacturing employs 50 persons and produces technologically advanced vacuum heat treating furnaces designed and built to be the most energy efficient, cost effective, and highest performance vacuum furnaces for the aerospace, medical, electronic, and industrial markets throughout the world. The furnaces are intended primarily for metal heat treating processes such as hardening, brazing, stress relieving, normalizing, annealing, tempering, carburizing, nitriding, and sintering. For more information about Solar Manufacturing, please contact Pete Reh at 1-267-384-5040 x1509, or via email pete@solarmfg.com and visit us at www.solarmfg.com.” January 23, 2018



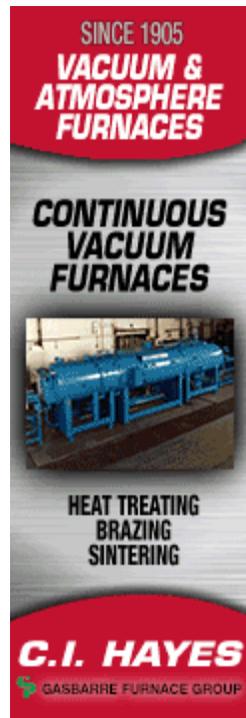
Monday Morning Briefing

Our first “tidbit” comes from **Cooper Heat Treating** in Detroit, Michigan, USA. Cooper was part of commercial heat treater RMT Woodworth before it was sold to Matt Cooper back in 2013. The plant has always done well and recently the decision was made to vastly increase their FNC capacity. What you see in this picture are a number of pit **FNC** furnaces

which will be in production mid 2018. Later this week we will have a complete profile of the company with a few more photos. **January 22, 2018**



Bodycote in Rzeszow, South East Poland received Pratt & Whitney Canada approval for heat treatment processes December 2017; *“Bodycote the leading provider of heat treatment and specialist thermal processing services worldwide, is pleased to announce that it’s facility in Rzeszow received an approval for heat treatment processes from aircraft engine*



manufacturer Pratt & Whitney, Canada on December 22 2017. Located close to Rzeszow airport the facility offers the capacity for vacuum gas quench furnaces for heat treatment and vacuum brazing as well as gas nitriding.” It is a very interesting story behind this news item, one which shows how the world has changed. A number of years ago the **Pratt & Whitney** plant in Longueil, Quebec, Canada set up a manufacturing facility in Poland to take advantage of the very low labor costs. Canadian heat treater **Vac Aero** was selected to do the heat treating and set up a facility close by. *(Vac Aero exited the Polish market a couple of years ago when they sold their plants to a company by the name of MB Aerospace).*

About the same time, June of 2015 to be exact **Bodycote** set up a really nice plant in the same area. Obviously **Bodycote** has been successful in taking over at least part of this business. **Inductoheat** is a very well known name all around the world when it comes to Induction Heating.

Recently we visited their facility in Madison Heights, Michigan and were fascinated by the facility. We will be profiling the company and offering a number of photos of the plant but in the meantime we will present this photo of the management team of the company. From the left we have; **Gary Doyon**, President/CEO Inductotherm Group, **Doug Brown**,

President/COO, **Gord Montgomery**, **Dr. Valery Rudnev**, Group Director and **Tim Boussie**, Technology Manager.



In people stuff we have these notes; **Roberto Pancaldi** is now Tenova Metals CEO, effective Jan. 1. Pancaldi joined the Techint Group as a process engineer in 1988 and has spent his entire career in Techint and Tenova. He has held various positions of in different functions and business units of the Metals Division, contributing actively to the development and expansion of the company. *“Wall Colmonoy is pleased to announce the appointment of **Ed Mohrbach** as VP Finance & Operations. Ed Mohrbach joined Wall Colmonoy in January 2017 bringing with him extensive experience in the industrial segment with leadership roles in Sales & Marketing and General Management. In the last 13 years, Ed was President of the PCS Company, a manufacturer and distributor of products within the Plastics Industry. At Wall Colmonoy, Ed will work closely with management of all domestic divisions – Alloy Products, Aerobrazo and Franklin Bronze Precision Components, LLC., to drive profitable sales growth through the ongoing development and refinement of their respective business strategies and tactical programs.”* **Juliene A. Britz** has been named president of **Industrial Gas Engineering Co.** Inc. She is the third generation to run the family-owned business. IGE is best known for their furnace fans.

Swiss furnace builder **CODERE SA** starts off the year with a healthy backlog. In the last three months of 2017 the company has been very busy with 6 new orders and they also have existing orders for Russia, Israel, Germany, Switzerland and Taiwan under construction. It was the end of the line for gear manufacturer and captive heat treater **Northstar Aerospace** in Milton, Ontario, Canada last week. We certainly mentioned this closing when it was first announced but last week the remaining equipment (*that which didn't go to their facility in the Chicago area, items which included a Surface endo*

generator, AFC-Holcroft rotary hearth furnace and several Gleason press quench systems) was auctioned off. What remained were a couple of freezers, some old Despatch ovens and some other odds and ends.

And to round things out we see that **AWT** in Germany is hosting a **Nitriding and Nitrocarburizing European Conference on Heat Treatment** April 12/13 in Friedrichshafen, Germany. AWT does a pretty good job on these events and we would expect that they would do so again. This is what they have to say; *“For almost a century, nitriding and nitrocarburising have become established thermochemical heat treatment methods for surface hardening of iron-based steel grades. They enrich the surface layer with nitrogen and, in the case of nitrocarburising with the addition of carbon. Nitriding and nitrocarburising are environmentally compatible and exhibit very little distortion, in contrast to martensitic hardening processes. Primary applications are able to reduce wear and to increase strength. In recent years these surface hardening processes have been stimulated by new know-how and continuous innovations. New applications aiming at saving energy and other resources through the use of recyclable lightweight construction, as well as applications where toxic chromium (VI) compounds, used for corrosion reduction, could be replaced by post-oxidation show impressively how up-to-date these processes are.”*



Are You Getting Paid What You Are Worth?

Monday of this week we alluded to the fact that we were looking forward to an article about what heat treaters in the commercial arena get paid. The result is this really top notch article from **Josh Hale** of **International Search Partners** a company we would certainly recommend. **January 19, 2018**

“Although job descriptions can vary quite a bit between companies and salaries are subject to regional adjustments, this should give a fairly accurate representation of the current market-value for most commercial heat treating positions. An important note: compensation

packages in the heat treat industry have advanced rapidly over the past few years. As the labor market has tightened, companies have had to increase wages to attract the resources necessary to run a successful operation. In many cases, the employer is offering non-cash incentives as well, such as more vacation time, the ability to work from home and profit sharing or bonus programs. Next month, we will provide a salary guide for OEMs.

General Manager: Some GMs have Plant Manager responsibilities as well, but for our purposes, we'll assume not. The GM is more the outward "face" of the company and typically does not get overly concerned with tactical day-to-day issues in the plant. Rather, the GM focuses on dealing with customers, addressing any emergency issues that arise and is



ultimately responsible for managing the P&L of the plant. A good GM is worth his proverbial weight in gold. Salaries for experienced GMs start at \$110k minimum and can exceed \$160k+. Sometimes, GMs are also incentivized with equity and/or performance bonuses.

Plant Manager: PMs are responsible for the day-to-day operation of the plant and oversee all employees, either directly or indirectly. The PM will usually not have P&L responsibility, but will manage and oversee all other functions of the plant. PM salaries range from \$90k up to \$125k or more and typically also offer performance bonuses.

Plant Metallurgist: Metallurgists will sometimes also act as the Quality Manager and/or Lab Manager. The Plant Metallurgist's main responsibility is over the various processes within the plant. Compensation for metallurgists varies wildly depending on experience, but for a non-manager, salaries will usually fall in the \$75-95k +/- range.

Quality Manager: Sometimes a Metallurgist will fill this role, but more often it is a non-degreed person with hands-on experience who has risen through the ranks. They will typically supervise a staff of quality technicians and will run the quality department and usually oversee audits. Sometimes, they will also have lab responsibilities. Salaries for experienced Quality Managers are between \$70 and \$90k, but can easily creep into six-figures if they will be supervising a large staff or have extensive audit knowledge.

Sales Engineer: Two types of compensation plans are prevalent for sales. One type of plan is salary only, commensurate with experience. The other is salary plus commission or bonus. As is the case for OEMs, compensation depends on how collaborative a sales effort the company

uses, if independent reps are involved and the philosophy and preference of the company. For a salaried Sales Engineer, you can expect base pay of \$75-100k, plus car allowance/company car/mileage. For a commissioned Sales Engineer, the base may be closer to \$55-75k + whatever commission is earned and car allowance/company car/mileage. Compensation plans for sales can be complex and we will provide an in-depth analysis of how sales professionals are incentivized in a future article.

Maintenance Supervisor: A case could be made that Maintenance is the most important role within any heat treat organization. Without a good preventative maintenance plan and good repair capability when furnaces do go down, a commercial heat treater is out of business. Most of the time, Maintenance Supervisors are non-degreed professionals who have worked their way up from an hourly position on the floor. Over the past 2-3 years, there has been an uptick in demand for qualified Maintenance Supervisors and salaries have risen as a result. Whereas 7-8 years ago, many Maintenance Supervisors were earning \$40-50k, we now see salaries nearing six-figures, especially when overtime is considered.

VP/Furnace Operator/Other: This is obviously not an exhaustive list of positions within a commercial heat treater, but covers most of the middle management roles. VPs were intentionally left out because compensation can differ so much at the higher levels depending on the company, region and equity or bonus packages. Hourly Furnace Operators are always in demand, and while they sometimes don't require much experience and are trained in-house, we often see knowledgeable furnace operators not only running equipment, but also providing quality control checks and resolving minor maintenance issues. Wages for furnace operators can be around \$13-17/hour with overtime, but can stretch to \$25/hour for someone with extensive experience and lead responsibilities.

If you have questions about any specific position, please feel free to contact us at info@ispards.com. For over 20 years, ISP has been the premier recruiting solution for the Heat Treat industry. The salary information provided is based on information gathered over that time and from interviewing 500+ industry professionals per year. If you're hiring now, or exploring new opportunities for yourself, we are uniquely positioned to be your partner for success and would love to work with you. Please contact us at info@ispards.com or 619-465-9621."

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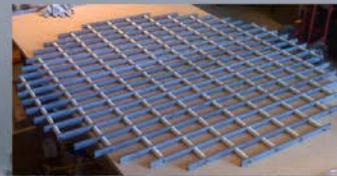
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Good People Are Hard To Find

Never has this statement been more true of the heat treat industry than it is today. When you take an industry getting closer to capacity each day, combine it with an aging workforce and throw into the mix the fact that the heat treatment industry is not a high profile industry attracting a lot of young talent you end up with what we have today-a real shortage of good experienced people. We hear this from captive and commercial heat treaters around the world but in particular in Japan, Western Europe and North America- obviously the areas with aging populations. Just below you will see that *"The Monty"* has added a new job position and this is one of the harder ones to fill, that of a good experienced Maintenance Supervisor. While a number of areas have a real shortage of good people our experience tells us that the positions hardest to fill are; Sales, Maintenance, Quality and Furnace Operator. Metal Treating Institute (MTI) has a good program for training people but they are one organization trying to fill a very large void. Quite frankly we don't see this shortage having an easy solution. **January 18, 2018**

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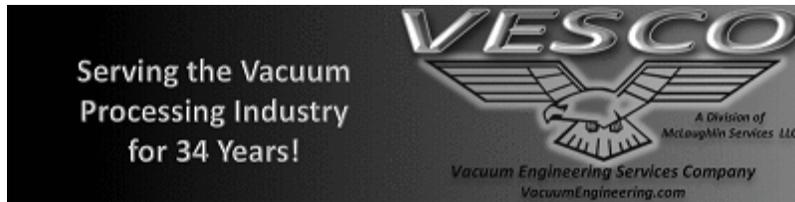
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Nitriding of Gun Components

We spent some time with a good friend of ours this past weekend who will be exhibiting his Nitriding capabilities at an upcoming gun show in the US.

Kind of co-incidentally we came across this press release about how a manufacturer in the US is promoting nitriding of their Glock handgun components, a benefit which we are sure 99.9% of gun buyers couldn't care less about. However it is interesting how the nitriding process has had such an influence on such varied components which leads us once again to say that we would consider all forms of nitriding to be the fasting growing sector of the heat treating industry. To go along with this news item we have this photo of the heat treating department at handgun manufacturer "Glock".

"Arizona based Patriot Ordnance Factory has entered the Glock market with their G-Series Gentlemen's Slides. Machined from 17-4 stainless steel, with a nitride heat treat finish and a Trijicon RMR Red Dot Plate with cover and mounting hardware, they bring the company's stylish looks to the world's most popular handgun. There are two sizes available to fit Glock 17's and 19's, Gen 3 and 4. There is also the option of putting date codes on the slide." January 17, 2018



Is the Heat Treating Industry Healthy?

Commercial heat treater Bodycote is the only truly global commercial heat treater and we often consider that how the company is doing to some extent reflects how the overall heat treating industry is doing. If the share price of the company is any indication the industry is doing quite well as their share price hit a record high today breaking 1,000 pence which is quite a feat. Our personal observation is that almost all commercial and captive heat treaters around the world are doing well and this reinforces our opinion. *January 17, 2018*



10 Largest North American Captive Heat Treaters

Before we get into the 10 Largest Captive North American Heat Treaters lets have a look at the size of the overall market. It is generally accepted that the total size of the heat treating market in the US for both captive and commercial heat treaters is in the neighbourhood of \$20 Billion USD per year with commercial heat treating accounting for about 10% or \$2 Billion per year. This compares to a worldwide estimate of \$89 Billion USD by 2020 (Source Technavio research) with an estimated breakdown of 32% aerospace, 30% automotive, 15% industrial and others 21%. We stress that all of these numbers are at best educated guesses given the fact that most studies can't even seem to agree on what actually constitutes heat treating and at worst they are nothing more than a dart thrown against a wall. *January 16, 2018*

However lets take these numbers as a given and look at the total size of the North American market. If the US market is \$20 Billion per year the Canadian market is approximately 6% of this value or \$1.2 Billion per year (and shrinking) and the Mexican market approximately 15% or \$3 Billion per year for a total of \$24.2 Billion USD per year (source WG Montgomery Ltd.).

