



THE MONTY

Everything to do with heat treating

HEAT TREAT NEWSLETTER

If you would like the information contained in this newsletter daily instead of monthly, visit us at www.themonty.com daily & you don't have to wait for the most up to date, relevant Heat Treat News in the industry.

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INTRODUCTION

The May issue of “**The Monty**” at a little over 100 pages is pretty typical in size for our monthly newsletters. This issue consists of approximately 30 pages of the most up to date news in the industry and 70 pages of used equipment listings which deserves a mention. For almost 20 years “The Monty” has been putting buyers and sellers of used equipment together on a commission basis and it has proven to be an unqualified success for all involved. As a seller you are agreeing to a non exclusive agreement meaning it costs you nothing unless we get results, as a buyer you get the most competitive pricing in the industry. Have questions? Interested in a free appraisal of your equipment? We would be happy to answer your questions.

Best regards,
Gord

HEAT TREAT NEWS

GALVAMET To Install 6th SECO/WARWICK Vacuum

Commercial heat treater GALVAMET in the Czech Republic will be installing a 10 bar vacuum furnace provided by SECO/WARWICK, the sixth in this series to be installed by SECO. The new system will increase their production capacity for the heat treatment of components for the aviation sector.

“GALVAMET has been cooperating with SECO/WARWICK for a few years now. SECO/WARWICK has been the partner that fully understands our business needs and delivers innovative and state-of-the-art technologies, increasing our production capacity and improving the finished quality of our heat-treated products. With the addition of the SECO/WARWICK high vacuum furnace, we aim to deliver excellent and durable parts to our demanding customers in the most cost-effective way” said Ales Slechta, Executive Manager of GALVAMET. SECO/WARWICK’s long term cooperation with the leading manufacturers of components used for production of airplanes, automobile, tools and others, along with the extensive industry knowledge and access to the latest technologies, has made our solutions the solutions of choice. The system which is going to be installed at the GALVAMET facility guarantees that our customer will produce the best quality products and meet the requirements of AMS2750E,” said Maciej Korecki, Vice President, Business Segment Vacuum at SECO/WARWICK.” April 28, 2017



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 website@themonty.com or 905-271-0033. April 28, 2017

Item # B428 Carbottom Furnace 1800 F

Item # VF316 AVS Vacuum Furnace New Low Price

Item # VF315 AVS Vacuum Furnace (Rebuilt) New Price

Item # T341 Temper Furnace 36" X 48" X 36"

Item # VF321 Vacuum Sintering Furnace, 2,000 C

Item # VF317 Twin High Temperature Vacuum HT & Sintering Furnaces. MOLY HOT ZONES, EXCELLENT CONDITION, EXCELLENT PRICE!



Achieving Increased Profits and Resilience Times with Atmosphere Furnace

This customer was relocating their existing facility they could continue to grow and advance. As a result, new equipment they chose needed to ...

[Read the customer story.](#)



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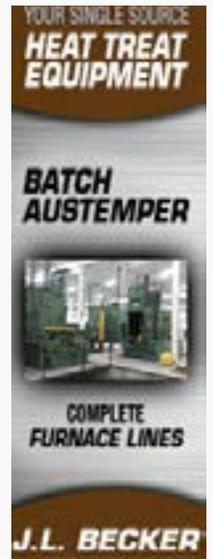
Forge USA Auction

Coming up later in May all of the equipment at Forge USA is going to the auction block. There will be a lot of equipment available including the very large in house heat treating department which consists mainly of large box furnaces. Because of the number of furnaces we were mildly curious until speaking with a friend who knows the shop well. To cut a long story it sounds like most of the furnaces are home made and in a very "used" condition to put it politely which is not surprising considering it is a closed down forge shop. April 28, 2017

Should We all be Very, Very Worried?

3D Printing fascinates us at "The Monty" but when we read about systems that incorporate heat treating our first thought is-should we be worried that real heat treating is disappearing? We're sure not today or tomorrow but 10 years from now it might be a new world. In the photo below the sintering furnace can be seen on the right.

"Desktop Metal, a company dedicated to bring metal 3D printing to the next level, has launched two new systems to help it achieve its goal in style. Called the DM Studio and DM Production systems, the two new printers promise to cover every step in the metal printing process from prototyping to mass production, with the ability to 3D print custom objects out of alloys including steel, aluminum, copper, and titanium. Best of all? While previous 3D metal printers have often been limited in terms of their speed and accessibility, Desktop Metal's "microwave enhanced sintering" process makes 3D metal printing as straightforward as printing in plastic. "The DM Studio System was designed to bring metal 3D printing to the shop floor by allowing engineering and design teams to make complex metal parts faster, without the need for special facilities or dedicated operators," Desktop Metal CEO Ric Fulop told Digital Trends. "We expect a number of industries to be interested in a Studio system, including automotive, manufacturing, and consumer products. It is ideal for prototyping and low volume metal 3D printing needs." The DM Production System, meanwhile, can handle your high volume production. It can produce an astonishing 8,200 cubic centimeters of metal objects every single hour, making it a massive 100x zippier than previously-available machines. As much as we might lust after these creations, though, they're intended for industry more than they are for home maker studios. According to Fulop, Desktop Metal has already had interest from several Fortune 50 corporations with an interest in additive manufacturing, including BMW, Caterpillar and Lowe's. The Studio System starts at \$49,900, and costs more than twice that if you opt for the full printer, debinder, and furnace combo. The Desktop Metal Production system, meanwhile, costs \$420,000 to purchase. Both are available for pre-order in May, although you'll be waiting until September for the Studio System and early 2018 for its high volume big brother." April 27 2017



Linamar Machine/Justin Trudeau

Auto parts supplier and large in house heat treater Linamar Machine had a well known visitor to their headquarters in Guelph, Ontario, Canada yesterday-Justin Trudeau, Prime Minister of Canada. In this photo Justin is flanked by Linamar founder Frank Hazenfratz and the President of the company Linda Hazenfratz. Linamar is fast becoming one of the most successful auto parts suppliers in North America and has invested enormously in their heat treating capabilities in North America and around the world. April 27, 2017



Heat Treating in the US Northeast

Early this week we had some comments regarding heat treating in the US Northeast and how it is a challenging, changing area these days. One of the largest commercial heat treats in the area, Solar Atmospheres confirms that yes it can be a tough area.

"Heat Treating in the North East has never been a cake walk. When my son Roger and I started Solar Atmospheres in 1982 I was told the Philadelphia Market was dying and we would never make it. In fact a number of HT companies were running trucks from North Jersey here and the remark to me was this was their market "just leave". Yes we have seen huge changes and 20 years ago one could survive heat treating tooling and the like. Fully 2/3rd of that market is gone today but those shops that remain have specialized into more sophisticated jobs that require diverse heat treating methods and more sophisticated furnaces, processes, quality control, and continual marketing, and R&D effort. Today we have departments dedicated to just that. This has required large \$ investment yr/yr in plant, furnaces, and advanced personnel, and particularly to stay ahead of off shore manufacturers. Yes, we are survivors with our family business into the third generation with an excellent management team in place and we plan to be here well into the future. " William R. Jones, CEO, FASM, Solar Atmospheres Inc., Souderton, Pa. April 27, 2017

Solar Manufacturing

Recently an article appeared in Crains Cleveland Business news describing the company Component Repair Technologies (CRT) in detail. The article featured a photo of a large vertical vacuum furnace. Although not mentioned in the article, the vacuum furnace is Solar Manufacturing, Inc. designed and



built, specifically to CRT requirements.

The Solar Manufacturing furnace is a workhorse for their operation. The furnace was put into operation over five years ago, and to date has logged more than four thousand cycles. It is in use virtually 24 hours a day, seven days a week. The large furnace pictured has a working hot zone 84" in diameter by 60" high and will operate to 2400 ° F in high vacuum conditions. The furnace has a weight capacity of 5,000 lb. on the hearth and includes a 300 HP motor fan and heat exchanger for rapid argon gas quenching at up to two atmospheres overpressure. Under heating and in the vacuum mode, the furnace operates to the mid-10-5 Torr vacuum range – approximately the vacuum level on the surface of the moon. This information is supplied by William R Jones, CEO, Solar Manufacturing, Inc. For more information about Solar Manufacturing, please contact Pete Reh at 1-267-384-5040 x1509, or via email pete@solarmfg.com. April 26, 2017



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 website@themonty.com or 905-271-0033. April 26, 2017

Heat Treating Manager/Metallurgist/Materials Engineer Wanted

Direct Hire for Sales

Service Technician Wanted

Heat Treat Salesperson Wanted-Poland

Donovan Heat Treating Co./Flame Treating & Engineering Co.

Both Donovan Heat Treating and Flame Treating & Engineering Company have been mentioned on this site very recently, both for the wrong reasons namely that they have closed their doors (Donovan) or will be closing their doors (Flame Treating). Donovan Heat Treating in Philadelphia, PA was a commercial heat treater specializing in annealing, tempering and stress relieving of large parts in carbottom furnaces. Flame Treating is a commercial operation in West Hartford, CT, offering flame hardening and Induction heat treating. A very superficial look at the two would suggest that they have little in common however that would be incorrect-the two companies have a great deal in common, probably more than they realize. From what we have heard each was run by a competent, very experienced and very hard



working individual and both companies have a long, rich history, 74 years in one case, 77 years in the other.

The common denominator is that the market has changed and these companies had not. The US Northeast is an expensive area to do business in with the result that other than the aerospace and defense industries (high value added industries) most others have fled to lower cost areas such as the Southeast and Mexico. With all due respect to both companies what they were offering was or is low tech, low margin heat treating and when their customers left for other areas they each had little to offer to the manufacturers in the area that have remained. As part of a small family business I have an enormous amount of sympathy for the owners and employees of each company but at the end of the day you adapt or die, neither company appeared to adapt to the changing conditions. April 25, 2017

PhoenixTM Press Release

“PhoenixTM have recently supplied one of their ‘Hot Box’ brazing systems to a major supplier of aluminum radiators, condensers, evaporators, etc. to the auto industry. The system will be used in their CAB (Controlled Atmosphere Brazing) furnaces where temperature profiling is carried out on a daily basis to ensure consistently high product quality. Temperature monitoring in CAB furnaces is an application where the profiling system is more frequently used than in any other heat treatment process, and in the past the atmosphere within the furnace has caused profiling systems to rapidly deteriorate due to acid attack from the brazing flux chemicals. However the design of the PhoenixTM thermal barrier prevents any corrosion of the thermal barrier, which was the main reason this system was selected. For more information contact: info@phoenixtm.com. www.phoenixtm.com. <http://www.phoenixtm.com/en/news/industry-applications> (white paper: Aluminium Brazing – System Design for Temperature Profilers)”
April 25, 2017



PhoenixTM aluminum brazing system enters the furnace with product. Detail of system Inset

Monday Morning Briefing

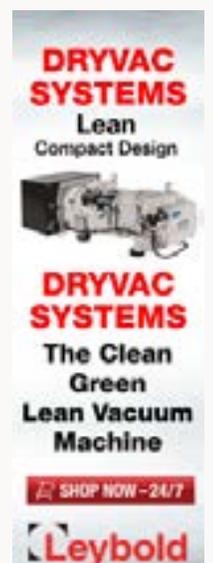
Do you ever get the feeling that there are about 50 different types of nitriding each with it's own trademarked name? We certainly have felt that way over the years so when we ran across an article called **Variants in the nitriding process**: Do trade names affect outcomes? We were interested. The whole article can be found on the Paulo website <http://www.paulo.com/> (Paulo is of course one of the largest commercial heat treaters in North America). This is a brief extract from the article; *“The truth about trademarks; Trademarked heat treatments give customers the impression that nitriding processes differ wildly from one another. The opposite is true: The ways nitrogen and carbon are supplied to part surfaces can be subtly tweaked —and therefore patented— but they all achieve similar part characteristics. Because different trade names often only indicate different means to reach an identical end, it's important to understand the end first and then work backwards into finding the appropriate heat treatment.”*

Furnace builder **Nutec Bickley** in Mexico has issued a press release about commissioning a new box furnace in California. The company also recently received an order for two aluminum drop bottom ovens from a customer in Monterrey. *“Nutec Bickley has completed the commissioning of a new Box Furnace for an Aerospace supplier in Southern California, USA. The equipment is used to produce Titanium Forge rings used on the jet engines. The equipment complies with the AMS2750E requirements and other “end user” critical temperature uniformity requirements. The job was delivered on a turnkey basis. The customer has confirmed their satisfaction on the overall design and job execution and equipment performance.”* The photo below shows the box furnace. In related news the company recently parted ways with their Business Development Manager, Mr. **Joe Martin** who was based in Florida.



Earlier we mentioned how there are many different trademarked names for the Nitriding process, however the best known in the world is **Nitreg®** offered by **Nitrex Metal Inc.**, based in Montreal, Quebec, Canada who has installations in 20? 40? 50? countries around the world-we are not quite sure. We mention them today because we understand they have just received an order for two gas nitriding systems from a commercial heat treater in Florida. We mentioned Nitrex in Canada we might as well mention a couple of other Canadian news items. **Metex Heat Treating** in Mississauga, Ontario is adding a fourth building in the very near future. The company is fast becoming one of the largest commercial heat treaters in North America when it comes to processing fasteners and this is in addition to their Induction and batch IQ capacities which also are growing. Last week we announced the upcoming SSI (furnaces controls) heat treat seminar May 2 in Mississauga. This is almost a sold out event with at least 40 individuals from 15 companies attending.

Park Thermal Press Release; *“Park Thermal International (1996) Corp., a leading supplier of Thermal Processing equipment since 1938 recently delivered and commissioned a fifth Electric Atmosphere Annealing Furnace, 48” wide x 36” high x 162” long, 20,000 Lbs capacity, 254 KW (2 zones of control), 1,600°F. This robustly built furnace is complete with ceramic fiber insulation, vertical rising door, rod over-bend heating system, Nitrogen Atmosphere, three roller rails with wheels, three recirculating fans and powered cooling. The furnace includes a free standing control panel complete with Digital instrumentation, chart recorder and SCR control.”*



To round things out we congratulate **Eric van Bree** on becoming Plant Manager of the **Bodycote** (commercial heat treating) facility in Diemen, Netherlands. Eric has been with the company for almost 20 years and he has been in this position for just a month now. April 24, 2017

Ipsen USA Ships 8 Vacuum Furnaces

Focused on providing advanced equipment and comprehensive support to industries around the world, Ipsen USA recently shipped eight vacuum heat-treating systems to customers in Costa Rica, India, Germany and the United States. This equipment will be used to support the Additive Manufacturing, Aerospace, Medical, MIM and Tooling industries. Several customers also took advantage of Ipsen's full-scale support offerings, including Ipsen U training, spare parts kits and installation.

The vacuum furnaces shipped included a vertical MetalMaster® furnace with a 5,000-pound (2,268 kg) capacity; a custom-built furnace for debinding and sintering; horizontal MetalMaster and TurboTreater® furnaces; a TITAN® DS (debinding and sintering) furnace; and several H2- and H6-sized TITAN vacuum furnaces equipped with the PdMetrics® software platform for predictive maintenance. This software platform securely connects to a network of integrated sensors on the furnace to gather and analyze data, run algorithms and provide real-time diagnostic that improve the health and integrity of the equipment.

To best support these industries, Ipsen's global ICS (Ipsen Customer Service) Team facilitates system installations, as well as provides expert training, startup assistance and 360° support throughout the entire life span of the equipment for any brand. You can learn more about the extensive support and training they offer at www.IpsenUSA.com/ICS. For immediate technical support, to order parts, schedule service and more, call the Aftermarket Support Helpline at 1-844-Go-Ipsen (1-844-464-7736).

About Ipsen; Ipsen designs and manufactures industrial vacuum and atmosphere heat-treating systems, supervisory controls systems and predictive maintenance software platforms for a wide variety of industries, including Aerospace, Automotive, Commercial Heat Treating, Energy and Medical. With an extensive network of global locations and partnerships in America, Europe and Asia, along with representation in 34 countries, we continue to provide expert-driven solutions that strengthen heat treatment throughout the world. April 21, 2017



C3 Data

We welcome our newest advertiser C3 Data whose rather intriguing “video” ad can be found at the top right hand side of this page. Run by Nathan and Matt Wright C3 Data says this “Nadcap & CQI-9 Compliance Made Easy”. For some background about the company we would suggest an interview which we did with Nate at the ASM heat treat conference in Mexico last September <http://themonty.wpengine.com/Nathan-Wright/> April 21, 2017



Advanced Heat Treat Corp.

Advanced Heat Treat Corp. is pleased to announce the addition of Mark Hemsath to their Executive Team as Director of Sales and Marketing. In this leadership role, Mark will drive business opportunities for the company's four U.S. locations in Iowa, Alabama and Michigan. He will be working closely with the AHT sales force to solve part performance problems by offering surface treatment solutions such as Ion/Plasma and Gas Nitriding, FNC, UltraOx® and conventional/traditional heat treat methods such as Carburizing, Induction Hardening and Through Hardening.

Hemsath holds a Bachelor of Science Business degree from Miami University and Master of Business Administration from the University of Toledo. He brings 30 years' experience from the heat treat furnace sales arena to AHT and has an extensive engineering-based background, most recently with Seco/Warwick as their Thermal Group General Manager.

“I thoroughly enjoy the technical sales process and solving engineers' challenges by offering them the benefits that come with AHT's surface treatment solutions. Satisfying customers is my true love and I look forward to personally meeting AHT's current customer base while also developing new relationships.” Stated Mark. April 21, 2017



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McLaughlin Services 10th Anniversary

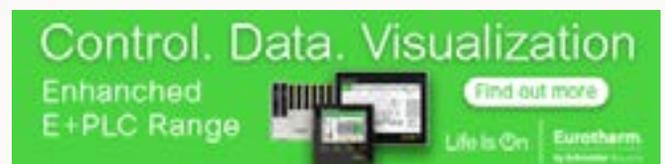
McLaughlin Services LLC is proud to announce its Tenth Anniversary in business. Founded in 2007 as a maintenance and repair shop, McLaughlin Services quickly expanded into field service and building new furnaces and heat treat equipment. Its founder, Jeff McLaughlin, started his career as a maintenance manager at his family's heat treating business. Gaining hands on experience with the furnaces, he quickly learned how to make the furnace designs more reliable and operator friendly. He took this expertise and started building his own equipment. Utilizing the innovative designs, McLaughlin Services produces world-class furnaces and endogas generators engineered to perform and built to last. As a testament to their quality and service, their very first customer is still an active, satisfied customer today. In the past ten years, McLaughlin Services has grown into the largest furnace rebuilder in America, and one of the fastest growing furnace OEMs in the world. Headquartered with a state-of art manufacturing facility in Avilla, Indiana, McLaughlin Services also has a sales & service office in California. Congratulations to McLaughlin Services for their first ten years, and may their next ten years be even more successful! April 20, 2017



ALD Receives Contract for Third SyncroTherm® For The North American Aerospace Industry

“(April 2017) ALD Vacuum Systems, Inc., Wixom, MI, has received a purchase order from a North American based aerospace manufacturer for a SyncroTherm brand, fully-integrated vacuum heat treating system. This system will primarily perform Low Pressure Carburizing (LPC) and is the direct replacement for two (2) vintage batch IQ atmosphere carburizing furnaces. In addition to LPC, the unit will also perform austenitizing, vacuum brazing, gas quenching, cryogenic treating and tempering. This fully integrated, compact heat treating cell will be among the first known captive LPC operations west of the Mississippi.

ALD continues to expand the SyncroTherm presence in the heat treating world with applications for the automotive drivetrain, consumer tool, textile, bearing, commercial heat treating, hydraulics, aerospace and fuel systems markets. This will be the 3rd SyncroTherm to support the needs of NADCAP (National Aerospace And Defense Contractors Accreditation Program) and it will be comprised of five (5) independently controlled hot zones, each rated for load sizes of 24”x20”x9” high and up to 110 pounds. SyncroTherm systems operate using recipe selectable high pressure gas quench, and incorporates support processes such as cryogenic and temper sequences in a fully automated, lights-out fashion.



Individual part tracking and complete process history retention are key functions within the system along with a consistent process cadence.