Given this background and Technavio's estimated market breakdown we can say that the largest captive heat treaters in North America will be found in the aerospace, automotive, heavy equipment or agricultural industries (*before we go any further we should say that*



when we say heat treating this will include vacuum, atmosphere, induction and aluminum heat treating. It will also include all of a company's locations in North America which have in house heat treating). **GM, Ford** and **Chrysler** would have generally been considered to be in this group but we do not believe this to still be the case. Granted GM has over 40 vacuum carburizing cells in their North American plants, Ford has a mammoth VC installation at their Sharonville, Ohio, Transmission plant and Chrysler's transmission plants in Kokomo, Indiana are amongst the largest in-house heat treats under one roof in the world but by and large a large amount of the "Big Three's" heat treating has been out sourced over the past 10 years. The heat treating was of course outsourced when their parts were outsourced, American Axle & Manufacturing, Magna, Linamar and Dana are all good examples of companies which has benefited from this outsourcing and correspondingly increased their

heat treating capacity.

After considering a total of some 30 suggestions, the list of 10 below are those whom we would consider to have the largest in house heat treating capacity in North America. (*please note that while we give a brief indication of what type of heat treating each company does but this certainly does not mean that they are restricted to this type only*). The first 9 are alphabetical with our suggestion for the largest in North America, heavy equipment manufacturer **Caterpillar** based in Deerfield, Illinois in the final position.

American Axle & Manufacturing-atmosphere heat treating

Dana Incorporated-atmosphere, vacuum carburizing

John Deere-nitriding, atmosphere heat treating

Linamar-vacuum carburizing, induction, atmosphere

Pratt & Whitney-vacuum heat treating

Precision Cast Products Corp. (PCC)-vacuum heat treating, atmosphere

The Timken Company-atmosphere, induction

Schaeffler Group-vacuum, austempering, atmosphere

ZF Company-atmosphere, vacuum carburizing, austempering

Caterpillar- the worldwide manufacturer of heavy equipment is in our opinion the largest captive heat treater in North America with most types of heat treating processes being available in house.



Rotor Clip Buys AFC-Holcroft Batch Line

“Rotor Clip, a global manufacturer of retaining rings, wave springs and self-compensating hose clamps, has purchased a complete AFC-Holcroft batch carburizing and austempering line. The full line consists of a UBQA (Universal Batch Quench Austemper) furnace, a washer with transfer pump, temper furnace, transfer car, scissor lift table and stationary table, all provided by AFC-Holcroft. The UBQA furnace is designed for neutral hardening, austempering, and other heat treating processes where a controlled environment is required during the heating and quenching portions of the cycle. Parts subjected to the austempering process are shown to have improved mechanical properties such as strength and toughness along with improved dimensional control during processing. Rotor Clip is headquartered in Somerset, New Jersey (USA), with locations in Europe and Asia. “Rotor Clip has been a long time customer of AFC-Holcroft” stated Ron Graham, Sales Engineer at AFC-Holcroft. “We are pleased that they entrusted us with this project to expand their heat treatment capabilities.”

About Rotor Clip: Rotor Clip is celebrating its diamond anniversary this year, having opened its doors 60 years ago in Framingdale, New York. The company continues to strengthen its position as a global supplier of its product line to automotive, industrial, aerospace, oil and gas and medical companies. Today, Rotor Clip products are found in components such as ABS brakes, air conditioning compressors, and steering gears to electric vehicle assemblies and medical equipment.

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.

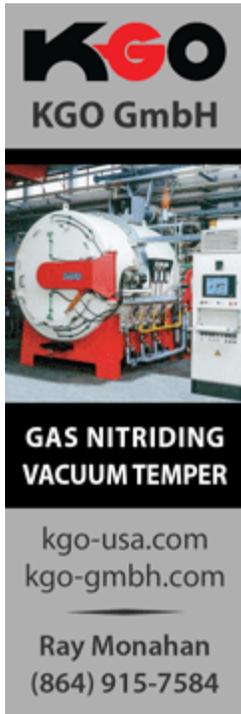
About AICHELIN Holding: The AICHELIN Group, as part of the BERNDORF Group of companies, is a manufacturer of industrial furnace equipment for different industry segments and provider of after-sale services. AICHELIN Group also operates in the field of induction heating and in the manufacturing of industrial 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." January 16, 2018



Monday Morning Briefing

Remember this news item from Dec. 12/2017? Well we have more details for you now-we start with our original news item and below it we have the updated details. **“Rex Heat Treat**Expansion; With 3 locations, Lansdale, PA, Bedford, PA and Aniston, Al Rex is one of the largest family owned commercial heat treaters in North America and is now into it's third generation. Rex offers most commercially available processes including vacuum heat treating, carburizing, Nitriding, austempering, marquenching and a host of other processes. With that background out of the way we move on to the reason why their name comes up today. The bland news summary below tells us that Rex is in the process of making a very large investment into their original location Lansdale but it doesn't give many details. For the time being this will have to suffice but we can say we are looking forward to a very interesting

press release from the company in the very near future. Lansdale Officials have signed off on financing that will allow Rex Heat Treat on West 8th street to expand its operation in the Borough. The four million dollar bond is being issued by the Souderton Industrial Development Authority and will be used by the company to acquire equipment needed for a new product line.



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January 14 Update; **Rex Heat Treatment** has purchased a 15 Bar Vector® vacuum furnace from SECO/VACUUM Technologies for their commercial heat treating facility located in Lansdale, Pennsylvania. “We selected the Vector systems because of the versatility of the equipment and its ability to handle a wide variety of applications and part processing,” stated **Johnathan Rex**, General Manager. “In order to better serve the greater Philadelphia heat treating market, we created a newly upgraded climate-controlled vacuum heat treat bay, specifically to house the new equipment and efficiently manage customer orders,” he added. The equipment was purchased for processing components for customers involved with tool and die, aerospace, and gears, however due to the broad range of materials and processes available with the Vector system, Rex Heat Treat expects to expand their operation with this investment. “We welcome Rex Heat Treat as our technology partner and

welcome the opportunity to provide cutting edge technology and professional technical services to a leader in commercial heat treating,” said Bill Warwick, vice president of sale for SECO/VACUUM.

The Vector single chamber vacuum furnace is the most popular gas quenching vacuum furnace design in the industry. The Rex Heat Treat system will be used for through hardening, tool and die steel processing, high temperature solution nitriding, annealing and vacuum tempering. The Rex Heat Treat furnace will be equipped with patented PreNitLPC® and FineCarb® technologies for low-pressure vacuum carburizing for increased productivity via faster cycle times and higher processing temperatures. The furnace will be equipped with a 15 Bar and 6 Bar argon quench for greater versatility. This configuration is ideally suited for processing automotive, defense, aerospace,



and tool & die steel components. The new system is scheduled for delivery by the end of the first quarter, 2018.

Where are they now? **Tim Coe**. Tim was a manufacturers rep on the US west coast for a number of years repping for companies such as Dibalog the German energy optimization firm. He left the rep business some time ago to be Sales Manager for **PVA TePla America Inc.** a provider of plasma nitriding furnaces. It looks like Tim has now made a complete change and is working for a company by the name of Sunstone Real Estate Ventures which would appear to have nothing to do with heat treating. And speaking of changes over in the UK we see that **Stewart Griffiths** who used to be a Project Manager at commercial heat treater **Hauck** is now a Product Specialist at **Fluke Process Instruments** which is a real change of direction. **Can-Eng Furnaces** of Niagara Falls, Canada is keeping busy as are most of the new furnace builders. The company recently landed a repeat order from a customer in the Carolinas for a roller hearth annealing furnace.

Upcoming news items from "The Monty". Later this week we will put together our final list of the **largest captive heat treaters in North America**. Not for a second do we claim this will be 100% accurate as there are so many variables involved-for instance what types of heat treating do you include? Aluminum heat treating? Induction heat treating? Stress relieving? In spite of these obstacles we will be making our suggestions this week. **Are you getting paid fairly for your job?** We are expecting that later on this week we can give you an idea about what positions in the heat treating industry are worth whether you are a plant manager, GM, metallurgist or furnace operator and this information will come from the company in our industry that knows better than anybody else. These stories will be combined with several interesting interviews and our usual collection of news about the Heat Treat Industry. **January 15, 2018**



Breaking News from Ipsen

“Ipsen USA Finishes Q4 2017 Strong with Multiple TITAN® Vacuum Furnaces Shipped; CHERRY VALLEY, IL – With a strong fourth quarter finish, Ipsen USA continues to provide heat-treating solutions to customers worldwide. Recently, 15 furnaces shipped to eight states in the United States, as well as Asia and Europe, to support customers in Additive Manufacturing, Aerospace, Commercial Heat Treating, Medical and MIM industries. The shipments included:

- *Nine TITAN® vacuum furnaces, including three TITAN DS (debinding and sintering) units, two TITAN LT (low temperature) units and several H2- and H6-sized furnaces, all equipped with PdMetrics® predictive maintenance software.*
- *Three horizontal MetalMaster® vacuum furnaces, each with a work zone of 36" (910 mm) x 30" (762 mm) x 48" (1219 mm) and load capacity of 2,000 pounds (907 kg).*
- *Two horizontal TurboTreater® furnaces.*
- *One vacuum aluminum brazing furnace with a 1500-pound (680 kg) load capacity and an all-metal, radiation-shielded hot zone for the Aerospace industry.*

Several of these customers also took advantage of Ipsen’s support offerings such as Ipsen U training, spare parts kits, installation and startup assistance. A few furnaces shipped to repeat customers and one customer received two furnace orders. To best support such diverse industries and needs around the world, Ipsen’s Global Support Team facilitates system installations, as well as provides expert training, startup assistance and 360° support throughout the entire lifespan of the equipment. Visit www.IpsenUSA.com/Products to learn more about the equipment options Ipsen offers. Contact your Ipsen representative today to discuss your needs at www.IpsenUSA.com/Map.” January 12, 2018





Why Rebuild Vacuum Pumps?

From Mr. Mike Mercer of The Mercer Group – Mercer Technologies Inc., we have this technical article about vacuum pumps.

“A Rotary Piston Vacuum Pump has many moving parts. Similar to the four stroke engine, rotary piston pumps use the principle that a reciprocating piston draws fluid or gases inside the cylinder when it retracts into the piston bore and then discharges the fluid or gases when it extends. The top photo below shows the piston/slide, eccentrics, hinge bars, and main shaft. The second photo below shows the valves. These parts run in an oil bath including the shaft bearings that are recirculated through the pump.”



These surfaces wear over time and require replacement or machining to return the pump to the factory specifications and peak efficiency. The top half of the photo below shows the exhaust valves and oil mist separator. The valves and springs require regular service every 6-12 months.



When the pumps run, the overall efficiency and thru-put diminishes. Degradation is a slow process and generally goes unnoticed until there are excessive pump down times, ultimate vacuum levels cannot be achieved or bearing failure occurs. Regular service and maintenance is imperative to the operation and life cycle of a vacuum pump. Oil changes should be determined based upon processes being run. For example: 30-60-90 day intervals. Join us next month when we discuss Booster Pumps. Midwest Vacuum Pumps is the nation's leading vacuum pump repair facility. Specializing in rebuilding, refurbishing, and repairing brands such as Agilent, Edwards, Roots, and Stokes. Midwest Vacuum Pumps also stocks vacuum pump replacement parts and offers a one of a kind vacuum pump exchange program minimizing the downtime clients feel when pumps need to be rebuilt. For more information please call 812-466-0440 or visit our website www.midwestvacuumpumps.com” **January 12, 2018**



Ramada Aços/BMI

Recently we had a press release from French vacuum furnace builder BMI about a new concept they had for saving on energy-basically the idea is two vacuum furnaces sharing a common vacuum pumping system. Our take on it was that this is a very good or a very bad idea. As it turns out the system is installed and in use at a company called Ramada Aços in Portugal who is a steel service centre offering several heat treating processes, a very similar concept to what better known Bohler Uddeholm does. **January 11, 2018**

“Ramada Aços has developed the concept of the “Twin Ovens” in partnership with BMI Fours Industriels, with the first furnaces already operating at our facilities. BMI and Ramada Aços are long-standing partners in the continuous improvement of Thermal Treatment equipment, essentially aiming at technical capacity and reducing operating costs. In this sense and going against the process of installing new equipment and renovating other older ones in our

production unit in Ovar, Ramada Aços participated actively in the “birth” of the first twin ovens. The idea behind this equipment is that they work with an integrated energy management system, with only one vacuum pump for both ovens. This solution allows a reduction of the consumption of electrical energy, as well as of the costs of maintenance. It is also planned to integrate, in this system, a third furnace further enhancing the defined objectives. The first twin ovens have a capacity of 800kg each, useful dimensions of 600x600x900mm and temperature of use up to 750°C. In this way, in addition to improving the energy efficiency of our activity, we have increased our furnace capacity by 14%, increasingly meeting our clients’ expectations and needs.”



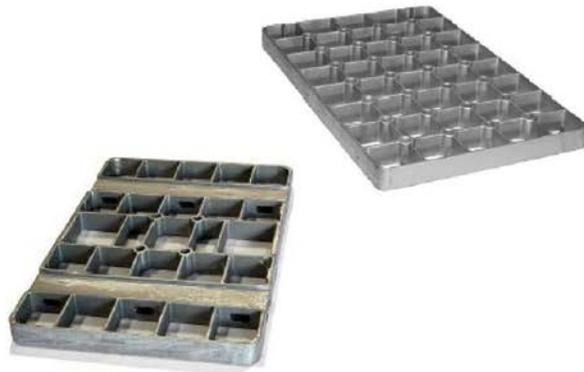
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² Applies to standard design trays only. Some restrictions apply.

Where Are They Now-Walt Paluch.