About ALD Vacuum Systems Inc.; ALD Vacuum Systems Inc. is located in Wixom, MI and focuses on the NAFTA region for the ALD Vacuum Technologies GbmH group of companies. ALD brings high performance vacuum carburizing, vacuum nitriding and vacuum furnace automation to the vacuum furnace market. ALD offers the world's leading technology in high pressure gas quenching equipment and is prepared to meet your specific vacuum heat treat equipment requirements. For additional information on our vacuum based product offerings call ALD Vacuum Systems, Inc. at (248) 956-7612 or visit their website at www.aldvac.com." April 20, 2017



Donovan Heat Treat Auction

October of 2016 we mentioned how commercial heat treater Donovan Heat Treating Company was closing their doors; *"Donovan Heat Treating Company, Inc./ Philadelphia, PA. We have been informed that commercial heat treater Donovan Heat Treating in Philadelphia filed for Chapter 7 Bankruptcy 10/12/2016, Bankruptcy Petition # 16-17234-jkf. Donovan is a family owned and well respected heat treater and it is upsetting to hear that a company that has been around since the 1940's finds themselves in such straights."* May 17 2017 all of the assets will be sent to auction. This includes the furnaces themselves which consist mainly of large carbottom furnaces for which there is not a large demand these days unfortunately. April 19, 2017



J.L. Becker Company/East Carolina Metal Treating

"J. L. Becker, a Gasbarre Furnace Group Company, recently manufactured, shipped and commissioned a complete IQ Furnace line at the East Carolina Metal Treating facility in Raleigh, NC. The system is configured to process 36" wide by 48" long by 36" high workloads that weigh up to 4,000 lbs. and includes an Integral Quench Furnace, two (2) Temper Furnaces, a Spray and Dunk Washer, a Powered Load Transfer Cart, a scissors lift table and two (2) stationary load tables. According to Jamie Ramm, President of ECMT, the new line reflects the company's long tradition of continually improving their ability to provide excellent service to their customers.

Located in Plymouth, MI, J. L. Becker, a Gasbarre Furnace Group company, has manufactured a full line

of industrial heat processing equipment for over 40 years, providing excellence in design, construction, and service. The equipment includes both batch and continuous systems and specializes in Tip Up, Box, Pit, and Car Bottom Furnaces as well as aftermarket support including a full line of replacement parts, and auxiliary equipment (atmosphere generators, quench tanks, and charge cars). Also in business for over 40 years, East Carolina Metal Treating of Raleigh, NC and its sister company, Virginia Metal Treating of Lynchburg, VA focus on providing superior quality and turnaround time. ECMT is Nadcap accredited for heat treating and aerospace quality systems, so the company is adept at servicing original equipment manufacturers and supply chain participants in the burgeoning aerospace sector in the Southeast. The company is also compliant with ITAR and AS9100D, certified for ISO9001-2015, and a holder of a Federal Firearms License. Hundreds of manufacturers across a wide variety of industries already rely on the company's high quality heat treatment and brazing services. www.jlbecker.com and www.gasbarrefurnacegroup.com" April 19, 2017



AxleTech Lands Gear Order

The fact that AxleTech landed a new order for gears is of interest to us because the AxleTech facility mentioned in this press release has a reasonably large in house heat treating department consisting of pusher and batch IQ style furnaces as well as press quenching systems. Whether this order will mean an expansion of the heat treating department is not a question we can answer. April 18, 2017

Troy, Michigan – Ford Performance Parts selected US Gear, a brand of AxleTech International, to manufacture the Super 8.8 ring and pinion gear set in the 4.09 ratio, which is exclusive to Ford Performance Parts. The high performance gears are designed for 2015 and newer Ford Mustangs, which feature a new Independent Rear Suspension (IRS) 8.8 inch rear end. This aftermarket application enables racers and enthusiasts to upgrade their vehicle's performance. "As one of the few remaining U.S. aftermarket gear manufacturers, we are privileged to support Ford Performance Parts as they recognize the importance of high quality and American-made gears. We have recently invested in our gearing facility in Chicago, Illinois to support demand for high performance gears, and our relationship with Ford Performance Parts solidifies our commitment to the racing and enthusiast industry," said Bill Gryzenia CEO of AxleTech International. **About US Gear;** US Gear, a brand of AxleTech International, is based in Chicago, Illinois. US Gear designs and manufactures differential and transmission components for commercial off-highway, defense, and high-performance vehicles. Manufacturing capabilities include gear analysis, gear cutting, and heat treat processing. **About AxleTech;** AxleTech International, based in Troy, Michigan, is a supplier of off-highway and specialty vehicle drivetrain systems and components to original equipment manufacturers and the aftermarket for commercial and defense customers around the world. AxleTech has nine vocational markets: agricultural, aircraft ground support, construction, forestry, material handling, defense, mining, specialty truck, and transit. AxleTech has manufacturing, distribution, and engineering facilities in Troy, Michigan, Oshkosh, Wisconsin, Chicago, Illinois, Saint-Étienne, France, Osasco, Brazil, and Pune, India."

Monday Morning Briefing

It might be the long weekend, it might be the end of winter in the Northern Hemisphere but whatever the reason most people in the heat treat industry are more optimistic these days and this is certainly partly due to improving business conditions. The past year has not been a bad one for business but it hasn't been great either but this appears to be changing. While we have absolutely no hard numbers to back up our belief that things are improving we can say that most industry suppliers such as furnace builders and controls companies are seeing an uptick in new orders and most believe that this is not just a "blip". We understand that a keynote speaker at a recent MTI meeting preached the same belief and in their case they suggested the good times might last for two years. We can hope. Speaking of furnace builders we have this from Rubig in Austria; "**RÜBIG Engineering** expands its team. Germany is one of the key markets for the RÜBIG Engineering division and therefore the sales department has been expanded there. Otto Hunold is responsible for customer assistance and the expansion of the clientele in Germany. He is a locksmith and economic specialist with 32 years of experience in the metal and electronics industry, as well as in the furnace construction industry. He is therefore a qualified representative in every respect." From Wall Colmonoy we have this; Wall Colmonoy is pleased to announce the appointment of **Robert Davies** as Operations Director for its European Headquarters. Robert Davies joined **Wall Colmonoy** in March 2015 bringing with him 14 years' experience in strategic, operational and engineering management. He has worked predominantly in the automotive industry with over 5 years P&L responsible as a Plant Manager. His experience covers assembly, precision machining and extrusion processes for safety critical steering systems, engine and seating components.



Commercial heat treater **Applied Process** with two locations in the US, one in MI and one in Wisconsin has a new Plant Manager at their Wisconsin operation; "*We are pleased to announce **Jon Walczak** has joined the Applied Process team as Plant Manager of our Oshkosh plant, effective April 4, 2017. Jon's primary responsibilities will be to manager day-to-day operations and facilities management, along with general supervision of all phases of plant operation including: production, quality control maintenance, and shipping & receiving. Jon will also be responsible for assisting in the recruiting, hiring, and training of plant personnel, and facility up-keep and capital improvements. Jon is a highly motivated leader with strong production and supply chain experience. He enjoys leading teams to deliver objectives, and believes in continuous improvement to help drive production excellence and strong business performance. Jon has a passion for safety in the workplace and facilitates employee involvement initiatives to strengthen the company work environment. Jon has multiple areas of expertise including team building, logistics, Lean training, and business strategy. Jon has also managed many cost improvement projects to help eliminate waste, and he enjoys working as a team – seeing everyone's efforts translate to successful business performance!*" We understand that **Walt Paluch** a long time, very experienced heat treater has parted ways with **GKN** where he has worked for the past few years. We first met Walt a number of years ago when he was in charge of the heat treating department at **Magna Powertrain** in Syracuse, NY which at the time was one of the largest captive heat treaters in North America. Things are falling into place for Italian furnace builder **Cieffe** after some ups and downs over the past year. Cieffe Thermal Systems and Cieffe Service are operating under the control of Cieffe International ALG, a Swiss based holding company. Mr. Peter Schweighofer is the CEO of both Cieffe International AG

and Cieffe Thermal Systems. Peter is in the photo below in the centre, on the left side is Mr. Francesco Pieropan, Sales Director of Cieffe with Gord Montgomery on the right.



And to round things out for today we have this press release from **Nitrex Metal**; *“Nitrex Metal secured record orders for its turnkey gas nitriding systems from the aluminum extrusion industry in the first quarter of 2017. The orders include compact and large-pit furnaces with load capacities ranging between 1300-6600 lbs (600-3000 kg). The strengthening of the building and construction industry as well as the increasing production of aluminum structures in the automotive sector drove the demand for new equipment investments in heat treating. Among the orders were replacements for outdated, low quality gas nitriders and fluidized bed nitriders, as well as new installations for the construction of new extrusion plants. “We have achieved particular success in the aluminum extrusion industry because we guarantee the quality of our process and similarly provide technological advice on all aspects of the die life cycles and their impact on the bottom line of the customer’s extrusion operations,” stated Marcin Stoklosa, European Projects Manager at Nitrex Metal. “Employing a Nitrex turnkey system equipped with NITREG® technology will allow users to nitride/re-nitride aluminum extrusion dies for longer service life and longer extruder runs, which ultimately will achieve efficient and cost-effective extrusion operation.” Nitrex Metal will provide installation, commissioning, and startup services including onsite testing, training of operator/production personnel, and technical support.” April 17, 2017*



Daimler, Romania Installs Uttis Sealed Quench Line

UTTIS has recently commissioned a case hardening line with controlled atmosphere for planetary gear production at Daimler in Romania. The case hardening line comprises 2 sealed quench furnaces, a washer, tempering furnace, endogas generator, loading/unloading devices and other auxiliary equipment. The maximum gross weight of each batch is 1000 kg and the equipment “uptime” is 98%. The monitoring/control system controls case hardening programs, batches traceability and process simulation. Cooling of the agitators and quench oil is ensured by a heat exchanger air-oil, without any cooling water. The endogas generator provides automatic adjustment of the endogas flowrate and dewpoint, maintaining uniform pressure at evacuation. www.uttisheat.com If you are interested in further information office@uttis.ro. April 13, 2017



Flame Treating & Engineering Closing

Tom Benoit, President of Flame Treating & Engineering Co. in West Hartford, CT announces that he is closing the company. Flame Treating & Engineering is a relatively small commercial heat treater who offers flame and Induction hardening services.

"We would like to take this opportunity to advise you that after 77 years of providing flame and induction heat treating services, Flame Treating & Engineering is closing its operation. The changing markets, migration of customers to China and Mexico, customer relocations of plants and sub-contract operations to other geographic areas of the US, the general business climate in New England and particularly, Connecticut and the lack of honest communications from customers have all impacted our ability to continue. Thanks to all of our current and former employees, present and past customers, vendors and suppliers. We hope that we have contributed to your success over the past years. We anticipate our last working days are approximately May 15th. Thanks again, Tom" April 13, 2017

Wisconsin Oven Closes on Property Purchase from Plymouth Tube

Sounds like Wisconsin Oven is adding some more real estate. This caught our eye because back in 2013 Plymouth Tube enlisted the help of "The Monty" to sell some surplus mesh belt annealing furnaces.

"East Troy, WI – April 10, 2017- Wisconsin Oven announced today that they have closed on a property purchase from Plymouth Tube. The property is located on Young Street in East Troy Wisconsin, between two other Wisconsin Oven factories. This facility offers over 130,000 square feet of manufacturing space. Wisconsin Oven's total investment in the community will exceed \$2.5M after purchase and renovation. Wisconsin Oven President and CEO, Dave Strand, commented, "We are very excited to secure this facility. Over the next year, we will be doing some extensive renovation, and plan on hiring 80-90 employees between 2017-2019." April 12, 2017

Gawel Screw Buys SECO/WARWICK Furnace Line

"SECO/WARWICK will supply a type ATE technological line, consisting of a PTE muffle belt furnace designed primarily for carbonitriding, washing and annealing. Gawel Screw Production Plant (GSPP) is a well-known fasteners manufacturer of screws for wood, metal and plastic. Over the years, the company has introduced many new products, becoming an industry leader. "Since the very beginning, the GSPP company has paid great attention to the professionalism and production of high quality products, and the key area of competence of the company is the technologically advanced production of fasteners. This is possible thanks to cooperation with solid partners," says Mariusz Skóra, Director of the Research and Development Center in Gawel Screw Production Plant. "Our partner's heat treatment solutions provide us with the highest quality materials. We constantly improve the quality of our products, therefore, we have chosen reputable SECO/WARWICK systems as our technology line supplier," adds Tomasz Gawel, President of Gawel Screw Production Plant. This is another technological line for heat treat-



ment of fasteners recently ordered from SECO/WARWICK. The installation at Gawel is planned for the fourth quarter of 2017. We are constantly striving to provide our partners with technologies that meet the needs, requirements and expectations of the most demanding industries," commented Jarosław Talerzak, Vice President of Thermal Segment at SECO/WARWICK. The ATE technology line is adapted to work with endothermic gas from natural gas produced by an external generator. More about Thermal solutions: <https://www.secowarwick.com/en/products/atmosphere-heat-treatment-furnace-systems/>" April 12, 2017

Solar Atmospheres Awarded Rolls Royce Approval

Solar Atmospheres of Western PA (SAWPA) announces that it has been awarded Rolls Royce Approval. We are extremely pleased Rolls Royce has recognized our corporate commitment to quality. The adherence to strict specification requirements, process execution, and a daily commitment to quality processing is evident among all employees at Solar. Susan Generalovich, Quality Manager says: "The successful certification of our SAWPA facility is a testament to our commitment to continual improvement, and to growing our business within the aerospace industry. We are excited about the opportunities this certification will allow and the added confidence it provides to our customers." For additional information about Solar Atmospheres of Western PA, contact Mike Johnson at 866.982.0660, ext. 2223, or mike@solarwpa.com, and visit www.solaratm.com. April 12, 2017

Pyradia/SAMT Joint Venture

What you see in the photo below is the end result of a partnership between Canadian furnace builder Pyradia and their partner in China, Shanghai Advanced Materials Technology Co., Ltd. The project was for Somic Automotive Components Co., Ltd who ordered a T6 aluminum heat treating line composed of 2 Pyradia Drop bottom furnaces and 5 Pyradia ageing ovens with a load size of 1500mm x 1500mm x 1500mm. Somic specializes in the production of automotive steering tie rod, suspension arm, ball joint and stabilizer bar link. April 11, 2017



ALD Thermal Treatment Seminar

May 23-24/2017 ALD Thermal Treatment will be hosting a seminar called "Basics of LPC (Low Pressure Carburizing) in Port Huron, Michigan. This seminar gives you a basic understanding for the successful application of the LPC-process. Besides the basics of the process and the equipment, the furnaces can be seen in action on the shop-floor at ALD-Thermal Treatment. The seminar is intended for personnel working in the fields of process-technology, quality, planning, scheduling and production (shift leaders). We at "The Monty" have been at these seminars a couple of times over the years and we have to say they do a pretty darn good job of covering LPC. Even forgetting about the seminar the trip is well worth it just to see the plant which we estimate to be the largest single location heat treat in North America in terms of annual sales. We weren't able to locate any recent photos of the plant but the one below shows

the ALD facility in Mexico which is pretty much a carbon copy of the one in Port Huron, just smaller. April 11, 2017



Remix Press Release

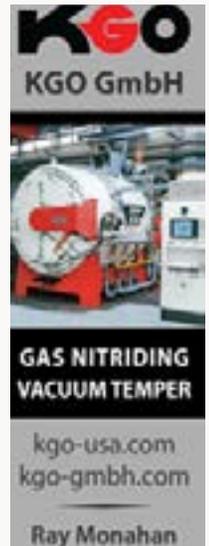
Remix Press Release. "It was the fourth time on 28th March 2017 that the International Galvanizing Symposium was held during the VIII Exhibition of Corrosion Protection Technology and Surface Treatment EXPO-SURFACE, with joint involvement of TARGI Kielce and REMIX S.A. This meeting of people dealing with practical, scientific and R&D aspects of galvanizing as well as manufacturing of galvanizing equipment, allowed the participants to exchange their experience, which is bound to result in improved and interesting ventures. Speakers included both practitioners and theoreticians. Among them a few names renowned in the galvanizing sector should be mentioned here: Professor Edmund Tasak, Ph.D Eng., Professor Piotr Liberski, Ph.D Eng., Henryk Kania Ph.D Eng., Tomasz Płociński Ph.D Eng., Jacek Zasada – President of Polish Galvanizing Association, Petr Strzyž – Director of Czech and Slovak Galvanizers Association. We would like to take this early opportunity and invite you to the jubilee V International Galvanizing Symposium to be held next year. We deeply hope that the issues we will address then will be of interest to a circle of participants at least as numerous as the one we had the pleasure to host during this year's meeting."

April 11, 2017



Monday Morning Briefing

Lets start off with some people news from the around the globe. First up we hare that a fellow by the name of **Jeffrey Pallitto** joined commercial heat treater **Applied Process** as Technical Sales Engineer a few weeks back. Jeff's main responsibility will be to increase sales which is not real surprise since he is a Sales Engineer. Applied Process based in Livonia, Michigan is one of the largest players in North America when it comes to salt quenching. **Paulo** recently promoted **Rocky Glenn** to Plant Manager of the company's Kansas City location. "Rocky joined Paulo in May of 2016 as Operations Manager and has been successful in implementing lean manufacturing initiatives. Rocky is finalizing his black belt certification and utilizing these tools has



increased productivity throughout the plant. Ben Crawford, Vice President Operations, states, "To have a seasoned manager such as Rocky equipped with today's skillsets, such as lean concepts, make his leadership more viable and productive. Paulo has established many metrics and initiatives to improve labor efficiency and it is exciting to see these concepts put to use". Tee Rassieur, former Kansas City Plant Manager, says, "We are excited to see Rocky move into this role of increasing responsibility. Rocky has had great success increasing employee engagement through the roll out of new programs focusing on employee development and meeting our customer's expectations of quick turnaround and quality work." Tee will continue to work in operations, directing special projects.

Rocky added, "I am truly honored in having the opportunity to lead the Kansas City Division. The team and I look forward to raising the bar of performance through engaging our employees in continuous improvement." Founded in 1943, Paulo is one of the largest providers of heat treating, brazing, and metal finishing solutions in North America. Headquartered in St. Louis, Paulo operates five divisions servicing the mid-west, great lakes, and southeast regions of the United States. Paulo's customers include leaders in a variety of industries."



Hauck Heat Treatment in Spain has a new managing director; "We are pleased to welcome **Mr. Andrés Barallobre** to the management team of Hauck Heat Treatment Andrés will take over the function of Managing Director of Hauck Heat Treatment Spain and sit on the Board of Directors of Hauck Group.

Holding both Economic Sciences and MBA degrees, Andrés has extensive management experience in industrial companies acquired over more than 30 years, mainly in the aerospace and metal industries but also in the food industry, strategy consulting and banking. Over the last few years he has led numerous projects with a focus on operations improvement. Andrés is 55 years old, married and has one daughter. We welcome Andrés to our organisation, wishing him all the best in his new role."



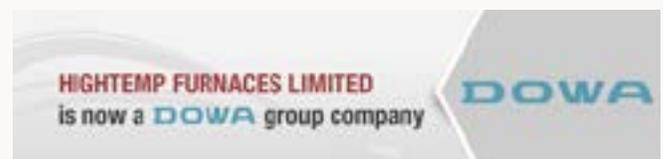
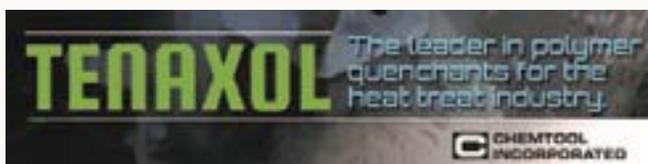
Advanced Heat Treat Corp., based in Waterloo, Iowa is going to have a new President. "**Advanced Heat Treat Corp.** is pleased to announce the appointment of **Mikel Woods** as President effective immediately. Mr. Woods previously served as Senior Vice President and has been with AHT since 2005. Gary Sharp will be stepping down as President but will remain active in the company and will continue to serve as CEO and Owner. "Mikel has been leading AHT since I semi-retired and has taken the responsibility of all of the day-to-day issues," said Mr. Sharp. "In his role as President, he will continue to coordinate the major functions of the business. His results-oriented approach, problem solving, sound business judgment and ability to think strategically will play a pivotal role in extending our track record of servicing our customers with UltraGlowing results, while helping us continue to grow." Under Woods'

leadership, Advanced Heat Treat Corp. has maintained its position as a worldwide leader in nitriding, with locations in Iowa, Alabama and Michigan. Service offerings have been expanded to include UltraOx® for corrosion resistance, which has benefited numerous industries ranging from firearms to oil & gas. He has also been instrumental in refocusing the leadership team to follow Traction key principles, to name a few of his accomplishments. “Advanced Heat Treat Corp. is at the forefront of heat treating services. Successful companies turn to AHT on a daily basis to find answers to their toughest surface treatment issues,” said Woods. “I am excited to be part of the AHT family, building on AHT’s well-known processes and continued partnership. Working with our customers from the conceptual stage to production, we strive to maximize product value and performance. With the need for materials to hold up under tough conditions, more and more enterprises require the capability and service that AHT delivers and I’m proud to be part of that. I look forward to leading the AHT family with the core values that Gary has instilled in every one of us and hope to make him proud.”