Walter Paluch formerly of GKN and New Process Gear (Syracuse, NY) has taken a NEW position with FEV in Auburn Hills. His New Position will be to assist in the development and savings in heat treat cycle activities for various auto makers and cost savings projects. He will be located at their Rochester Hills, Michigan, USA location. **January 11, 2018**



Bodycote, Surahammar, Sweden Achieves NADCAP Accreditation

“MACCLESFIELD (U.K.) — Bodycote, the world’s largest provider of heat treatment and specialist thermal processing services, is pleased to announce that its Surahammar, Sweden Hot Isostatic Pressing (HIP) location has earned its Nadcap accreditation. The Surahammar site has been producing Powdermet® Near Net Shape (NNS) and Selective Surface Net Shape (SSNS) components for many years, using its long experience of manufacturing complex, high integrity components from powder metal to serve markets such subsea, oil and gas, marine, nuclear, tool steel and automotive.

Bodycote HIP now has nine Nadcap-accredited sites globally positioned to serve the world’s aerospace prime manufacturers and their first tier suppliers with additional HIP capacity to meet the demands of the future growth in the new aircraft programmes over the coming years. Bodycote HIP serves clients globally operating in markets as diverse as medical; power generation; marine and electronics with both HIP services and Powdermet® technologies. The recently launched Powdermet® technologies incorporate new, patent-pending techniques that combine 3D printing with well-established net shape and NNS techniques. This new technology dramatically reduces the manufacturing time and production cost of a part compared to producing the same part using 3D printing alone. Bodycote operates with the world’s largest network of HIP equipment and continues to invest

recognizing the growing demand for HIP technology. Having established industry expertise over decades, Bodycote has more than 50 HIP vessels of varying sizes in multiple locations. Processing capability can accommodate components which are nominally up to 2m diameter by 3.5 m high; and weighing 0.1kg to over 30,000kg. In addition to standard quality and environmental accreditations, Bodycote's HIP facilities also hold ASTM and NORSOK accreditations.

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" January 10, 2018



Bodycote NEWS RELEASE

Heat Treat Equipment Appraisals

“The Monty” is pleased to be able to offer another service to our readers, free appraisals of your surplus heat treat equipment. On the right hand side of this page you will see a vertical banner ad offering this service, simply click on it and send us some details about what you have along with a few pictures-we will be happy to give you a good idea about what your equipment is worth and how long it will take to sell. In the interest of

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being completely forthright we will add that there will be a charge if you want a 5 page written report, if you want a good, experienced brief idea about the value-no charge! *January 10, 2018*



People “Stuff”

Felipe Salas who was Global Sales Manager HIP PF for **Bodycote** recently left the company. Felipe was based in Vasteras, Sweden and had spent 10 years with the company before deciding he wanted to start a new chapter in another industry. It is actually quite unusual for individuals to leave the heat treating industry after they have been in it for a while. **Mike Hamilton** has retired from **Great Lakes Process Controls**, in Noblesville, IN. Great Lakes is a manufacturers rep firm selling for controls companies such as Yokogawa which means the company has a high exposure in the heat treating industry. **Andy Teets** will be taking over for him. **Dylan Kale** who was involved with the heat treating department at **Cornell Forge** in the Chicago area recently left the company. Cornell is a family owned forging company. **Al Fiorentino** who was with **SKF** in Georgia recently retired. Bearing manufacturer SKF is one of the largest captive heat treaters in North America and will probably be mentioned on our upcoming list of the largest captives on the continent. **Tyler Hostetler** who was a Metallurgical Engineer at **Parker Trutec** in Springfield, Ohio is no longer with the company. Parker Trutec is the North American division of **Nihon Parkerizing Co., Ltd.**, of Japan and has 6 locations in the US and Mexico offering various heat treating and surface finishing processes. While they very much concentrate on the Japanese auto companies they also work with US firms. *January 9, 2018*



Parker Trutech

Good Things are Coming to Aerobrazed Engineered Technologies

Based in Cincinnati, Ohio Aerobrazed Engineered Technologies is looking at some big, impressive changes which we will be announcing over the next few months. The first change we see is that Mr. Noel Davis is the new General Manager and he brings with him a wealth of experience. **January 9, 2018**

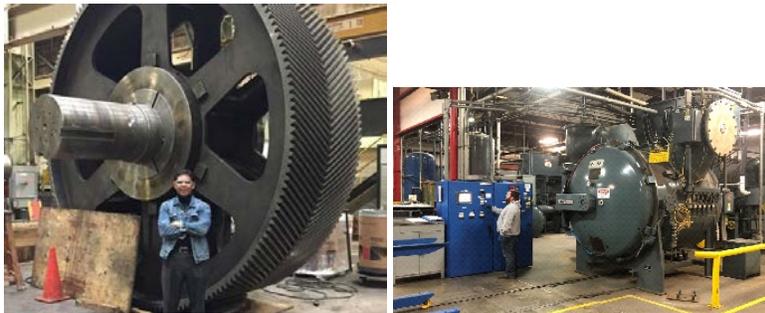


“Noel Davis has joined Aerobrazed Engineered Technologies as General Manager in Cincinnati, OH. Noel will report directly to Ed Mohrbach, Vice President Finance and Operations. Noel Davis brings with him thirty-five years’ leadership experience from the military and industrial businesses. Noel has an extensive background in Aerospace. He led the operations at Northstar Aerospace and Chromalloy Gas Turbine, where he restored both operations to profitability from significant operating losses. As Director of Operations of Northstar Aerospace in Chicago, Noel was responsible for machining transmission components for Chinook and Apache helicopters. As Site General Manager at Chromalloy in New York, Noel was responsible for OEM and Repair business for advanced coatings on turbine blades for civilian & military aircraft and power generation engines.

Earlier in his career, Noel was a U.S. Navy officer serving as a submarine weapons officer, then a reserve intelligence officer including deployment to the Middle East. Noel also has been an operational leader running factories for companies such as Alcoa and Johnson Controls, gaining expertise in Lean Manufacturing. At Aerobrazed, Noel will develop a

strong engaged team across Quality, Engineering and Production and leverage the tremendous asset base to profitably grow the business.

Noel states, "I am honored with the opportunity to grow Wall Colmonoy's Aerobraze Cincinnati business. We have to rebuild the team, and restore our perception in the market, but there is a good foundation to build upon. I am very excited about leading this business to new success". Noel graduated with a B.S. in Systems Engineering from the U.S. Naval Academy at Annapolis, and an MBA from Marymount University in Arlington, Virginia. Noel is certified in Lean Manufacturing with a Six Sigma Green Belt, trained in Organizational Development as a change agent, and has a track record of turning around manufacturing businesses. Noel may be reached at (513) 842-4203 or NDavis@wallcolmonoy.com"





Monday Morning Briefing

Where are they now? **Dewayne Dykes** is a very experienced heat treater having spent at least 20 of the past 30 years working in captive and commercial heat treats. For a number of years he was with **Paulo** in Murfreesboro and Nashville but recently he joined **Bodycote** in Morristown, TN. Dewayne is one of those people who really likes working in the heat treating industry-we need more people like him. Under the “really cool pictures” category we have this one from **Bob Hill**, President of **Solar Atmospheres of Western, PA.** , who has this to say “this is an internal hot zone view of the largest vacuum

furnace in the world (48' in length). It just happened that our proud American Flag was juxtaposed in line with this picture.



On our “Business Page” we just added what is one of the more intriguing job postings we have run across in our almost 20 years of publishing “The Monty” (just click on the link in the business section below). ***“Privately held, Midwest based, heat treat company desires to retain an independent Board member with significant leadership experience in the heat treat industry.”*** Furnace builder **Onex** in Erie, PA has this press release for us. *“Onex, Inc., is proud to announce that as of January 1, 2018, Drew and Ashleigh Walters are officially majority owners of Onex, Inc. This move culminates a four-year ownership succession plan which involved restructuring the leadership team, repositioning the company for growth, while consistently delivering outstanding products and service to our valued customers. Onex, Inc. is a woman-owned company, Ashleigh Walters will continue as President of Onex Inc., and Drew Walters as Vice President. **Passing the Torch**; Onex began as a refractory distributor for the local foundries in 1965. In 1987, Ric Walters purchased the company and expanded their capabilities adding installation and service. As the torch was passed to Drew and Ashleigh, they observed that each generation brings a new life and direction to Onex and they are very excited to see what the future holds. Ric and Lyn Walters commented “We have a lot of memories with Onex. We have learned a lot, worked hard and even made mistakes along the way, however, we became a better company at the end of the day. We give all our support to Ashleigh and Drew and know Onex’s team will too”. Building on the company’s commitment to customer-focused solutions, Drew and Ashleigh are strategically expanding Onex’s Blue Diamond Furnace division into a full service industrial furnace OEM. This move leverages Onex’s proven designs and deep technical experience.”*



It's party time! **AICHELIN** the world's largest furnace builder is celebrating 150 years in business with a big party 17 May, 2018 at the Porsche Museum in Stuttgart, Germany. We at "The Monty" plan on being in attendance-150 years in business is quite a feat. To round things out for Monday, January 8 we have this press release from **Advanced Heat Treat Corp.**, based in Waterloo, Iowa. It is worth noting that Advanced is far and away the largest Ion Nitriding company in North America. *"Advanced Heat Treat Corp. announces that it has once again been awarded Nadcap Merit status for Heat Treating (Ion Nitriding) at the MidPort location in Waterloo, IA. Nadcap is one of the ways in which the aerospace industry identifies those who excel at manufacturing quality product through superior special processes. "We are truly honored to receive the highest accreditation possible from PRI for Nadcap. Each and every employee at AHT works hard to ensure our customers' parts – including aerospace and defense components – are in good hands. We are proud to achieve Merit status for the third time in a row and be granted a 24-month accreditation. We hope our customers take pride in the fact they send their parts to AHT." Stated John Ludeman, Director of Metallurgy and Quality Excellence. Advanced Heat Treat Corp. has held Nadcap accreditation since 2013. Having demonstrated their ongoing commitment to quality by satisfying customer requirements and industry specifications, the Nadcap Task Group has determined that Advanced Heat Treat Corp. has earned the highest accreditation period possible. This means that they have been granted an accreditation that lasts 24 months! "Achieving Nadcap accreditation is not easy: it is one of the ways in which the aerospace industry identifies those who excel at manufacturing quality product through superior special processes. Companies such as Advanced Heat Treat Corp. go above and beyond achieving Nadcap accreditation to obtain Merit status and they should be justifiably proud of it," said Joe Pinto, Executive Vice President and Chief Operating Officer at the Performance Review Institute. "Benefitting from a less frequent audit schedule reduces audit costs and associated*

pressures and demonstrates the trust that the aerospace industry has in Advanced Heat Treat Corp., based on their past performance in Nadcap audits. PRI is proud to support continual improvement in the aerospace industry by helping companies such as Advanced Heat Treat Corp. be successful and we look forward to continuing to assist the industry moving forward.” January 8, 2018



Don Longenete/Certified Heat Treating

Mr. Don Longenette, formerly of Timken Bearings and Bodycote is part of the group that just acquired Certified Heat Treating earlier this week (scroll down to find the details). As acting General Manager what is one of his first jobs? Why filling up one of the delivery trucks of course. *January 5, 2018*



The ABCs of VAB (Vacuum Aluminum Brazing)

January 4, 2018, Meadville PA – SECO/VACUUM, North America’s leading vacuum aluminum brazing equipment supplier, invites you to a short educational webinar on Vacuum Aluminum Brazing (VAB). The one-hour session features AeroSPC’s long-time industry veteran and VAB specialist, Matt Orfe. Mr. Orfe will cover the basics of what you need to do to

*get started with vacuum aluminum brazing. Processes, materials, equipment, and markets will all be covered in this highly informative Webinar. Time will be reserved for Q&A following the presentation, so be prepared to bring your questions! **January 5, 2018***

When: Thursday, January 18, 2018, 2:00 – 3:00 pm EST

Where: <https://register.gotowebinar.com/register/7957334260703882753>



Calvert Street Capital Partners Buys Certified Heat Treating

This announcement reinforces the fact that Calvert Street Capital is very committed to becoming a major player in the commercial heat treating industry. Certified is a larger than average commercial heat treater with a number of large capacity batch IQ furnaces, vacuum furnaces up to 6 bar and Induction hardening equipment. You heard it first at “The Monty”.

“January 2, 2018 – Thermal Process Holdings, an investment vehicle formed by Calvert Street Capital Partners (“Calvert Street”), is pleased to announce its acquisition of Certified Heat Treating (“Certified”) based in Springfield, Ohio. Certified represents the second investment in our strategy to build a leading thermal processing company focused on value-added services. Central to this strategy is identifying and bringing together leading businesses that share a focus on world-class safety, quality, service, and advanced technology. John Hubbard, Chairman of Thermal Process Holdings, commented, “We are excited to announce the second

acquisition in our strategy to build a best-in-class company that offers a range of advanced services. The Biehn family wanted to ensure the continued success of the business and to provide opportunities for their people. We are intent on carrying out those objectives.”

Don Longenette, who will serve as General Manager for Certified while we review our permanent structure and resources, remarked: “The operating history of Certified dates to 1959, and the company has a solid reputation in the broad spectrum of industries it serves. We look forward to building on that reputation and growing the business. I’m excited



to work with Joe Biehn, who will immediately focus his full attention on driving additional sales. Our goal with Certified is to utilize the exceptional quality of the equipment, the expertise and experience of the employees, and to take advantage of the open capacity of the furnaces.” As announced previously, Calvert Street has partnered with leading executives to build a meaningful thermal processing business. The team, which includes Mike Sobieski and Lewis Lance in addition to John Hubbard and Don Longenette, consists of highly experienced individuals who have spent their careers in thermal processing. This team has complementary skill sets and will be responsible for the day-to-day activities of Thermal Process Holdings.

*Calvert Street is a Baltimore, Maryland-based private equity firm focused on investing in industrial service businesses in the lower middle-market. Since its inception in 1995, Calvert Street’s objective is to partner with skilled management teams of privately held businesses to drive profitable growth and organizational transformation. Thermal Process Holdings builds upon Calvert Street’s experience in other high-value add industrial sectors, including testing and inspection and precision machining. For more information, please go to www.cscp.com.” **January 4, 2018***



NEW YEAR, NEW SERVICES ADDED TO SOLAR ATMOSPHERES OF WESTERN PA

“In a continuing quest to enhance customer service, Solar Atmospheres of Western PA has expanded its wings by adding another type of mechanical testing to its repertoire: tensile testing. Tensile tests are essential in determining and understanding the ultimate strengths of materials. Currently, many aerospace specifications demand at least one tensile test to be performed on each heat lot of material and/or for every furnace load of components being heat treated. Tensile testing is not only more prevalent today but is often the mechanical test of choice that supersedes all others for the acceptance of properties.

Solar Atmospheres has traditionally outsourced all tensile testing by utilizing excellent locally accredited independent laboratories. Due to shipping and transporting test specimens to these laboratories, a delay of 24 to 48 hours before the lab even received the specimens was normal. With a keen ear to our customers’ needs of receiving tensile results faster and more efficiently, Solar Atmospheres of Western PA set out on a continuous improvement initiative to bring tensile testing in house. In the summer, Solar took delivery of a new Tinius Olsen 300SL Universal testing machine and installed it in a temperature controlled environment. In addition, in order to custom machine test specimens, Solar Atmospheres of Western PA purchased a new Haas Model TL-1 CNC lathe. Both units are physically located in a brand new 10,000 square foot facility adjacent to its 75,000 square foot state-of-the-art vacuum heat treating production facility.

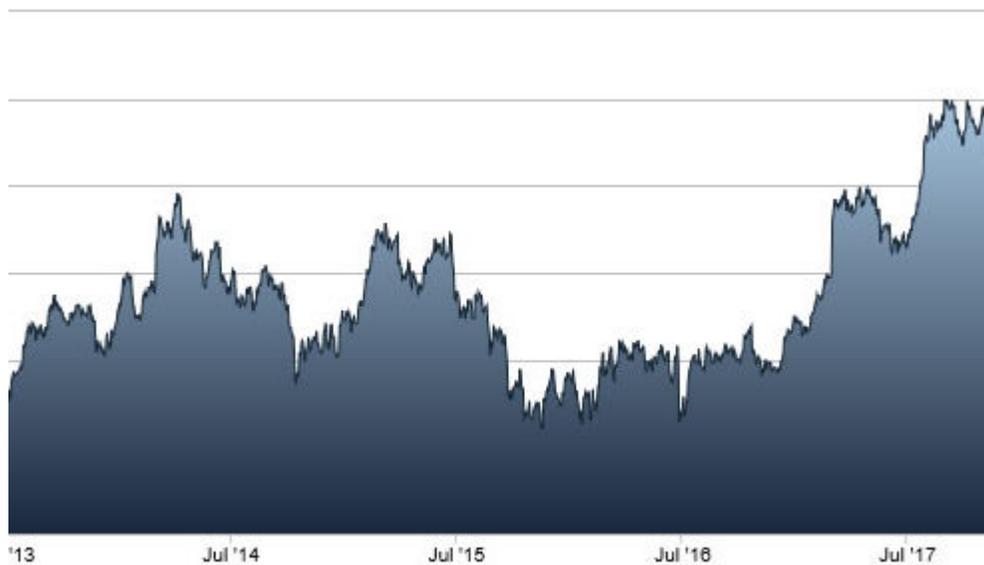
Solar Atmospheres of Western PA has added room temperature tensile testing to the scope of their Nadcap accreditation. The Nadcap audit went extremely well and final approval was completed on December 20, 2017. As Bob Hill, President elaborated, “We at Solar listen to our customers very carefully. Our customer feedback was very definitive: they wanted faster turnaround on their heat treated components. By bringing this new destructive mechanical

test in house we will be able to do just that.” If your testing protocols would include tensile testing before, during, or after heat treatment, please call Mike Johnson 724-982-0660 x2223 or mike@solarwpa.com. He will be glad to discuss your requirements with you. For additional information about Solar Atmospheres, visit us www.solaratm.com.” **January 4, 2018**



Bodycote Share Price

Well commercial heat treater Bodycote is certainly starting the year off on a high note. This graph shows how the company share price has risen over the past 5 years. **January 3, 2018**



Names in the News/HTA

A very prominent name in the commercial heat treating industry is surprisingly enough an Australian company, Heat Treatment Australia (HTA). We hasten to add that we have

nothing against Australian companies but it is rather unusual for an Australian heat treater to expand outside of Australia-as a matter of fact this is the only example we can think of. This article from the Brisbane's Courier Mail tells how the company has been so successful. **January 3, 2018**

"A WILLINGNESS to adapt and readiness to take a risk have transformed a small Brisbane mower blade producer into an international aerospace player. Heat Treatment Australia is a family-owned firm, started in the 1970s by Max Tucker. "We began as a traditional general manufacturing business," said his daughter Karen Stanton, now corporate and strategy director. "About 10 to 15 years ago, manufacturing in Australia began to decline. So we started contemplating where we needed to diversify." The firm invested heavily in research and development, and machinery , to position itself to become part of the multinational Joint Strike Fighter program. The Coopers Plains-based company makes heat-treated components for the fighter aircraft but has also sought "every opportunity available" to expand to related clients in aerospace, high-performance vehicles including Formula 1 cars and the renewable energy sector. HTA opened a facility in Los Angeles about 18 months ago, which Ms Stanton said was "ridiculously exciting for an Australian company like ours".

Home Page Pictures

As our readers know on a regular basis we change our home page pictures, a collection of photos of heat treat installations and the people behind them. These pictures can cover a span of over 20 years now, our latest batch just posted mainly cover 2017 and are from locations as far afield as the US, Canada, France, China and South Africa. If you have an interesting heat treat photo we would be happy to post it for you. <https://www.themonty.com/> **January 2, 2018**

CIEFFE

We welcome our newest advertiser CIEFFE Furnaces of Italy one of the most diverse manufacturers of new furnaces in the world. Their banner ad can be found towards the top of this page and an interview with the owner of the company Mr. Peter Schweighofer can be found at <https://www.themonty.com/peter-schweighofer/> **January 2, 2017**

USED EQUIPMENT

Want to get true market value for your used heat treating equipment?

themonty.com is the only way to do this! Unlike used equipment dealers we work on a commission basis meaning no high overheads, no buy and resells, no high expenses which means that you as a seller get what your equipment is worth-not what a used equipment dealer will pay you for it.

Not sure what your equipment is worth or how salable it is?

Let us know and we can give you a **free appraisal** and an honest answer about market conditions – **no BS**. Before listing we will require a signed copy of the “**Terms and Conditions**”.

Please email Jordan at **jordan@themonty.com** all pertinent information including asking price (which we strongly recommend) age, condition and if possible photos. When selling please keep in mind that we do NOT ask for an exclusive sales agreement – **if we don't sell it we don't get paid – PERIOD**. You can't lose by listing with **themonty.com** we sell your equipment or we don't get paid-period.

WE HAVE ATTEMPTED TO DESCRIBE ALL EQUIPMENT ACCURATELY FROM THE INFORMATION WE HAVE AVAILABLE.

ANY MISTAKES ARE UNINTENTIONAL. WE DO NOT GUARANTEE THE ACCURACY OF THE INFORMATION, NOR CAN WE GUARANTEE THE PERFORMANCE OF THE EQUIPMENT OR SUITABILITY TO YOUR APPLICATION. THE EQUIPMENT IS SOLD AS-IS, WHERE-IS. WE STRONGLY ENCOURAGE YOUR PERSONAL INSPECTION OF THE EQUIPMENT BEFORE PURCHASE.

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 # B438 Super 30 Allcase

Item # B437 Ipsen Recirculating Box Furnace

Item # B436 36" x 60" Pit Gas Nitrider

Item # B435 CODERE Switzerland System 250 42/60

Item # B434 Holcroft Batch IQ

Item # B433 Car Bottom 74" x 84" x 84"

Item # B432 Atmosphere Box Furnace 36" X 48" X 24"

Item # B431 Air Atmosphere Box Furnace 2,000 F

Item # B428 Carbottom Furnace 1800 F

Item # B426 Plasma Nitriding Unit 1000 kg Capacity

Item # B425 Box Furnace 2000 F

Item # B424 Atmosphere Box Furnace 80" x 96" x 60"

Item # B421 Surface Combustion "Super 36" Allcase

Item # B418 Lindberg High Temperature Oven 36" Cubed

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

Item # B414 Ipsen Batch IQ Installation Immaculate

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 # B388 Hydrogen Atmosphere Furnace 8" x 8" x 8"

Item # B374 Atmosphere Box Furnace 2100 F

Item # B371 Sauder "Auto-Tilt" Car Bottom Furnace

Item # B352 Pacific Scientific Box Furnace

ITEM # B438

SUPER 30 ALLCASE

TYPE OF EQUIPMENT: Internal Quench Furnace. MANUFACTURER: Surface (System I). MODEL NO: SUPER. SERIAL NO: BX36908-1. EFFECTIVE WORKING DIMENSIONS: 30" Wide x 48" Deep x 30" High. FUEL: Natural Gas. TEMPERATURE RANGE: 1750° F. DESCRIPTION: Brick Lined Internal Quench Furnace complete with Internal Work Handler, Alloy Roller Rail Hearth, Top-Mounted Alloy Circulating Fan, (4) Radiant U Tubes, Single Quench Cylinder, and SBS Air/Oil Cooler. INSTRUMENTATION: Free Standing Control Panel with Honeywell Digital Controls. CONDITION: Very Good. OVERALL DIMENSIONS: Furnace: 10' Wide x 12' Long a 15' High (12' Shipping Height). Quench Tanks: 12' Wide x 8' Long x 16' High (11'8" Shipping Height). APPROX. WEIGHT: 30,000 lbs.

PRICE: \$95,000.00 without Burner System; \$125,000.00 with New Eclipse Burner/Recuperator System



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 nitriding (Lindberg Homo Nitriding – 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 # B435

CODERE SWITZERLAND SYSTEM 250 42/60

CODERE Switzerland System 250 42/60. This installation was manufactured in 2001 and is situated in Switzerland. Due to the reduction of in-house heat treatment, customer decided to sell this line and outsource material, which arrives already heat treated. Austenitizing, carburising and carbonitriding furnace with operating temperature of 1000°C. The main voltage is 3 x 400V – 50Hz. The maximum weight per load is 150 kg with loading dimensions consisting of 420 mm x 600 mm. System consists of a Salt quench tank – Water quench tank- Gas cooling unit (0.2 bar) – 2 x Austenitizing furnace – 2 x Tempering furnace under protective atmosphere – Washing machine 2 with Salt recuperator – Semi automatic manipulator with gas cabinet – Loading/ Unloading table (Suitable for 2 loads). Carbomanagement software recording all history and cycle

parameters with the necessary controllers. Possibility of changing water tank to oil quench. Codere confirm this installation will undertake retrofit of retorts before dispatch and overall inspection of line. Well maintained and has been shut down since August 2017.

Asking Price: 595,000 CHF



ITEM # B434

HOLCROFT BATCH IQ FURNACE

Holcroft Batch IQ Furnace. A Holcroft Model GPM batch IQ furnace with working dimensions of 36" wide X 48" deep X 30" high. Gross load capacity of 3,000 pounds. Gas fired with four 8" diameter U-Tubes and Hauck burner with recuperators. BTU input 1,350,000 BTU's. Maximum operating temperature of 1800F. Uniformity from 950F to 1650F +- 10F. Quench tank 3400 gallons. Quench oil temperature 160F. Nitrogen Top Cool. Allen Bradley PLC 1400. SBS quench oil cooler which has never been used. Also included is a spare pusher head. Currently set up for carburizing and nitriding. New in 1998. Excellent condition!

Asking \$55,000 USD.



ITEM # B433

CAR BOTTOM 74" X 84" X 84"

Car Bottom 74" x 84" x 84". Electrically heated with a maximum temperature of 1500F.

Asking Price: 8,250 USD



ITEM # B432

ATMOSPHERE BOX FURNACE 36" X 48" X 24"

Lindberg Atmosphere Box Furnace. Model G-364824-A, S/N 20063. Working dimensions of 36" wide X 48" long X 24" high. Electrically heated 480/3/60 @ 95KW. Maximum operating temperature of 2500F. Air operated vertical lift door with water cooled faceplate, ceramic multipiece hearth, 20 Globar elements above and below the hearth. Tap style transformer. Digital control and overtemp. Very good condition.

Asking \$49,500 USD.



ITEM # B431

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 \$65,000 USD.



ITEM # B428

CARBOTTOM FURNACE

Carbottom Furnace. Working dimensions of 30' X 10' X 9", gas fired, 15 zones of control. Manufactured by the JL Becker Company. Operating temperature of 1800F. This was completely rebuilt in 2015 and has new ICS controls and new fire brick. Complete and in good condition. Currently installed but not in use.

Asking \$150,000 USD or best offer.



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 # B424

ATMOSPHERE BOX FURNACE

Atmosphere Box Furnace. Manufactured by Williams Industrial Services. Natural gas, 1.8 MBTU's. Working dimensions of 80" wide x 96" high x 60" deep. Radiant Tube Box Furnace. S/N 18932. Maximum temperature of 1750F. Voltage 480/3/60. Controls; Mounted &

wired in a free standing enclosure includes a Honeywell digital controller/recorder, Eurotherm high limit. Mounted in the same enclosure includes "Fireeye" flame safety. All necessary pushbuttons, signal lights, relays, motor starters etc. are included. Standard front loading box furnace with vertical lift air operated door. A water cooled roof mounted fan circulates the heated air for good temperature uniformity. There are twelve (12) vertical radiant tubes in this furnace, six (6) on each side. Each burner has spark ignition and there is a flame safety system for flame curtain. There is a Endo flowmeter to control atmosphere. Furnace also has a water cooled breast plate & a stationary powered loader for charging the furnace. Excellent condition.

Asking \$125,000 USD.