Furnace Builder **CIEFFE** of Italy was in the news quite a bit at the end of 2016 because of some changes in ownership which left the company a little up in the air. The company recently issued this statement which really doesn’t tell us a great deal. “We kindly inform you that from the 1st April 2017 Cieffe Thermal Systems has started to manage the whole Cieffe Group. Cieffe Thermal Systems is controlled 100% from the Swiss Holding Cieffe International AG.” May 2 2017 controls company **SSI** of Cincinnati will be hosting a 1 day seminar about furnace controls and procedures in Mississauga, Ontario, Canada. SSI has been doing these seminars for years all around North America and they have proven to be a tremendous success. Furnace builder **CEC** (Consolidated Engineering of Georgia) has been awarded a contract to provide an Electrically Heated CEC Model DBS-27 Drop Bottom Furnace with mobile stainless steel immersion quench tank and air quench with additional water spray/mist. The CEC design incorporates the three types of quenching to provide three unique degrees of cooling during quench.

Now this is a mess! “A Paramount, California metal processing firm at the center of a controversy over high emissions of a carcinogenic pollutant is suing regulators over the accuracy of an air monitor, while residents are suing the company for allegedly exposing them to a major health risk. **Aerocraft Heat Treating Co.**, has sued the South Coast Air Quality Management District, challenging the readings of one of the agency’s air monitors. The suit, filed on Feb. 24, asks a Superior Court judge to order the district to improve the accuracy of its hexavalent chromium monitoring data and to take into consideration Aerocraft’s own air measurements. Meanwhile, a group of residents in the South L.A. city has filed a class action lawsuit against Aerocraft and five other metal businesses for “deliberate and intentional” emissions of hexavalent chromium, also known as chromium 6. The suit, filed Feb. 28, seeks puni-



tive damages. The metal firm's suit against the AQMD grew out of its claim that one of the district's monitors inaccurately reported elevated chromium 6 emissions near Aerocraft's facility on Feb. 12. The company also says the AQMD refused to consider Aerocraft's own air monitoring data, which did not show elevated pollution levels. Those high levels led the air district to order the firm to temporarily shut down and idle many of its workers, the suit says. The air district has ordered four temporary shut-downs of Aerocraft's chromium 6 operations over the past two months." **Jennings Technology** in San Jose, California a supplier of electronic components recently shut the plant down and moved manufacturing to China, something that doesn't happen as often as you would think these days. This is a newsworthy item for the fact that the company had a fairly large in house heat treating department. The furnaces have all been sold and moved. And we will have one more note for today, this one from commercial heat treater **Paulo**;

"Paulo is pleased to announce our continued commitment to providing service offerings for our customers by installing two air furnaces servicing high heat temperature requirements. As a company Paulo is committed to providing capacity, quality processes, and turnaround to meet customer requirements. With the installation of the furnaces it expands our ability to meet stringent delivery expectations. The furnaces will process stress relieving and annealing. Ben Crawford, Vice President Operations, states, "We are committed to seeking new processing methods to continually improve service performance to our customers. Our customers deliver products with demanding schedules and our goal is to be a partner and provide services that meet these demands." April 10, 2017



Natural Gas "Spiking"

It is rather interesting where a news item about an explosion in a heat treating shop has taken us (scroll down for the original story). In response to our original post about the explosion a reader suggested that perhaps it had something to do with Acetylene being added to the natural gas supply to increase the BTU's. Respected consultant David Pye added these further details where he agrees that this might have contributed to the explosion. You will also note that this is one reason why Endothermic generators behave differently depending upon the time of year. "Hello Gordon, A great article. I have been preaching this message for ever and a day (so to speak) that the danger time for heat treaters, be they captive or commercial that use endothermic gas generators that use natural gas will find that they purchase the natural gas based upon calorific value and not analysis. During the winter time when there is an extremely high demand on the natural gas supply for both domestic and industrial heating and processing, the gas is 'spiked' to bring the natural gas up to its calorific value. The gas is apparently/usually spiked with any gas that will raise up the natural gas to its normal saleable calorific value. The letter that you have received regarding

a prior industrial accident, due to the alleged spiking of the natural gas is a prime example of the message I have 'preached' due to my own practical experiences. I am sure that if an industrial analysis was conducted over a number of years, and if the relevant information would be supplied by the natural gas supply companies, there could well be a strong indication as to how extensive (and how dangerous to both life and limb) it can be, and not only to the heat treatment industry!! When I have taught classes for ASM and MTI on the atmospheres and heat treatment equipment I have always raised this potential problem.

The writer of the response to your article gave a solution regarding the natural gas coming into contact with copper and forming Copper Acetylide. Whilst that is a valid point, I do believe that the responsibility should be on the natural gas supplier to disclose the gas analysis being supplied to the industrial user and not just to spite the gas as and when they feel it should be necessary, without advising the user. I believe it is a dangerous practice and one that all heattreaters and heat treatment management should and must be aware of. While the endothermic gas generator is a simple unit to both operate and maintain the management and staff of all heat treatment units using that method need to be trained and advised of the potential. This could also extend to the generator manufacturers to comment on this potential hazard in their operation and maintenance manuals. David."

Recently there was an explosion in a commercial heat treat shop in the USA which resulted in a death. While we have not heard of the cause of the explosion it gives us pause to reflect on how this can be a dangerous industry. A reader sent us this story about a similar (possibly) explosion a number of years ago in Saginaw, Michigan which was caused by a very unusual set of circumstances. "Many years ago there was also an unexplained (at the time) serious injury explosion in Saginaw, Michigan. It was later determined that the locally supplied Natural Gas to the Plant was regularly "spiked" apparently by the Gas Company with Acetylene to improve its BTU content. This Natural Gas was being used as the fuel supply for a Rich Exothermic Gas Generator. The generated Rich Exothermic Gas was in contact with Copper at one point as which time Copper Acetylide was formed. When "dried" Copper Acetylide (turns to Red Powder) can explode violently with shock (hammering), heat (torch), etc. and in this case it did. The solution was to remove the copper from the item causing the problem. This type of explosion would have had no fire." April 7, 2017

ASM International Visits Solar Atmospheres

ASM International visited Solar Atmospheres on Wednesday, March 22 to renew stronger relationships with supporting companies, and to gain a better understanding of Solar's commitment and involvement with ASM. Managing Director, Bill Mahoney, along with Ron Aderhold, ASM Associate Managing Director and Chief Information Officer, Fred Schmidt, ASM Vice President, and Rachel Stewart, Student Board Trustee, met with representatives from Solar and toured the facility. ASM presented firsthand information on the objectives and progress of the ASM renewal, spearheaded by Mahoney. Some of the objectives are pursuing an easier renewal process, developing stronger relations with affiliate societies, improving professional development, and developing a culture of excellence within the headquarters at Materials Park, OH.

Solar Atmospheres came away from this meeting with a high level of confidence with the new team at ASM Materials Park, and we are encouraged with the early results from the renewal deployments, and Solar offers complete support of the program for the betterment of the society. For additional information about Solar Atmospheres, please contact Mike Moyer, Director of Sales at 215-721-1502 x1207, or mikem@solaratm.com, or visit us at www.solaratm.com. April 7, 2017

The Perils Of Heat Treating

Recently there was an explosion in a commercial heat treat shop in the USA which resulted in a death. While we have not heard of the cause of the explosion it gives us pause to reflect on how this can be a dangerous industry. A reader sent us this story about a similar (possibly) explosion a number of years ago in Saginaw, Michigan which was caused by a very unusual set of circumstances. April 6, 2017

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The 25,000 Mile Journey

Now this 36" X 48" X 32" batch IQ furnace line has an interesting history. It was built back in 2007 by furnace builder Fengdong in China, who shipped it to their partner in the US, Consolidated Engineering in Kennesaw, Georgia for final assembly. From there it went to the end customer, aerospace company Gulfstream in Mexico where it was used very sporadically for a couple of years at which point the company decided they had no further use for it. It was then purchased by a large commercial heat treater in the US Northwest who shipped it to their plant and then decided it was not needed-back on the market again for almost a year. It was recently purchased by a heat treater in Texas which might possibly be the final stop after what has probably been a journey equal to travelling around the globe. April 6, 2017



Tenaxol

We welcome our most recent advertiser Tenaxol whose banner ad can be found on the top left corner of this page. Tenaxol is probably the best know name in the industry when it comes to Polymer Quenchants. A quick click on the ad will tell you all about the advantages of polymers. April 6, 2017



Case Hardening

Recently we had comments on this site about case hardening and nitriding. Bill Jones of Solar Atmospheres has some very interesting comments on the subject. April 5, 2017

“With reference to the articles on case hardening. With ion or gas nitriding deep case development is difficult to impossible V/S carburizing. Where shallow case development is allowable less than 20 thou nitriding may be acceptable. For shallow case nitriding wins with lower distortion as noted by your commentators. I am not a fan of ion nitriding because of the difficulty for temperature measurement on the energized 500 to 700 volt work load. It is near impossible to generate an acceptable AMS2750 temperature uniformity survey in a plasma nitride furnace or throughout the work load for that matter. Placement of parts, location, into a plasma nitride furnace requires careful attention and concern for chips, is another critical factor. For specific production parts, production duplication, is the order of the day, and particularly acceptable for large dies and the like. This is generally not so for the commercial heat treating company. With the advancement in atmosphere controls today, gas nitriding is far more forgiving including related furnace costs. William R. Jones, FASM, CEO, Solar Atmospheres Inc.”