ITEM # B422

IPSEN SEALED QUENCH LINE

Ipsen Sealed Quench Line. Located in Europe this line is currently installed but shut down very recently. Used for hardening and carburizing. Condition generally good. Asking Price £95,000.00. Does not include, dismantling, export packing and delivery. Line consists of the following items:

Ipsen TQF-7-EM Sealed Quench furnaces built in 1975. Electric heating. Load size 600kg. Forced cool fan in vestibule. Chamber size: 760 wide x 1220 long x 510 high mm.

Ipsen TQF-8-GRM Sealed quench furnace built in 1983. Gas heating with Recuperative burners. Load size 600kg. Forced cool fan in vestibule. Chamber size: 760 wide x 1220 long x 610 high mm.

Ipsen Tempering Furnace DAC-8-GR built in 1983. Gas heated by indirect radiant tubes. Can be used with an atmosphere with internal forced cooling. Load size 600kg; Chamber size: 760 wide x 1220 long x 610 high mm.

Ipsen Tempering Furnace DLRC-7-E built in 1976. Electrically heated with spiral wound elements. Load size 600 kg. Chamber size : 760 wide x 1220 long x 510 high mm

Ipsen Parts Washer Model WPD-4-G Gas Fired. Ipsen Loader. Ipsen Unloader. Ipsen Endo Gas Generator Model G-1500-G built in 1983. Gas fired. 1500 CFH. Can be easily upgraded to produce 2000 CFH. Dewpointer, industrial scales and portable hardness tester also included.

Asking Price £95,000.00



ITEM # B421

SURFACE COMBUSTION "SUPER 36" ALLCASE

Surface Combustion "Super 36" Allcase. Working dimensions of 36" X 48" X 30" high, gas fired. Currently undergoing a rebuild and will be in "like new" combustion in 12 weeks. Gas fired, top cool option and hot oil. Vertical U tubes with safety platforms, ladders, all new motors, wiring, components and comes with new control cabinet with SSI controls and flow scopes.

Asking Price: \$353,825 USD.

ITEM # B418

LINDBERG HIGH TEMPERATURE OVEN

Lindberg High Temperature Oven. Model 41-MT-363636-2. Serial number 949223. Working dimensions of 36Wx36Lx36H. Manufactured in 1994. Maximum operating temp of 2050F. 240V, 3-phase 60hz. Honeywell Truline round chart recorder, model DR45AT and Watlow F4 digital control. Air operated vertical lift front door. Heating is provided by Lindberg MPH heating elements. Recirculating fan is mounted in the bottom. Furnace can be used for hardening, carburizing, carbo-nitriding, normalizing, and annealing. Includes retort box measuring 34x34x32 with gas connection. Excellent condition. Only used in the jet aviation industry by 1 owner. The retort was purchased with the furnace but was not actually used. Retort is brand-new. Unit has been well taken care of. Also included is a Clark Hardness Tester, Model CPT.

Asking \$21,000 USD for both.



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.



ITEM # B414

IPSEN BATCH IQ INSTALLATION

Ipsen Batch IQ Installation. This 5 year old installation consists of 2 Ipsen carburizing furnaces with working dimensions of 36" X 48" X 36", both gas fired. Four (4) gas fired Ipsen tempers 36" X 48" X 36" capable of 1400F, an Ipsen dunk/spray washer and 2 charge cars. Carburizing furnaces are a "flow through design" using endothermic atmosphere.

Atmosphere control is through an oxygen probe/Siemens 3 gas IR system. The entire installation is designed for "lights out operation" meaning it is completely automated. Included is over \$100,000 worth of spare parts along with 15 base trays and baskets. The equipment has just been removed and is in immaculate condition. New the system was \$3.5 million USD,

Asking Price is \$1.25 million USD. Vendor will consider selling individual items.



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.



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 # B388

HYDROGEN ATMOSPHERE FURNACE

Hydrogen Atmosphere Furnace. Manufacturer: CM Furnaces. Type: Hydrogen Atmosphere Box. Work Zone Size: 12" x 12" x 12" furnace work zone with 8" x 8" x 8" inside retort work area. Max. Temperature: 2000°F. Uniformity: Full work zone, prob. +/- 50°F. Lower 6": prob. +/- 20°F. Atmosphere: Wet or Dry Hydrogen or Nitrogen Purge. Controls: PLC – Automatic with Proface touch screen.

Price: \$5,000 USD



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 # B371

SAUDER "AUTO-TILT" CAR BOTTOM FURNACE

Sauder "Auto-Tilt" Car Bottom Furnace. Working dimensions; ID: 8' wide x 30' long x 5' high, electric, 480/3/60, 325kw; 1400F, complete with ceramic fiber lining, 3 zones of control each with top mounted alloy recirculating fan, powered car with cast deck and 60,000# load capacity, hydraulic pump set for lifting cylinders, control panel with digital controls. Super clean and in operation.

Asking \$179,000.00 USD including disconnecting and loading onto trucks.



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.



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Quick Jump To Items:

- Item # C332 Sunbeam Mesh Belt Temper
- Item # C331 Lindberg Pusher Furnace
- Item # C330 Mesh Belt Furnace Line
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- Item # C328 CI Hayes Atmosphere Belt Furnace
- Item # C327 Rogers Engineering Continuous Brazing Furnace
- Item # C325 Sinterite Mesh Belt Furnace 1180 C
- 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
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- Item # C283 Rotary Hearth Furnace System
- Item # C269 CI Hayes Mesh Belt Furnace 12" Wide Belt
- Item # C265 Sunbeam Pusher Carburizer 3000 lbs
- Item # C219 Abbott Furnace

ITEM # C332

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 # C331

LINDBERG PUSHER FURNACE

Lindberg Pusher Furnace. Lindberg pusher furnace S/N JW030855A. Gas fired with 16 Burners, Eclipse TFP-030, 1,415,000 BTU/Hour. Maximum operating temperature of 1750F. Brick Lined Hearth + Mineral Fiber walls and ceiling. Currently used for annealing but also set up for atmosphere heat treating. (4) Zones of Control (3 heating and one cooling), Burners on top, Air cooled and Water cooled. Uses 24" X 48" trays. 1 tray in entry purge, 5 in high heat zone, 1 in transition zone, two in air cooling zone, and one in water cooled zone. As set up for annealing at 1550F the furnace is currently capable of 2400 pounds per hour. Includes chiller and spare burner tubes. OVERALL DIMENSIONS:

High Heat Chamber: 44.5" Wide x 43" High x 270" Long.

Transition Chamber: 36" Wide x 40.5" High x 35" Long.

Air Cooling Zone: 50" Wide x 62" High x 96" Long.

Water Cooling Zone: 52" Wide x 40" High x 68" Long.

Currently installed but not in operation. Complete and in good condition.

Asking \$49,000 USD.



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



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



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 # C325

SINTERITE MESH BELT CONVEYOR FURNACE

Sinterite Mesh Belt Conveyor Furnace. 120" long preheat, 2 zones, silicon carbide heating elements with metallic muffle. 180" long high heat with 3 zones of control, silicon carbide heating elements and ceramic muffle. 180 KW, 480/3/60. Belt width 12" with 4" clearance over belt. Overall dimensions 60"W X 75"H X 54'-0"L. Cooling length 282". Preheat is rated for 1100 degrees C and high heat is rated for 1180C. New in 2000 it has seen very limited production and is in excellent condition. Has pre-heat bubbler. New pre-heat muffle, new belt, and several new glo-bars.

Asking \$70,000.00 USD or best offer.



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.



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.



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.



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 # C296

C.I. HAYES HIGH TEMPERATURE TUBE FURNACE

C.I. Hayes High Temperature Tube Furnace. Model MY-0002.528, 2-1/2" ID Tube x 28" Long Heating Chamber. Operating temperature of 1700°C, 10.5 KW, Single Zone Control with overtemp protection. Overall dimensions of 75" H x 32" W x 91"L. Hydrogen Atmosphere. Included is an automatic loader.

Asking Price \$21,000 USD / OBO.



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.



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.



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.



ITEM # C219

ABBOTT MODEL 6ZSCR-18-432HH6-VC-2150

ABBOTT MODEL 6ZSCR-18-432HH6-VC-2150. 18" wide belt, 3"+ opening over the belt, 432" heating chamber (silicon carbide muffles), six zones, 36" long vari-cool with 162" of additional cooling including two curtain boxes. 2150 deg.F. max temp., piped for dissociated ammonia atmosphere and nitrogen purge, 335 kw @ 480/3/60, Honeywell UMO 800 controller/programmer, OAD: 84" w x 90" h x 720" l. Currently used for annealing knife blades but with a little effort a metallic muffle in the front half of the heating chamber could be added for debinding and sintering of PM parts.

Asking price: \$77,000 USD / OBO.



DRAW/TEMPER FOR SALE

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Quick Jump To Items:

- Item # T349 Recirculating Box Type Draw Furnace
- Item # T348 Car Bottom Tempering Furnace
- Item # T346 Despatch Oven 72" X 48" X 48"
- Item # T345 Surface Combustion Temper Furnaces (4 Available)
- 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
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- Item # T329 Guspro Heat Cleaning Oven
- Item # T325 3-Station Despatch Temper Furnace
- Item # T321 Grieve Conveyor Oven
- 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 # 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 # T348

CAR BOTTOM TEMPERING FURNACE

Car Bottom Tempering Furnace. Gas fired this unit has an operating temperature of 1250F. Working dimensions of 42" wide X 96" long X 48" high. Charge capacity of 20,000 pounds. Built in 2002 by Park Thermal. Overall dimensions of 108" wide X 144" long X 120" high, 575 Volts, 3 phase, 60Hz. Control power 120 Volts, 1 phase, 60Hz. Honeywell 3300 Temperature controller, Watlow Series 94 High Temperature Controller, Honeywell DR4300 Chart Recorder, idec GT3A Process Timer. Comes with complete manuals and drawings. Currently not in operation.

Asking \$9,000.00



ITEM # T346

DESPATCH OVEN 72" X 48" X 48"

Despatch Oven 72" X 48" X 48". Manufactured by Despatch this is an electrically heated oven with working dimensions of 72" high X 48" wide X 48" deep. 230/3/60 40 KW. Operating temperature of 850F. Serial Number: 76414. Temperature Controls: New solid state digital readout indicating controller and overtemp. Side mounted control cabinet. Description & Features: Double swing open doors, Vertical air flow. Provisions for shelves, one shelf included. Top mounted circulating fan forces air over heating elements, located in the rear wall, and up through the work load resulting in good uniformity. Oven has been checked out and test fired and is ready for immediate shipment. Condition: Very Good.

Asking \$14,900.00 USD.



ITEM # T345

SURFACE COMBUSTION TEMPER FURNACES (2 AVAILABLE)

Surface Combustion Temper Furnaces (2 available). Manufactured by Surface Combustion, Model HFC-36-54. All are gas fired units with an operating temperature of 1250F. Standard Guillotine style door. Working dimensions of 36" wide X 48" deep X 30" high. Alloy and brickwork in good condition.

Asking \$29,500 USD Each.

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.



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.



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 \$55,000 USD.



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.



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 # T329

GUSPRO HEAT CLEANING OVEN

Guspro Heat Cleaning Oven. Model G0484039ED51P354N, S/N C366. Working dimensions of 54" wide X 48" deep X 45" high. Process chamber has an operating temperature of 1,000F. Oxidizer chamber has an operating temperature of 1200-1600F. Complete and installed but not in use. Reasonable condition.

\$2,000 or best offer.



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 # T321

GRIEVE CONVEYOR OVEN

Grieve Conveyor Oven. Electrically heated 460/3/60/160kW/235 Amps. Maximum operating temperature of 650F. Working dimensions of 24" wide X 14" high X 42' long. Controls; A Barber Colman 560 digital programmable temperature controller and a Barber Colman high limit safety. All control switches with indicating lights are flush mounted in the enclosure. SCR power controllers, high limit contactors, motor starters, fuses, relays etc. are mounted and wired inside the enclosure. Main power disconnect circuit breaker with panel mounted operator handle. Standard conveyor oven design with a flat wire conveyor belt. Three foot long charge table followed by a 42 foot long heating section divided into 2 zones of control. Each zone has separate heating elements and circulating fan located above the work chamber. Heated air is circulated down over the top of the belt for good uniform heating. Exhaust vents located on the top of each chamber. Access doors on the side for entrance into each zone. 4' long discharge table is included with this oven. Very good condition.

Asking Price: \$42,000 USD.



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 # G200 Endothermic Generators 1500 CFH (2 available)

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 # G200

ENDOTHERMIC GENERATORS 1500 CFH (2 AVAILABLE)

Endothermic Generators 1500 CFH (2 available). Manufactured by SECO/WARWICK these are Model Eng-15 Endo Gas Generators. Each is heated by natural gas with a capacity of 1500 CFH. 220V, 3 phase, 60hz. Manufactured in the US these have UPC controls and air cooling. Excellent condition. Both retorts were replaced within the last 3 years.

Asking \$20,000 USD each or \$30,000 USD for both.



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.

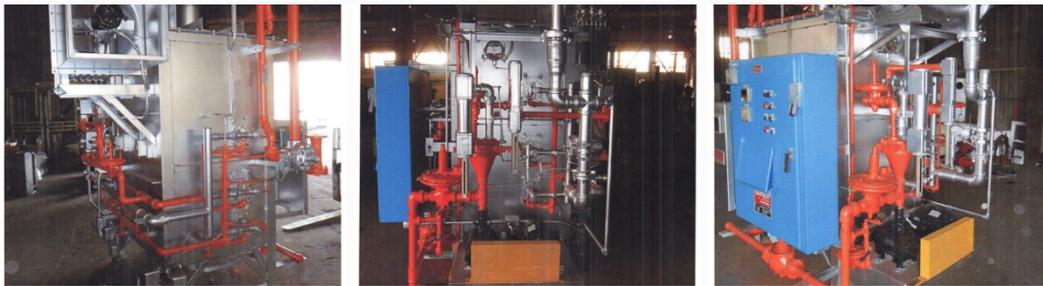


ITEM # G196

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 (vendor 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

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Quick Jump To Items:

Item # I175 Inductoheat /Lepel Induction Power Supply

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

Item # I173 125 Kw Ajax Induction Generator

Item # I171 50 Kw Lepel Generator

Item # I164 Ajax Tocco Induction Power Supply Unused

Item # I160 Ajax Tocco Power Supply Unused

Item # I158 Induction Power Supply 335 kW

Item # I153 Raydyne Induction Heating System 40 kW

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 designed 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 \$139,000 USD.



ITEM # I173

125 KW AJAX INDUCTION GENERATOR

125 Kw Ajax Induction Generator. Output is 125 Kw, Frequency 300KHZ, 460 Volt, Line Current 352 Amps. Foot Print 48" x 80" x 78". PLC operated, Optical Infrared Pyrometer Temperature Control. Approximately 100 Induction Coils. Spare Load Coil Transformer. Lepel Heat Exchanger Lift and Rotate Fixture. Good Operating Condition.

Asking Price: \$15,250.00 USD



ITEM # I171

50 KW LEPEL GENERATOR

50 Kw Lepele Generator, 350 KHZ,460V, 160 amps. Lepele heat exchanger included. PLC controlled processing, Optical Infrared Pyrometer controller for heating each part to the same temperature. Parts are then removed from the coil and immersion quenched in the appropriate media. Tempering follows.



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.

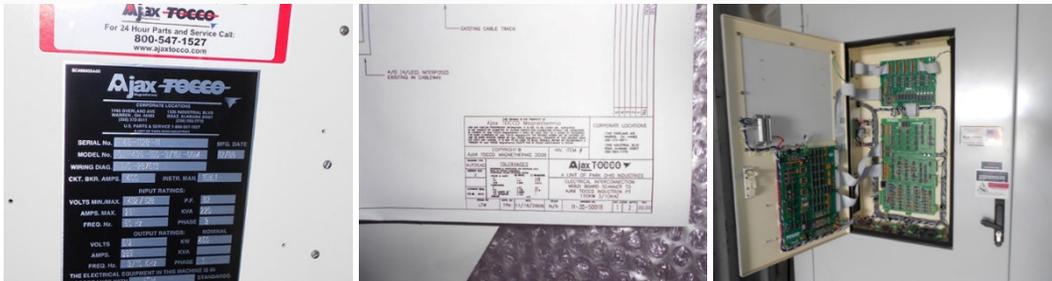


ITEM # I160

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

Asking \$39,000.00 USD.



ITEM # I158

INDUCTION POWER SUPPLY

Induction Power Supply. Manufacturer Inductoheat/Elphiac. Model Number: DC18T+HF08. S/N 2177DC. 335 kW, 200 kHz, 750V Output. Input Voltage: 460/3/60/448 KVA/562 Amps. Output Voltage: 335 kW/750V/200 kHz. Very good condition.

Asking \$39,500.00 USD.



ITEM # I153

RAYDYNE INDUCTION HEATING SYSTEM

Raydyne Induction Heating System. Input Voltage: 480V/3 Phase/60 Cycles/110 Amps, Output Voltage: 40 kW, 450 kHz, Year Built: 1985, Model of Power Supply: EI-40, Serial Number of Power Supply: 41408901-B. Please note the RF Tube is missing. Includes a dual heat station with quench. Model of Heating/Quench Station: 10228201, Serial Number of Heating/Quench Station: 10228201B. This system is Government Surplus and appears to be fairly clean inside power supply cabinet. The power supply has a "Control Concepts" SCR power controller.

Asking \$7,500.00 USD.



LAB EQUIPMENT FOR SALE

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Quick Jump To Items:

Item # L8 Clark Micro Hardness Tester

Item # L7 Leco Micro Hardness Tester

Item # L3 Laser Diffraction Particle Size Analyzer

Item # L1 Detroit Testing Brinell Hardness Tester

ITEM #L8

CLARK MICRO HARDNESS TESTER

Clark Micro Hardness Tester. Model DMH-2, Serial number 3388. Good operating condition.

Asking \$6,500.00 USD.



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.



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.

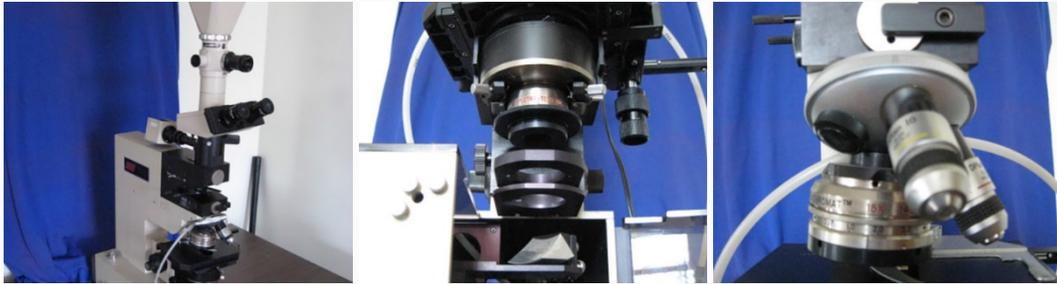


ITEM # L1

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 #M410 Magnaflux MPI Inspection

Item #M409 Graymill Aqueous/Solvent Parts Washer

Item #M408 Surface Combustion Power Loading Table 30" Wide

Item #M406 Surface Combustion Parts Washer

Item #M400 Nitrogen Generating System 99.999 Purity

Item #M399 Eclipse Burners, Recuperators, Spark Igniters

Item #M396 Surplus Cast Link Belt HT Material

Item #M394 Hi Tech Weighing System

Item #M381 Water Cooling System

Item #M380 Bronco Wheelabrator 36" Meshbelt

Item #M378 1 Surface Combustion Radiant Tube

Item #M370 SBS Quench Airs 3 Fan Units

Item #M366 Wheelabrator Rubber Belt Tumblast

Item #M365 Dual Lane Conveyor Washer

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 #M410

MAGNAFLUX MPI INSPECTION

Magnaflux MPI Inspection, with Magnaglo hood. Type H720 Special, Serial Number 70465. 120" Base, 600 Amps DC continuous, 6000 Amps intermittent, 24" Ring. Maximum part length is 92". Instruction Manual included. Unit is designed for semi-automatic inspection of various parts using Magnaglo continuous or residual wet method of fluorescent magnetic particle inspection. Unit features both circular and longitudinal magnetization over a wide range of parts.

Asking Price: \$11,750.00



ITEM #M409

GRAYMILL AQUEOUS/SOLVENT PARTS WASHER

Graymill Aqueous/Solvent Parts Washer. TR-Series 795-92561 12-11. Tank Size 47" x 26 3/4" x 24" D, Heater to 180 F. No Platform in this equipment. Oil Separator OSEP-5. Rinse tank, RP tank, Containment. Good Operating Condition

Asking Price: \$1250.00 USD



ITEM #M408

SURFACE COMBUSTION POWER LOADING TABLE 30" WIDE

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

Asking Price: \$1,000 USD



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**

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 #M399

ECLIPSE BURNERS, RECUPERATORS AND SPARK IGNITERS

Eclipse Burners, Recuperators and Spark Igniters. All of these items are in “like new” condition and still in the original boxes. Vendor will sell as a complete package or as individual items. Recuperators; Eclipse Bayonet Ultra Recuperator, Assembly 101849-24 (5BU, 24” tube length, low pressure drop model). S/N 07-27834580-8 45 units in inventory.

Asking \$1840 USD each.

TFB Burners; Eclipse Therm thief V2.3, Model TFB23.030NP04NA9NXXR. Model: 030 – Burner Model 030, Fuel Type: N – Natural Gas (CH₄), Air Supply: P – Preheated Air, Burner Input: 04 – 201k-300k Btu/h (59-88 kW), Gas Piping Connection: N – NPT Gas Inlet Connections. Gas Orifice: A9 – 9.1mm. Air Pipe Connection: N – NPT Air Inlet. Air Orifice: XX – No orifice (for preheated air). Tube Length: R – 20 in. (507 mm). Cone Setting: C – 9.5mm. Flame Supervision: X – No Flame Safety. Gas Piping Orientation: 0 – Gas Inlet at 0 Degrees with Air Inlet at 0 Degrees. S/N 10S0101049-0001-6. Manufactured June/2012. 40 units in inventory.

\$695 USD each.

Spark Plug Igniters. Model # 100640-11. 40 units in cardboard tubes with bubble wrap.

\$100 USD each.



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 #M394

HI TECH WEIGHING SYSTEM

Hi Tech Weighing System. Excellent condition Hi Tech vibratory loading system suitable for a continuous furnace. Model PC 325-2 TEEDC, 460 VAC 60Hz, S/N 0546, built 03/09/02.

Asking \$6,000 USD.



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 #M378

1 SURFACE COMBUSTION RADIANT TUBE AND 4 SUPPORTS

1 Surface Combustion Radiant Tube and 4 supports. Brand New the cost was \$1,844 for the tube and \$448 each for the supports for a total of \$3,636 in 2014. The radiant tube is Surface Combustion inventory # 850628 and the support is part # 70R64/L. They are a set for a Standard Allcase furnace. One leg of the tube is 3/12 inches in diameter and 62 inches long. The other is 4 1/2 inches in diameter and 60 inches long.

Asking \$3,000 USD.



ITEM #M370

SBS QUENCH AIRS (2 AVAILABLE)

SBS Quench Airls (2 available). Manufactured by SBS Corp., these are air/oil quench oil coolers. Each is a 3 fan unit with disconnect and 480 volt. Suitable for a large continuous line. Installed indoors. Very good condition.

Asking \$12,500 USD each. Must be removed within the next few months All Offers Considered.



ITEM #M366

WHEELABRATOR RUBBER BELT TUMBLAST

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

Asking: \$55,000.00 USD.



ITEM #M365

DUAL LANE CONVEYOR WASHER

Dual Lane Conveyor Washer. Heated: Natural Gas. Dual Lane Washer Serial Number: 08-010 (2008). Max Temperature: N/A. Voltage: 480/3/60. Work Area: 11"W x 7"H. Each Lane External Dimensions: 8'W x 10'6H x 30'L – approx. Controls: Mounted and wired in an enclosure attached to the washer. Includes an Allen Bradley MicroLogix 1200 PLC and an Allen Bradley "Powerflex 4" VFD to control conveyor belt speed. Description: This washer has three (3) stages, wash/rinse/blow-off. This washer is gas fired using Eclipse burner and gas train with a Honeywell UDC digital temperature control. Spray nozzles are located on top, both sides and bottom. Condition: Very Good.

Asking: \$39,500.00 USD.



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.



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.



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.



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.



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.



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 # VF330 Surface 2-Bar Quench Vacuum Furnace

Item # VF329 Abar Ipsen HR46 X 72

Item # VF328 Abar Ipsen Model HS-26 Vacuum Furnace

Item # VF327 Surface Combustion Vacuum Temper Furnace

Item # VF326 Ipsen 924 Vacuum Furnace

Item # VF323 150 Ton Vacuum Hot Press (2 Available)

Item # VF322 Vacuum Sintering Furnace, 2,000 C

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 # VF301 Vac Aero 2 Bar Vacuum Furnace

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

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 # VF329

ABAR IPSEN HR46 X 72

Abar Ipsen HR46 X 72. Manufacturer: Abar Ipsen. Model: HR 46×72. Condition: Rebuilt in 2015. Very good condition. Hot Zone: 36"W x 24"H x 72" deep, Moly, New in June 2015. Elements: Moly. Controls: New Ipsen control panel, new in 2015. Temperature: 2400F. Diffusion Pump: 32" Varian Diffusion Pump (new in 2015). Current configuration has a 4-5' deep pit for the diffusion pump. Pumps: Stokes 212 mechanical pump was rebuilt in early 2016. Welch 1398 holding pump was rebuilt in 2015. Stokes 615 blower recently rebuilt. Spare Rebuilt Stokes 212 mechanical pump and Welch 1398 holding pump

available. Current footprint: 21' Wide (+ water surge tank which could be relocated 4'x10'x6'H). 24' Deep (+10' deep loader). 12' High. 5'x9'x5' deep pit for diffusion pump. Power: 480 Volts, 3 Phase, 60 Hz. Loader Included, 10' Long x approx. 3.5' Wide. 2-Tier TZM Moly Grid Fixture, 36" Wide x 72" Long x 18.5" Tall. Cold Trap: Liquid N2 fed Cold Trap. Status: Furnace was in production until January 1st, 2017.

Asking Price: \$350,000



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.

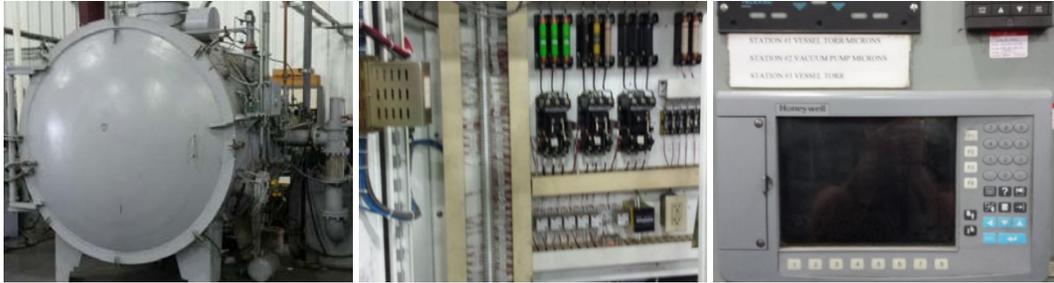


ITEM # VF327

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: \$85,000 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.