Commercial Heat Treat Acquisitions

It is now relatively old news that commercial heat treaters Atmosphere Annealing and Nitro Steel (now known as Premier Thermal) were acquired by Z Capital Partners. As a follow up to that story we see that Z Capital plans to grow through further acquisitions in the industry which brought a smile to our face as they are one of many, many companies looking at acquisitions in the commercial heat treating industry. A few companies which have announced their desire for acquisitions in the industry include Calvert Street, Bodycote, IHI out of Japan (although while they said they were looking for acquisitions we have seen no sign of them actively pursuing it), Aalberts Industries and at least half a dozen venture capital firms whose names we can't keep track of. All of this leads to the conclusion that it is a real good time to be selling a heat treat. April 5, 2017

“Z Capital Partners L.L.C. has completed the acquisition of the Pleasant Prairie-based Nitro Steel, a manufacturer of steel components. The package deal includes the purchase of metal heat-treating company Atmosphere Annealing, which, combined with Nitro Steel, is collectively known as Premier Thermal Solutions. Terms of the acquisition were not disclosed. Officials with the New York-based equity management company said the acquisition will allow for further expansion of Premier. Plans call for the expansion of the metal heat-treating service through acquisitions and by diversifying into additional end markets using financial and operational resources from Z Capital. “We are pleased to have closed the acquisition and are excited about the growth opportunities ahead for PTS,” said Rahul Sawhney, senior managing director of Z Capital. “The company’s high-quality product and service offerings, coupled with Z Capital’s specialized sector knowledge and operational expertise, position PTS for long-term success. We look forward to partnering with their outstanding leadership team to accelerate the company’s growth both organically and through strategic acquisitions.” Nitro Steel, 9955 80th Ave., is a provider of nitro-carburized bars and tubes and produces a “green” alternative to chrome. The steel bars are used primarily in fluid power applications in the agricultural, construction, mining, marine, utility and automotive end markets. Atmosphere Annealing has plants in Ohio, Michigan and Indiana. It markets services to the automotive, trucking, oil and gas, agriculture and heavy construction industries as well as the military.”

American Axle & Torq Tek?

Last November it was announced that American Axle & Manufacturing Holdings, Inc. and Metaldyne Performance Group Inc. had entered into a definitive merger agreement under which AAM would acquire MPG. March 31 2017 it was announced that MPG had acquired Torq Tek: Torq Tek is a business based in Charleston, South Carolina that specializes in precision gear manufacturing. MPG feels that they bring a unique capability which will fit nicely with their business. What makes this of some interest to us is that each of these companies have very large in house heat treating departments. Torq Tek operates rotary hearth furnaces with some press quenching and American Axle is one of the largest in house heat treaters in North America and growing. April 5, 2017

Mr. Zhu, Fengdong Furnaces, March 8 2017

We are very pleased today to be interviewing in person Mr. Zhu Wenming, Chairman of Fengdong Group based in Yancheng City, China. April 4, 2017



Mr. Zhu Wenming, Chairman, Fengdong, Gord Montgomery

Zhu I am very interested in how people get to where they are now. How did you end up in the position you are now in?

I am originally from Yancheng and my background is electrical engineering. When I was 22 years old I was directed by the government to work for a furnace company by the name of Fengdong although I knew nothing about heat treating. I was trained in Japan for one year before returning to Fengdong which was 27 years ago now. I began with furnace manufacturing, designing, sales, then full management of Fengdong group.

I know Fengdong by reputation but I know little else about the company. Could you please give myself and our readers an idea about the history of the company?

Fengdong was officially registered in 1989, when it was partly state owned with Japanese company Oriental Engineering as a partner. It started in operation in 1990.

The first 10 years (1990-2000), it was a traditional Chinese state owned company in a poor economy with average sales of 10 million RMB (approximately USD 1 million) per year.

The second 10 years (2000-2010), it was transformed to a private company with the employees buying shares. During this period, average sales were 100 million RMB (approximately USD 12 million) per year. Since year of 2000, we took every opportunity to promote sales domestic and overseas and enhance the technical cooperation internationally. During this period, we had very fast growth in the company.

In 2010, we became public and Fengdong remains the only publicly traded company in China for heat treatment. Since we became public, we further grow our company and acquire other business. Our combined annual sales will be approximately USD 250 million in short time. Profit is expected to be USD 50 million.

What products does the company offer?

With the acquisition of Powermax Shanghai we now have 12 commercial heat treating locations, 11 in China and 1 in Korea with 5 manufacturing locations including Powermax. We are very proud of the fact that we can offer all types of heat treating equipment, atmosphere, non-atmosphere, induction and vacuum. Our commercial heat treating plants also offer all available types of heat treating processes.

Several times over the years I have been told that Fengdong is the largest furnace builder in the world-do you believe this to be true?

Equipment sales are approximately \$100 million USD per year which puts us amongst the one of the top furnace builders in the world and certainly we hope to be the largest in China. Commercial heat treatment sales were about \$30 million in 2017.

Do you prefer the commercial heat treating side of the business or furnace manufacturing?

(Editors Note; There appeared to be a difference of opinion amongst management on this question.)

There is no doubt that we will stay in the equipment manufacturing business, but we want to invest much more on high end heat treatment services in the future.

What is your biggest concern running this business?

We have set ourselves a very ambitious goal and this it to reach annual sales of \$1 billion USD. My main concern is where will all this future growth come from? In addition, where do we find the good people necessary to achieve this goal?

What drives you? Why do you work as hard as you do?

Our goal is to grow the business and make sure that all our employees feel that they are part of the business, that they are contributing and that they are sharing in the success of the company. This is a large task which takes a lot of hard work. On average, everybody on our management team works 70 hours a week.

Recently you acquired PowerMax Shanghai. Why was this company of interest and how will it



fit in with your future plans?

PowerMax was of a great deal of interest to us because of their experience with salt quenching and the ADI process. I regard this not as an acquisition but rather a collaboration. We hope and expect that with this collaboration Fengdong will become the leading company in the world for salt quenching. The Powermax name and location will remain. Fengdong has had great success over the years working with Japanese and European furnace builders and we believe that by working with Powermax with their US ties that it will again be a success. We have worked with Andy for over 20 years now. We have a very high opinion of Andy and regard him as a major asset to Fengdong.

The company has come a long, long way in a relatively short period of time-how did this happen?

There are several reasons but a large one is our close collaboration with foreign companies, to share technology. We also very seriously consider the customers needs.

Does it pose a problem for you doing commercial heat treating and also building furnaces? In North America and Europe, a furnace builder would not be able to offer both as potential customers would see them as a competitor.

This has not been a problem, we believe that commercial heat treating gives us valuable experience for our furnace building business. As a result, even though we are in same business, cooperation is still always possible.

Where do you sell most of your products?

85% of our products are sold and installed in China with 15% exported.

I'm sure that there are a lot of furnace builders and heat treaters around the world that would like to know the answer to this question. Do you have plans to aggressively start selling in Europe and the Americas?

We have looked at and considered opportunities in many areas around the world including acquisitions and will continue to do so. Geographically all areas are of interest to us.

Several furnace manufacturers feel that the future of heat will be single part processing. In other words continuous furnaces that process the parts one at a time. Obviously this is not suited for large volume, small parts such as fasteners but more for parts such as transmission gears. Do you personally feel that this will be the way of the future?

We learned that message from the market place and we do not disagree it is a good idea. However, we are more concerned with heat treatment quality and cost control. Certainly, we do things to meet a customer's specific need.

What else would you like to tell us today?

I have a dream and that dream is for Fengdong to become a world renown company, a company that is an industry leader and where all of our employees feel that they are participating in the growth.



Andy Chen, Powermax, Mr. Zhu Xiaojun, General Manager, Mr. Zhu Wenming, Chairman, Mr. Wang Yi, Executive Vice President, Gord Montgomery



Mr. Andy Chen, Powermax, Mr. Wang Yi, Executive Vice President, Fengdong, Jordan Montgomery. (Fengdong commercial heat treating division)



Fengdong Furnace Building

Alloy Engineering Company, Berea, Ohio

We welcome our newest advertiser high temperature alloy fabricator Alloy Engineering Company of Berea, Ohio, USA whose ad can be found at the top of this page. The company very kindly provided us with this photo of part of the Alloy Engineering team at their headquarters just outside of Cleveland, Ohio. April 4, 2017



Monday Morning Briefing

Monday Morning Briefing. In the US we see that furnace builder/rebuilder **McLaughlin Services** is growing like a bad weed; “McLaughlin Services is pleased to announce the opening of its new West Coast Office. Located in the Los Angeles area, the new office will support sales and service to the heat treating industry across the entire West Coast. With this expansion, McLaughlin Services will be able to provide local service to its customers focusing in the aerospace industry. Founded in 2007, McLaughlin Services builds new furnaces, and rebuilds and services existing furnaces. With their innovative designs, McLaughlin Services produces heat treat furnaces with very tight temperature uniformity. This expertise has allowed McLaughlin Services to quickly expand into the aerospace industry, and their new office reflects their dedication focused on better servicing this aerospace market. McLaughlin Services provides a full range of offerings for the heat treating industry. Their new equipment includes temper furnaces, carbottom furnaces, mesh belt furnaces, endothermic gas generators, retrofit endogas mixing systems, etc. Their services include 24 hour emergency and preventative maintenance, combustion troubleshooting & burner tuning, engineering & consulting services, operator training, etc. As the largest re-builder of furnaces in the United States, McLaughlin Services also is capable of re-building hot zones and pumps on vacuum furnaces, rebuilding gas & electric furnaces, re-insulating furnaces, performing electric-to-gas heating conversions, and offers a full line of spare parts for most furnaces. With over 100 years of combined experience in the heat treating industry, the McLaughlin team is capable of any job, large or small.”

Alan Thompson the Chairman of International commercial heat treater **Bodycote** will be leaving the company. “Bodycote PLC on Thursday said Alan Thomson has informed the company he intends to retire from his role as chairman but has offered to stay on until a successor is found. The heat treatment service company said Thomson has led the company for the past nine years, “stewarding the business to where it is today”. Late last month, Bodycote reported profit before tax of GBP91.9 million in 2016, up from GBP75.0 million in 2015 as revenue rose to GBP600.6 million from GBP567.2 million, with like-for-like revenue falling 3.5%. Bodycote shares were up 0.5% at 813.0 pence per share on Thursday morning.” Commercial heat treater **Wallwork** also in the UK is seeing an individual leave the company; “After 40 years working for Wallwork, Frank Skelton retires in May. He joined Wallwork in the 70s when the company was based in Stalybridge. Frank will be missed as part of the team overseeing both aerospace and commercial heat treatment work.” **Can-Eng Furnaces International Limited** was contracted to commission a turnkey 36 ft. diameter “Pancake” style rotary hearth furnace for a leading North American Based aerospace supplier. The open hearth configuration allows for flexible loading and uniform heating. The furnace will be used in the production of large fixed wing aircraft Titanium and Nickel based alloy closed-die structure forgings. The furnace system features an advanced low NOx combustion system designed to meet the most stringent environmental and temperature uniformity requirements. Special dual-door design provides the customer with significant flexibility for forging to press manipulation within in their existing plant layout. The system is capable of processing up to 250,000 pound load capacity in a 24/7 production environment. The furnace system complies with thermal performance requirements laid out in AMS2750E, integrates a low shrinkage ceramic fiber lining, unique rotating hearth drive and sealing system. The system is scheduled to be commissioned to the United States in the third quarter of 2017.”