ITEM # VF323

150 TON VACUUM HOT PRESS (2 AVAILABLE)

(2) 150-Ton Vacuum Hot Presses

- Maximum Temperature: • 2000o C / 3632o F (Optional 2200o C / 3992o F operation available)
- Power Requirements: • 480 volts, 60 hertz, 3 phase (Optional 380 volt, 50 hertz operation available)
- Hot Zone Dimensions: • 16" high x 19" wide x 20" deep element-to-element (41cm x 48cm x 51cm)
- External Dimensions: • 99" high x 82" wide x 74" deep (251cm x 208cm x 188cm)
- Atmosphere: • High vacuum, rough vacuum, partial pressure, and atmosphere operation
- Features: • Standard one-year warranty. • This is a compact, packaged, and assembled unit. • Graphite hot zone and four-sided graphite heating elements for optimum uniformity. • Upper ram is moveable with 6" stroke. Bottom ram is fixed. • 16.3" daylight between rams (41.4cm) • Fully automatic operation with PLC programmer/controller with alphanumeric display to indicate hot press processing cycles. • Programmable closed-loop temperature/pressure control. This system will consist of a Yokogawa UP750 two-loop programmable temperature/pressure controller with 300 programs and 3,000 segments. The UP750 will control the temperature and the pressure on the hydraulic ram on the same timeline. • Mechanical vacuum pump.
-

Asking \$450,000 USD Each



ITEM # VF322

VACUUM SINTERING FURNACE, 2,000 C

Vacuum Sintering Furnace, 2,000 C. Horizontal Vacuum Sintering Furnace System for processing graphite and ceramics. Manufactured by AVS, Model HGF-22-21-62-2000. Work zone is 22" wide x 21" high x 62" deep. 12 cubic feet, maximum load of 350 kgs. Temperature: 2000 °C maximum operating temperature. Temperatures above 1700 °C require partial pressure or positive pressure. Maximum heat rate is 10 °C/min ramp rate for room temperature to 1600 °C, ± 10 °C uniformity @ up to 1600 °C in vacuum. Rotary piston roughing pump. Evacuates chamber to 20 micron in 10-15 minutes, empty (5×10^{-3}

Torr Ultimate vacuum) 5 μ /hr. leak rate. Process Gasses – Argon, Nitrogen, 1% Methane in Nitrogen. Controls Fully automatic operation with ACE™ control/ Data Acquisition System. **Chamber;** HORIZONTAL JACKETED CHAMBER – nominal 56" diameter x 82" long flanged, on legs. All stainless-steel chamber, interior jacket and flange water-cooled. Two door containing hinges and manual door clamps. The chamber includes a 4" flanged bottom port designed for future applications and flexibility. Two site ports are included and set up with gas purged pyrometer sight port assemblies. Two load carts with battery operated hydraulic lift and roller top are provided with the furnace for use with the two hearths that are provided for the hot zone.

Hot Zone; HORIZONTAL GRAPHITE FURNACE – Furnace is heated by graphite elements (no CFC) and insulated by rigidized graphite felt faced with graphoil. Includes heart rails with rollers for easy loading.

Gas Cooling; GAS RECIRCULATION COOLING SYSTEM – 10 HP Cooling fan and heat exchanger mounted in rear door of the chamber. Includes automatically operated front and rear door shutter fans for gas circulation. System is 9 years old, installed and in excellent condition. Almost \$600,000 USD.

Asking \$180,000 USD.



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.



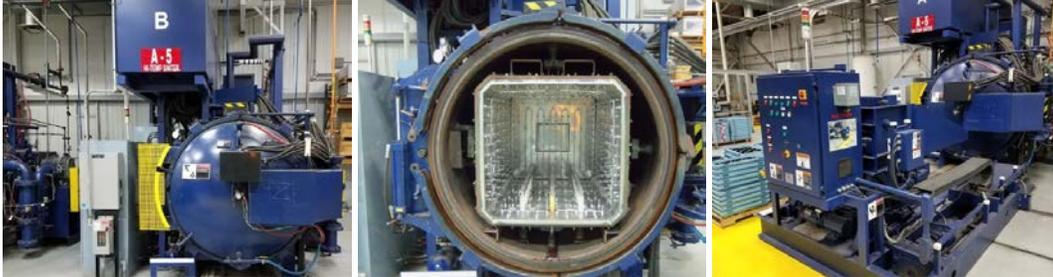
ITEM # VF317

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.



ITEM # VF301

VAC AERO 2 BAR VACUUM FURNACE

Vac Aero 2 Bar Vacuum Furnace. Model #VAH 4848-HV2. Working dimensions of 48" X 48", rated for 1500 pound loads. Serial #BM 981, built in 1998. Stokes vacuum pump #615-1. Serial number 915240E0498. Updated Allen Bradley controls. No diffusion pump but it does have a port for one. Good condition. Currently installed and in use for approximately 6 more weeks.

Asking Price: \$150,000 USD.



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.



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 10⁻⁶ Torr. Maximum vacuum level to operate in continuous duty is 5 X 10⁻⁸ Torr. The unit was designed to use N₂ 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 # VF291

SMALL TOP LOAD VACUUM FURNACE

Small Top Load Vacuum Furnace. Brew Top Load Vacuum Furnace, Condition: Rebuilt by Pathways Thermal Technology. Work Zone: 10" Dia. x 10"H. Max. Temp.: 2000F. Hot Zone: All Molybdenum. Vacuum: Diffusion Pumped. Power: 480V/3Ph/60Hz, 75 Amps.

Asking Price: \$10,000 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 X 10⁻¹ mbar, operating pressure 1000 mbar. Maximum vacuum level 5.0 X 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 +/- 8C. 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.

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 10⁻⁵ 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 10⁻⁵ 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.)



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 trays¹
- **Surface Combustion Allcase Tray**
- UBQ Furnace Tray
- **Site-specific custom trays**
- Based on existing castings
- **No setup or pattern fees²**
- Industrial alloy grades available
- **HU, HT, Super NA22H, ...**

Please send your enquiries to:

Jordan Montgomery
jordan@themonty.com
905-271-0033

¹While supplies last

²Applies 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 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.



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.



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.



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, Sales@customelectric.com.



Dry Coolers Inc. of Oxford,

Michigan makes closed loop process water cooling systems either Air Cooled, Evaporative Cooled, or Mechanically Re-frigerated. 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.



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.



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.

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 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 # 0351 Technical Sales Associate

Item # 0350 Maintenance Supervisor

Item # 0349 General Manager of Commercial Heat Treating Business

Item # 0348 Senior Account Manager

Item # 0347 Product Manager, Tech and Marketing

Item # 0346 Division Manager-OES (OEM)

Item # 0345 Multiple Positions Available

Item # 0344 Independent Board Member

Item # 0343 Account Manager, Surface Treatments & Metallurgical Coatings

Item # 0342 Induction Technician/Maintenance Person

Item # 0341 Maintenance Leader

Item # 0340 Heat Treat Metallurgist

Item # 0339 Welder / Assembler

ITEM # 0351 TECHNICAL SALE ASSOCIATE

Major manufacturer of industrial heat treating equipment, located in the Great Lakes area (USA), is interested in candidates for long-term career opportunities in the capital equipment sector. Currently seeking candidates for the following:

Technical Sales – We are seeking a Technical Sales Associate to become a part of our team to answer queries, provide pre-and post-sales technical advice and support our products.

Responsibilities:

- Provide support to the Sales and Application Engineering Group as well as to advance the development of new technology.
- Evaluate modular products with the group.
- Manage the transfer of technical information to our international licensees.
- Assist engineering and service with technical problems.
- Identify and establish new business
- Organize sales visits
- Connect with existing customers
- Prepare proposals and quotations
- Negotiate contracts, terms and conditions
- Review cost and sales performance
- Provide product education and advice
- Attend trade exhibitions, conferences and meetings
- Ensure that sales targets are met
- Conform to all policies & procedures within the company.
- Travel domestically and internationally as required to support new equipment sales activity.
- Interface with Sales Reps and Partners as required.
- Perform additional duties as assigned.

Qualifications:

- Engineering degree BSME, thermal minor preferred or comparable experience in industrial capital equipment sales
- Ability to read and interpret blueprints
- Strong computer skills
- Strong problem solving and critical thinking skills.

Compensation includes a full benefits package, competitive wages and bonus package.

Send letter of interest/resume/CV to: jobresume@mindspring.com

ITEM # 0350 MAINTENANCE SUPERVISOR

Maintenance Supervisor. Established Michigan Heat Treat in need of an experienced Heat Treat Maintenance Supervisor. Location is a 24/7 operation and uptime and scheduled maintenance are essential to success. We offer competitive wages and benefit packages

with 401k plan. This opportunity does not become available often. Position Responsibilities Include But Are Not Limited To:

- Works hands-on with crew during repairs and preventative maintenance as needed.
- Directs workers engaged in maintaining and repairing heat treat furnaces and ancillary equipment.
- Directs workers engaged in maintaining and repairing building structures and systems.
- Requisitions tools, equipment, and supplies.
- Studies production schedules and estimates worker hour requirements for completion of job assignment.
- Interprets company policies to workers and enforces safety regulations.
- Establishes or adjusts work procedures to meet production schedules.
- Suggests changes in working conditions and use of equipment to increase efficiency of work crew.
- Analyzes and resolves work problems, or assists workers in solving work problems.
- Initiates or suggests plans to motivate workers to achieve work goals.
- Maintains time and production records.
- Confers with other supervisors to coordinate activities of individual departments.
- Participate in the Company's Safety Committee.
- Lead and participate in 8D problem-solving methodology.
- Actively utilize, train, and pursue 5S methodology in all activities.
- Maintains awareness of and adherence to AI/AHT safety policy and rules and behaves with prudent regard for the safety and health of self and co-workers.
- Safeguards AI/AHT company property, including proper working condition of tools and equipment.

If you're interested in a challenging position with proven success and reward, Please forward your resume and salary requirements to Gary Czopp at gczopp@atmosphereheattreat.com

ITEM # 0349
**GENERAL MANAGER OF COMMERCIAL HEAT TREATING
BUSINESS**

General Manager of Commercial Heat Treating Business. Job Description:

- Full responsibility and authority for the successful operation of all functions of the business.
- Fluent in: heat treating, quality, developing and motivating people, safety / environmental, equipment, developing / executing strategic plans, managing P&L / Cash Flow, customer relations and concise report writing.
- Report to President (senior officer)
- Support from group engineer, accountant, finance, legal and Board of Directors

This is an opportunity to be as close to your own boss as you can get without taking the personal risk of starting your own company. Salary / Bonuses / Stock Options / Benefits commensurate with the position and performance.

Please submit resume to be considered for interview. Hubbardj1@aol.com

ITEM # 0348
SENIOR ACCOUNT MANAGER

Job Title: Senior Account Manager. Location: Detroit, MI. Reports to: Division Manager.

Position Summary: Responsible for establishing, maintaining and expanding assigned National accounts, coordinating marketing, building customer relations through mutually rewarding partnership and assisting with the expansion of new product introductions. Requires proven sales success and strong leadership capability ty.

Essential Functions/Examples of Duties:

1. Accomplishes or exceeds sales goals by creating action plans to support division market strategy as directed by the Sr. Division Manager.
2. Help manage a national sales force of NARs (National Account Representatives)
3. Manages pricing as directed by the Pricing and Planning Division
4. Current sales responsibility of over 20MM
5. Forecasting, addressing customers concerns and needs with a sense of urgency and ownership.
6. Identifies potential new product lines or marketing opportunities.
7. Develop, communicate and implement customer forecasts to management

8. Communicate market trends, new developments and competitive situations to management
9. Support new product and marketing launches and Initiatives
10. Identify and capitalize on KPI's, strategic planning, goal setting and attainment as they pertain to obtaining new business opportunities.
11. Development of a strong customer relationship using a consultative selling approach
12. Achieves a high level of customer development with an emphasis on partnership building. Works with customer to create partnerships that are mutually rewarding.
13. Coordinates associate resources (team) for business developments/ promotions as required to meet sales goal under the direction of Sr. Division Manager.
14. Generates program proposals and action plans based on marketing strategy.
15. Communicates product changes to the customer as required.
16. Supports the collection of past due customer accounts.
17. Supports Technical & Marketing team's market research. Supports the development of new strategies to expand the business as well as brand image/awareness.
18. Reports activities, problems, and results to Sr. Division Manager and appropriate Technical & Marketing Chief Engineer/ Product Manager following company policies and procedures.
19. Maintains current customer/industry knowledge through educational opportunities such as; training, professional publications, industry events and networking.
20. May supervise Account Representatives as assigned including training, developing work goals, coaching and reviewing performance. Leads and directs subordinates to high level of customer development with an emphasis on partnership building

The preceding functions are examples of the types of work performed by associates assigned to this job classification. Management reserves the right to add, modify, change, or rescind work assignments and to make reasonable accommodations as needed.

Minimum Requirements:

Education: BA/BS (technical degree preferred) or equivalent experience

Experience: 3-5 years Account Management experience

Product Specific: Automotive Lubricant background preferred . Knowledge of and experience with the automotive industry a HUGE plus especially genuine oil programs

Special Skills: Sales Planning Project Management Product Development, Price Strategy and Analysis

Supply Chain Management and Logistics, Outstanding communication skills including

presentations and public speaking. Strong computer skills including Microsoft Office and Dynamics CRM. Proven sales success and strong leadership skills.

Additional Information: Travel Required: 40% – 60%. Please send resume's to: awilkerson@ilacorp.com

ITEM # 0347

PRODUCT MANAGER, TECH AND MARKETING

Job Title: Product Manager, Tech and Marketing. Location: Detroit Office (Southfield, MI). Reports to: Chief Engineer

Position Summary: Charged with a product line contribution as a business unit. This extends from increasing the profitability of existing products to developing new products for the company. Develops products based on industry experience and requirements from customers and prospects. Possesses a unique blend of business and technical savvy; a big-picture vision, and the drive to make that vision a reality. Spends time in the market to understand market challenges and finds innovative solutions for the broader market.