Applied Process in Livonia, Michigan (you know Applied Process-they are the salt quenching guys with two plants in the US) recently achieved their NADCAP certification. AP has always been largely automotive so this represents a new direction for the company. By the way Applied Process has always had several licensees around the world but we gather this is coming to an end. *“Expanite, the Danish pioneer within surface hardening of stainless steel and titanium has successfully been ISO9001:2015 certified. In parallel with this certification, Expanite’s quality management system is now also complying with the CQI-9 standard for heat treatment within automotive. Expanite originally achieved the ISO 9001:2008 certificate in 2013 for its Danish headquarter but with the recertification to the ISO 9001:2015 the scope is extended to cover the production, laboratory, shipping and office facilities in all locations; Germany, US and Denmark. “We are very proud of being among the first companies to reach the ISO certification according to the 9001:2015 edition. The recertification to the new standard for all our locations marks an important milestone for Expanite; with the certification, our customers can be confident that Expanite is dedicated and committed to maintaining the same high quality in processes, services and procedures no matter where customers are being serviced. Our motivation to obtain the certifications is driven by a desire to meet customer needs and continue to improve customer satisfaction”, says CEO, Thomas Abel Sandholdt.”*

Wall Colmonoy will be offering a modern furnace brazing school 17-19 October 2017 at their headquarters in Pontardawe, Wales, UK. *“Preserving the tradition originated by the late Robert Peaslee, a brazing pioneer who invented the first nickel-based brazing filler metal, Wall Colmonoy offers the next session of the European Modern Furnace Brazing School on 17-19 October 2017 at Wall Colmonoy’s European Headquarters in Pontardawe, Wales, UK. 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.”.* **Forge USA** an open die forging operation in Houston, Texas will be auctioning off a whole whack of heat treating equipment mid May of this year. The equipment consists mainly of large box furnaces with some muffle furnaces thrown in. Because of the size of the furnaces they will have limited appeal but having said that there is always a demand for gas fired box furnaces. **General Motors** is also auctioning off some heat treating equipment including a large Holcroft vacuum furnace. When heat treaters think of Holcroft (now part of AFC-Holcroft) they generally think of pushers or batch IQ furnaces not vacuums. Having said that Holcroft did make a few over the years which were well built and well designed but at the end of the day the company must have decided they preferred atmosphere furnaces. And that is a wrap for the Monday Morning Briefing for April 3, 2017. April 3, 2017

USED & NEW EQUIPMENT

At “**themonty.com**” you are guaranteed of finding the best priced used equipment in the industry due to the fact that we do not buy and resell and have no associated costs. Instead we put buyers and sellers together on a small commission basis meaning that at the end of the day you are paying what equipment is worth-not equipment with a huge mark up attached! In addition you generally can see the equipment installed, running and talk to the actual operator far better than seeing a used furnace in the back of a dingy warehouse.

- **LISTING USED EQUIPMENT**
- **BATCH**
- **CONTINUOUS**
- **DRAW/TEMPER**
- **GENERATOR**
- **INDUCTION**
- **LAB EQUIPMENT**
- **MISCELLANEOUS**
- **SALT**
- **VACUUM**
- **NEW EQUIPMENT**

LISTING 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 saleable 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.

Notice: 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

See something you need, click on the link or scroll through all the items for sale. Searching for something we don't have listed, fill out our [Contact Form](#).

- Item # B428 Carbottom Furnace 1800 F
- Item # B427 SOLO Swiss Heat Treatment
- Item # B426 Plasma Nitriding Unit
- Item # B425 Box Furnace
- Item # B424 Atmosphere Box Furnace
- Item # B423 Grieve High Temperature Oven-UNUSED
- Item # B422 Ipsen Sealed Quench Line
- Item # B421 Surface Combustion "Super 36" Allcase
- Item # B418 Lindberg High Temperature Oven
- Item # B417 Fluidised Bed Furnace Line
- Item # B416 Car Bottom Furnace
- Item # B415 J.L. Becker Car Bottom
- Item # B414 Ipsen Batch IQ Installation
- Item # B413 Batch IQ Installation
- Item # B410 Box Furnace
- Item # B406 Carbottom Furnace
- Item # B405 Surface Combustion "Super 30" Allcase
- Item # B402 Holcroft Batch IQ Furnace
- Item # B401 Carbottom Furnace Hayes High
- Item # B400 Surface Combustion Super 30 Allcase
- Item # B399 Carbottom Furnace
- Item # B398 Sauder Batch IQ Line
- Item # B397 "Lift-Off" Atmosphere Box Furnaces (2 available)
- Item # B391 Ipsen T-11 Batch IQ Furnace
- Item # B388 Hydrogen Atmosphere Furnace
- Item # B386 High Temperature Tube Atmosphere Furnace
- Item # B385 Lindberg electric pit type cyclone furnace / nitriding furnace
- Item # B374 Atmosphere Box Furnace
- Item # B371 Sauder "Auto-Tilt" Car Bottom Furnace
- Item # B367 Atmosphere Box Furnace
- Item # B352 Pacific Scientific Box Furnace

ITEM # B428 CARBOTOM FURNACE

Carbotom 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 # B427 SOLO Swiss Heat Treatment Line 202-30/30/60

Built by Solo of Switzerland this is a SOLO 202-30/30/60 model. This heat treatment line was manufactured and modified in 1981-1987-1994. Composition: 1 washing machine, 1 "5 bar gas tank", 1 "5 bar gas tank" with 35 kW turbine, 1 oil tank, 1 tempering furnace, 1 salt tank, 1 furnace with max. temperature of 850 °C, 1 manual manipulator, temperature regulation system and % CP with regulator, loading material. Possibility of mounting and commissioning by the manufacturer (SOLO). Actually, in operation, located in Switzerland. Good condition. All manuals included. **Price on request.**



Item # B426 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 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 Ni-chrome 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,



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 # B423 Grieve High Temperature Oven-UNUSED. Grieve High Temperature Oven-UNUSED. Model HD-243624-HT-ATM. Operating temperature of 2200F. 73 Amps, 480 volts, 60 Hertz. Working dimensions of 24" X 36" x 24". Capable of nitrogen addition. 7 years old and never used or installed. Like new condition. New this was \$75,000 USD. **Best offer.**



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 600kg. 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. Dew pointer, industrial scales and portable hardness tester also included.



Item # B421 Surface Combustion "Super 36" Allcase

Surface Combustion "Super 36" Allcase. Working dimensions of 36" X 48" X 36", 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.

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 \$29,000 USD for both.



Item # B417 Fluidised Bed Furnace Line.

A complete fluidised bed heat treatment line only 6 years old, consisting of three fluidised bed furnace, a cooling fluid bed, plus auxiliary equipment. All furnaces are sized with a 600mm diameter x 1200mm deep work space (24" diameter x 48" deep) and are electrically heated, with SCR control.

- Furnace 1 – 1080 deg C max temp, 19" colour touchscreen, with Windows based control system. Process gases include air, nitrogen, ammonia, propane, carbon dioxide. All gas flows are computer controlled through electronic flowmeters
- Furnace 2 - 1080 deg C max temp, 19" colour touchscreen, with Windows based control system. Process gases include air, nitrogen. All gas flows are computer controlled through electronic flowmeters
- Furnace 3 - 680 deg C max temp, Standard temperature controller, Process gases include air, nitrogen. Gas flows are controlled manually from the flowmeter

Auxiliary equipment included in offer - cooling fluid bed, work platform, stairs and handrails, piping and wiring, fluidising air system, water cooling system with air cooled heat exchanger, various work jigs & mesh baskets, ammonia vaporiser. Current power supply is 415V / 3 phase / 50hz, but equipment can be modified to suit any power supply. Originally manufactured by Applied Heat Technologies 2010, furnace line ceased operation in 2014, and has been in storage since. All equipment is in excellent condition. Prior to sale, the equipment will be fully tested to ensure it is operational, and any faulty parts will be replaced, and a warranty will be offered. The equipment can be packed into containers for delivery anywhere in the world. Assistance with shipping, installation, commissioning and conversion to an alternate power supply available if required. **Asking price is USD \$180,000.00.**



Item # B416 Car Bottom Furnace.

Manufactured by Sauder this is a gas fired 6-burner car bottom style furnace. Serial Number: 751546 (1975). Working dimensions of 15' D x 10' W x 7'. Completely rebuilt and relined with 4" thick fibre in 2012 by Onex Inc. Dual Blowers. 6 North American burners model 4422-5 capable of 4.5 million BTU's. Was operating at 1200F but capable of much high temperatures with additional lining. Very good overall condition although the car needs minor repairs (repair materials included). **Asking \$49,500 USD for quick sale.**



Item # B415 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: \$125,000.00 USD.**



Item # B414 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 # B413 Batch IQ Installation.

We have available a very impressive complete heat treat department consisting of the following; Six (6) batch IQ furnaces all gas fired with working dimensions of 36" X 48" X 32" and capable of 1750F. Eclipse burners. Half of these were manufactured by Holcroft the others build by Ipsen. All have top cools and five of six have 3,000 gallon quench tanks (the sixth has no quench tank). All are set up for Nitrogen/Methanol atmosphere. Also available are tempers, washers, charge cars, brand new alloy components and mountains of spare parts. Cast and fabricated baskets, base trays and fixturing are also available. Quench oil is also available Houghton 3440. Very recent UPC controls-all top of the line with 15" screens. Everything is in excellent condition and currently in operation. Vendor will consider selling components individually. **Asking price for each furnace is \$125,000 USD. Please inquire about individual pricing for other items.**



Item # B410 Box Furnace.

Manufactured by Systems West this unit has working dimensions of 60" high x 60" wide x 60" deep. Electrically heated 480/3/60, 100 KW. Operating temperature of 1650F with a maximum temperature rating of 2000F. Model Number: SW-555-B. Temperature Controls: Honeywell UDC 2000 controller & overtemp, model DR-4200 circular chart recorder. SCR power controller. Free standing NEMA 12 panel. Air operated vertical rising door. Fiber lined with solid fire brick hearth. Hoskins #875 coiled wire heating elements on three walls and door. 330 alloy recirculating fan mounted in the roof. Furnace can be operated at 2000 deg. without fan. Excellent condition. **Asking \$42,500 USD.**



Item # B406 Carbottom Furnace.