Essential Functions/Examples of Duties:

- 1) Manage the product line from strategic planning to tactical activities. Working closely with all divisions, supports the development of marketing strategy including; finding new markets for current products, developing new products to meet market needs and setting strategies to improve profit margins.
- 2) Manages aftermarket datasets in ACES and PIES format as well as retail ERP data such as EPICOR.
- 3) Specify market requirements for current and future products by conducting market research supported by on-going visits to customers and non-customers
- 4) Drive a solution set across development teams (primarily Development/Engineering, and Marketing Communications) through market requirements, product contract, and positioning.
- 5) Supports Tech & Marketing team to coordinate label/artwork development and closely work with cross functional team and challenge them to ensure on time delivery.
- 6) Support Cross Sell. Gain approvals and support selling current products to additional ILA sales markets. (IE. OEM to Aftermarket, Passenger Car to Heavy Duty market, etc.).
- 7) Conduct product training for Customers and Idemitsu associates
- 8) Communicate information about new technologies, product developments and industry requirements to customers and appropriate associates within Idemitsu and its global affiliates
- 9) Communicate customer information to appropriate coworkers within Idemitsu and its global affiliates following company policies and procedures.
- 10) Help to develop product specification sheets and marketing literature using graphics packages such as InDesign or Adobe Photoshop Suite.
- 11) Maintains professional and technical knowledge by attending educational workshops; reviewing professional publications; establishing personal networks; participating in professional societies.

12) May supervise subordinates job results by leading, coaching and disciplining employees; planning, monitoring, and appraising job results.

The preceding functions are examples of the types of work performed by associates assigned to this job classification. Management reserves the right to add, modify, change, or rescind work assignments and to make reasonable accommodations as needed.

Minimum Requirements:

Education: BS/BA. Technical Bachelor's degree preferred (Mechanical/Chemical Engineering, Chemistry, Marketing).

Experience: Minimum 5-8 years of appropriate lubricant and or related industry experience as well as a minimum of 3 to 5 years proven product management, project management or sales experience.

Product Specific: Must have experience with automotive lubricants and an understanding of the development of these products. Understanding of North American AMO market, experience and familiarity with managing datasets in ACES and PIES format is necessary. Experience with retail ERPs like, EPICOR is highly preferred. Experience with InDesign or Adobe Photoshop preferred.

Special Skills: Strategic Planning, Market research, Marketing, Product Development, Proven sales success, Project Management, Outstanding communication skills including presentations and public speaking. Strong computer skills including Microsoft Office and Dynamics CRM. Must be able to research new markets and help develop new business strategies; work in both a team and independent environment

Additional Information: Travel required, 40 to 60%. Please send resume's to: awilkerson@ilacorp.com

ITEM # 0346

DIVISION MANAGER-OES (OEM)

Job Title: Division Manager-OES (OEM). Location: Southfield, MI. Reports to: Vice President, Sales/Director, Sales. Division: OEM. Position Summary: Develops action plan to support Division market strategies. Meets or exceeds Division sales targets by implementing sales plans, coaching and monitoring sales associates.

Essential Functions/Examples of Duties:

1. Works with VP/Director of Sales and Technical & Marketing team to establish sales objectives by forecasting and developing annual sales quotas for regions and territories; projects expected sales volume and profit for existing and new products.
2. Works with Technical & Marketing Division to develop market strategies for assigned projects.
3. Determines annual volume target approach, by building action plans based on marketing strategies.
4. Prepares and executes detailed field sales plans targeting division market strategy.
5. Provides regular status updates (activities, problems, results) to the Director.
6. Maintains sales volume and product mix by keeping current with supply and demand,

changing trends, economic indicators, and competitors.

7. Develops strategies that will strengthen customer relationships by supporting customer objectives.

8. Prepares Division reports and presentations.

9. Creates and controls Division budget.

10. Maintains division sales staff by participating in the recruiting, selection, orientation and training of sales associates.

11. Completes division sales operational requirements by scheduling and assigning employees; following up on work results.

12. Maintains division sales associate job results by leading, coaching and disciplining employees; planning, monitoring, and appraising job results.

13. Maintains professional and technical knowledge by attending educational workshops; reviewing professional publications; establishing personal networks; participating in professional societies.

The preceding functions are examples of the types of work performed by associates assigned to this job classification. Management reserves the right to add, modify, change, or rescind work assignments and to make reasonable accommodations as needed.

Minimum Requirements. Education: BA/BS -technical degree preferred (engineering, chemistry) Experience: Min. 5 years Sales Management + 5 years account representation in lubrication oil sales. Knowledge of local market, customer and vendor communities. Proven ability to lead, coach and inspire team to achieve.

Product Specific: Automotive and/or Industrial Lubricant/Chemical background preferred. Knowledge of and experience with the automotive or manufacturing industry a HUGE plus.

Special Skills: Sales Planning, Project Management, Product Development, Price Strategy and Analysis, Supply Chain Management and Logistics, Outstanding communication skills including presentations and public speaking, Strong computer skills including Microsoft Office and Dynamics CRM, Proven sales success.

Additional Information: Travel Required: 40% – 60%. Please send resume's to: awilkerson@ilacorp.com

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, Main: (860) 627-7015, Fax: (860) 627-9964.

ITEM # 0344
INDEPENDENT BOARD MEMBER

Independent Board Member. Board Member: Privately held, Midwest based, heat treat company desires to retain an independent Board member with significant leadership experience in the heat treat industry. Candidates must be able to evaluate and provide insight on the operations, business model, growth and operational strategies, underlying business assumptions, operating performance metrics and executive leadership of the company. Board members must attend 4 – 5 Board meetings a year, as well as participate in telephonic meetings as needed should key strategic decisions be required between in person meetings. Weekly operational and financial information, including key performance indicators, distributed by management are expected to be timely reviewed and analyzed.

Experience: Fifteen years minimum experience in the C-Suite of a heat treat company, with demonstrated knowledge of equipment lines and processes. Former director experience a plus.

Compensation: D&O liability insurance, competitive compensation and expense reimbursement (including all required travel) are provided.

If you want to further explore this opportunity, please send your resume to heattreatdirectorposition@gmail.com

ITEM # 0343

**ACCOUNT MANAGER, SURFACE TREATMENTS &
METALLURGICAL COATINGS**

Account Manager, Surface Treatments & Metallurgical Coatings.

Key Qualifications:

- 3 to 5 years of experience in technical industrial sales, preferably in metallurgical services such as heat treatment, electroplating, nitriding, PVD / CVD coatings etc. to automotive and/or industrial equipment/ component manufacturers.
- 4-year science / engineering degree, preferably in Metallurgical or Mechanical engineering, or equivalent relevant industry experience.

HEF USA, a subsidiary of HEF Group, is expanding its jobbing service network in the US and is seeking 2 experienced Account Managers to generate sales for our Springfield, OH and Phoenix, AZ facilities respectively. HEF Group operates a global service jobbing network

that provides its nitriding treatments and PVD coating services to manufacturers of automotive components and precision components used in industrial equipment such as pumps, valves, compressors, mechanical drives etc For more information about HEF USA, please visit www.hefusa.net.

Location:

One position reports to our Springfield, OH headquarters; the other to our Phoenix, AZ facility.

Job Responsibilities:

Generate jobbing revenue for our Group's Liquid Nitriding treatment and PVD Coating services within the following segments:

- Automotive components that could benefit from reduced friction and improved corrosion and wear resistance.
- Industrial machinery: Sliding and rotating precision components used in – Hydraulic & Pneumatic equipment; Power Generation; Oil & Gas; Construction equipment; Mechanical Drives; General Mechanical components etc.

Account Manager Job Duties:

- Identify current and future customer requirements; provide product and service related technical and engineering information;
- Understand the technical and product performance issues being faced by the customer and convey the relevant details to HEF Application Development engineers; coordinate testing at customer location and provide performance feedback to facilitate the development of optimum solutions.
- Prepare price quotes by studying blueprints, plans, and related customer documents; consulting with engineers, and other technical personnel.
- Prepare sales reports by collecting, analyzing, and summarizing sales information, engineering and application trends.

Other Skills/Qualifications:

- Excellent interpersonal, verbal and written communication skills are required. Ability to communicate effectively with various stakeholders within the customer's organization – product engineers, purchasing, operational managers etc.
- Ability to do cold-calling.
- Experience in managing multiple accounts through the various steps of application development, product launch and on-going account maintenance.

Compensation Package:

We offer a competitive salary, bonus plan, car allowance, excellent health benefits and 401(k) plan, etc. If you want to further explore this opportunity, please send an e-mail to Michel Morin (mmorin@hefusa.com).

ITEM # 0342
INDUCTION TECHNICIAN/MAINTENANCE PERSON

Induction Technician/Maintenance Person. Looking for a person with experience in the Induction Heat Treating Equipment operations and maintenance. Candidate must have electrical experience, hydraulic and pneumatic knowledge and plc programming and troubleshooting knowledge. Brazing and welding experience is a plus. Compensation based on skills and knowledge. Excellent benefit package. Pay commensurate with skills and knowledge.

We are located in the Northeast Ohio. We are a full service heat treating company with integral quench batch equipment, continuous equipment, vacuum heat treating equipment, and induction equipment. In business 72 years. This is a “Hands On Job” at a fun place to work. johnv@euclidheattreating.com

ITEM # 0341 MAINTENANCE LEADER

Maintenance Leader. Summary: Medium sized MTI member batch heat treatment company located in Southeast Pennsylvania. Company serves a national market, providing atmosphere and vacuum heat treatment services. Successful candidate will lead preventive and routine maintenance of all equipment used in the plant. Responsibilities include the troubleshooting of combustion and electrical systems, leading the maintenance team in maintaining the heat treat furnaces. Must be capable of organizing activities to minimize production interruptions. Works with shop personnel and contractors on projects.

Education:

Must be at minimum a high school graduate with a trade related program. Experience or continuing education credits in maintenance practices, from an accredited training school or manufacturers’ training program would be a plus.

Experience:

Five years minimum experience in a heat treat environment, with demonstrated knowledge of burners, electrical heating and process controls. Must be able to understand and interpret mechanical drawings and technical information, and to independently solve problems with electro mechanical devices.

Competitive Compensation based upon skill sets and experience. This is a full-time position with a competitive wage and benefit package that includes medical, disability, and life insurances, 401(k) plan. Please submit resume to: Tmckeown803@gmail.com

ITEM # 0340 HEAT TREAT METALLURGIST

Heat Treat Metallurgist

Summary: Medium sized MTI member batch heat treatment company located in Southeast Pennsylvania. Company serves a national market, providing atmosphere and vacuum heat treatment services. Successful candidate has a ferrous based metallurgy core, has knowledge of all equipment and processes in plant. Experienced with heat treat job shop techniques, familiar with quality standards and methods. Position requires management of direct reports, interaction with other supervisors. Team leader, practical, hands on, ability to communicate. Takes charge.

Education:

Degreed metallurgist preferred, or equivalent experience, core competency in ferrous metals

Experience:

Three years minimum in a heat treat company, with working knowledge of heat treat equipment and controls for atmosphere and vacuum furnaces. Working knowledge of heat treat processes with a heavy focus on carburizing and nitriding.

Familiar with standards, quality systems, understands testing, metallography

Skills:

Ability to write and interpret instructions, develop written plans and instructions

Ability to analyze and solve problems Ability to communicate and lead others

Team leader, ability to communicate and work under pressure

Competitive Compensation based upon skill sets and experience. This is a full-time position with a competitive wage and benefit package that includes medical, disability, and life insurances, 401(k) plan. Please submit resume to: Tmckeown803@gmail.com

ITEM # 0339 WELDER / ASSEMBLER

We are seeking a Full-Time, Highly experienced, Metal Working, Machine Tool Builder / Assembler candidates. As a Welder / Assembler, you will be responsible for assembling components according to blueprints, manuals, and engineering requirements. Responsible for construction, rebuilding, product fit up, system assembly and tryout, and adhere to customer specifications for Heat Treating Equipment.

Responsibilities/Duties:

- Read, understand and follow engineering prints, shop orders, and standard work documents to accomplish the assembly, rebuild, and plumbing of machines.
- Knowledge and skills to assemble units and complete tools to design specifications
- Able to work with other personnel and customers in a professional manner
- Rework, repair, and rebuild any used or existing tooling to be remanufactured
- Able to fit product to tooling to achieve repeatability and dimensional quality

- Travel up to 50%
- Perform all other duties, as assigned

Job Skill Requirements:

- 5+ years recent experience at OEM with mechanical assembly and machine building
- Knowledge of manufacturing Heat Treating Equipment
- Some Electrical Experience and troubleshooting
- Ability to read and interpret blue prints, schematics and engineering drawings
- Able to operate overhead cranes and fork trucks
- Must have own tools
- Be eligible to work in the U.S.
- Valid Driver's License

Educational Requirements:

- High School Diploma or GED

Physical Requirements:

- Standing

We are proud to offer a work environment where people can do their best. We offer an excellent compensation package including a competitive base salary, comprehensive health, life, dental and disability insurance. Equal Opportunity Employer
Minorities/Females/Veterans/Disabled Welcome.

NOTE: **Reasonable relocation assistance is open for discussion.

SHarrod@diablofurnaces.com

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 Your ad will appear both on the website themonty.wpengine.com and in our monthly newsletter "**The Monty**".

ITEM # SE 002

MANUFACTURING/PROCESS ENGINEER SEEKING POSITION IN HEAT TREATING FIELD

Manufacturing/Process Engineer Seeking position in Heat Treating Field. Summary of Skills: Worked for 8 years with 2 vacuum furnaces and a Titanium sintering process for the medical device industry. Moved the process from laboratory to production. This included establishing cooling systems for the furnaces, establishing and monitoring processes, directing repairs, procuring vendor intervention when necessary, and various quality projects to monitor the output of the process. Worked with various departments to eliminate waste and schedule work. Established annealing process and specifications for Direct Metal Laser Sintering product output. Knowledge of powder metallurgy, Isostatic presses, machining pressed blanks, and sintering finished product. Currently looking for a challenging engineering position in the heat treating Industry. Please e-mail me at <mailto:kejones.eng@gmail.com> for a complete resume.

ITEM # SE 001

MANUFACTURERS REP LOOKING FOR LINES TO ADD

Manufacturers Rep Looking for Lines to Add. I have been a Manufacturers Representative in the US Midwest for 30+ years and I am looking for a few lines to represent on a commission+ basis. The lines have to compliment the Thermal Processing Industry. Please contact me for more information at [216 217- 7769](tel:2162177769) rosannemccay@gmail.com

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.

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