Working dimensions of 7' wide X 7' high X 12' long. Manufactured by North American Manufacturing. Natural gas heated. Ceramic fibre lined. Very good condition. **Asking price and more details to come.**



Item # B405 Surface Combustion "Super 30" Allcase.

Surface Combustion batch IQ furnace with working dimensions of 30" X 48" X 30". 1980's vintage with dual quench cylinders. Currently electrically heated but vendor has a complete gas combustion system and is willing to convert the furnace to gas. To convert to gas heating the vendor is willing to quote the installation of the combustion system and adding U tubes. Good overall condition. **Asking \$39,500 USD** for the furnace and combustion system.



Item # B402 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 nitriding but capable of carburizing. Installed and in good condition. **Asking \$55,000 USD.**



Item # B401 Carbottom Furnace.

Gasfired recuperative, jet recirculating, annealing, normalizing, stress relieving cart type furnace. Manufactured by Johnson, Serial number 1667. Working dimensions of 30' wide X 40' long X 15' high. Maximum operating temperature of 1800F. Utility requirements; 480 volts, 3 phase, 60 hertz. Natural gas; 1000 BTU/cubic foot. 4 PSIG maximum pressure. Honeywell controls with Allen Bradley SLC 503 PLC. Krom-Schroder flame safety management. Footprint 46' wide X 50' long X 36' high. Furnace has doors at both ends, fiber lined. 4 zones of control. Self propelled car.

Please call for pricing.



Item # B400 Surface Combustion Super 30 Allcase.

Surface Combustion Super 30 Allcase with working dimensions of 30" wide 48" deep X 24" high. S/N BC-41088-1. Electrically heated 480v/3ph/60cyle. Operating temperature 1350F to 1750F. Newer style with dual quench cylinders and top cool. Controls are in a free standing panel with Eurotherm digital controllers and over-temp. Multi-pro data logging and carbon control. Includes charge car. Good condition. **Asking \$60,000 USD.**



Item # B399 Carbottom 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.

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



Item # B397 "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 # B391 Ipsen T-11 Batch IQ Furnace.

Model T-11 gas fired batch IQ furnace with an operating temperature of 2000F. Working dimensions of 36"W x 24"H x 48". Voltage 460/3/60. External dimensions of 9'W x 14'7"H (Assembled) x 22'L – Approx. Standard T-11 Ipsen batch type atmosphere furnace with integral hot oil quench. Furnace has "Waukee" flow meters for Ammonia, Endo, Air and Natural Gas. There are a total of twelve (12) Eclipse (SER) single ended recuperative burners with Kanthal APM (Advanced Powdered Metallurgical) vertical radiant tubes. Controls mounted and wired in an enclosure attached to the right hand side of the furnace includes the following a Yokogawa digital temperature control, Yokogawa digital over temp control, Yokogawa digital oil temp control, Yokogawa digital over temp (oil) control, three (3) A.C. Amp meters, one for each quench agitator and all necessary pushbuttons, signal lights, etc. Quench tank is gas fired with an Eclipse burner package. This furnace includes a stationary loader, gas fired Dunk & Spray washer, manuals & drawings. Good condition, just moved to indoor heated storage. **Asking \$75,000 USD.**



Item # B388 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 # B386 HIGH TEMPERATURE TUBE ATMOSPHERE FURNACE

High Temperature Tube Atmosphere Furnace. Manufacturer: Blue-M. Type: Atmosphere Vertical Tube Furnace. Max. Temperature: 2500°F. Work Zone Size: 2" Diameter x 12"High. Heating: Electric, Globar elements. Tube: Ceramic. Atmosphere: Air or Any Suitable Purge Gas. Last Use: Thermocouple Calibration.
Price: \$2,500 USD.



Item # B385 Lindberg electric pit type cyclone furnace / nitriding furnace type:

12-ec-1620-12, 480 volts, 27 kw, 3 phase, 1-1/2 h.p. fan motor,max operating temp: 1250 f, working dimation: 16" dia. X 20" deep, aprox. Weight: 1700 lbs., heating elements: helical coil type nichrome v, this furnace is equipt with a sealed retort and fan assembly for gas nitriding. **\$9,800.00 USD.**



Item # B374 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. **SALE PRICE: \$18,000.00 USD.**



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

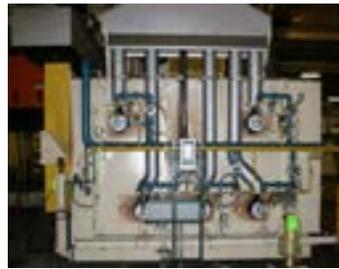
Working dimensions; ID: 8' wide x 30' long x 5' high, electric, 480/3/60, 325kw; 1400F, complete with ceramic fiber lining, 3 zones of control each with top mounted alloy recirculating fan, powered car with cast deck and 60,000# load capacity, hydraulic pump set for lifting cylinders, control panel with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

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



Item #B367 Atmosphere Box Furnace.

Manufactured by McLaughlin Services. S/N MS-11-604-01. Natural gas heated-2.8 MBTU's/hour. Maximum operating temperature of 2000F. Voltage 480/3/60/100 Amps. Work area 166"W x 20"H top of piers to door arch, 32"H opening x 120"L. External dimensions; 16"W x 13'H x 14'L - Approx. Controls; Mounted and wired in a free standing panel includes an "Super Systems, Inc." (SSi) control system with HMI touchscreen interface. Front loading box furnace with an air operated vertical lift door. Furnace lining consists of ceramic fiber modules on the walls, roof and door. The floor is insulated with "IFB" Industrial Fire Brick. The furnace hearth consists of HT alloy rails and is designed to handle 4000 pounds @ 2000°F. There are two (2) roof mounted fans in this furnace to circulate heat and atmosphere. This furnace is equipped with two (2) Waukee Flo-Tronic Nitrogen Flowmeters. There are a total of ten (10) Kromschroder pulse firing recuperative burners that fire into "P" type radiant tubes. There are four (4) zones of control in this furnace. Excellent condition-like new. **Asking \$165,000 USD.**



Item #B352 Pacific Scientific Box Furnace.

Working dimensions of 72" wide X 120" long X 48" high, Gas fired radiant tube, maximum operating temperature of 2050F. Air operated vertical lift door, fiber lines, new refractory piers (12), hi-temp horizontal radiant tubes (6 above, 6 below), full safeties, side exhaust guard. Free standing control panel-rewired panel with Honeywell Tru-Trend circular chart and Honeywell digital controllers and overtemp. Atmosphere capable. Comes with spare radiant tubes. Very good condition. **Asking \$70,000 USD.**



CONTINUOUS

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- **Item # C326 SOLO Swiss Mesh Belt Furnace**
- **Item # C325 Sinterite Mesh Belt Conveyor Furnace**
- **Item # C324 C.I. Hayes Mesh Belt Furnace**
- **Item # C323 Aichelin Cast Link Furnace Line**
- **Item # C322 Surface Combustion Rotary Hearth Furnace Line**
- **Item # C321 Austempering System**
- **Item # C320 Lindberg Pusher Line**
- **Item # C319 CI Hayes High Temperature Pusher Furnace**
- **Item # C317 CI Hayes High Temperature Pusher Furnace**
- **Item # C314 Roller Hearth Furnace (Atmosphere)**
- **Item # C312 Surface Combustion (Pifco) Roller Hearth Line**
- **Item # C311 Ipsen Pusher Line P-12**
- **Item # C308 AFC Mesh Belt Hardening Furnace**
- **Item # C302 Mesh Belt Austemper Lines (2 available)**
- **Item # C301 Cast Link Belt Quench and Temper Line**
- **Item # C299 Sunbeam Rotary Hearth Furnace**
- **Item # C296 C.I. Hayes High Temperature Tube Furnace**
- **Item # C283 Denton Thermal Systems 2150°F Rotary Hearth Furnace**
- **Item # C269 CI Hayes Mesh Belt Brazing/Sintering Furnace**
- **Item # C265 Sunbeam Pusher Carburizer**
- **Item # C219 ABBOTT**

Item #C326 SOLO Swiss Mesh Belt Furnace

SOLO Swiss Mesh Belt Furnace. Built in 1995 this furnace has a max temperature of 1150 C with a main voltage of 3 x 400V - 50 Hz. The power input is 40 kw and has a heating zone power of 3 x 13 kw. The heated length is 4000 mm and the cooled length is 6000 mm with a channel section of 220 x 60/100 mm. The belt width is 200 mm and the working height with the belt is 40 mm. The conveyor belt speed is 90 cm per minute. This furnace was used to anneal stainless steel parts and various other materials (Brazing, Tempering, Hardening). Located in France. **Price on request.**



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 \$80,000.00 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. **Asking price \$50,000 USD.**



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.

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. 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 # C320 Lindberg Pusher Line.

Line consists of a 170F prewash, purge, 1500F pre-heat, 1550F high heat, 350F oil quench, air cool, 170F hot water wash, cold air quench, 375F three zone temper and 460F draw temper. Built and installed in 1976, electrically heated. Designed for martensitic heat treating of 52100 bearing steel. 10 trays in system each 46" X 28". Working height of 24". Each tray is capable of 700 pounds. Controls have been updated recently with a new SSI MCA6010 three gas analyzer. Currently installed and in production. Very well maintained and in excellent condition. **Very attractive asking price.**



Item # C319 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.

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).

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 # C312 Surface Combustion (Pifco) Roller Hearth Line.

60" x 60" Trays capable of 4000 lbs per tray. This line is gas fired and includes an SSi datalogging system. Also includes SBS Heat Exchangers and has waukkeetronic flow meters. Asking Price: \$450,000 USD. **Must be removed within the next few months All Offers Considered.**



Item # C311 Ipsen Pusher Line P-12.

Rebuilt by JL Becker Company. This is a complete line which includes; a Pre-wash, Hardening Furnace, Oil Quench, Post Wash, and Temper. It's setup for endothermic atmosphere and is currently installed and operating. Hardening furnace is capable of 1750 F and has 5 zones of control. Gross load 1000 pounds. 460 Volts/3 Phase/60Hertz. 3,000,000 BTU/hr heat input, gas fired, tray size 30" x 30" x 29" overall with loading. Good overall condition. **Asking Price \$250, 000 USD. Must be removed within the next few months All Offers Considered.**



Item # C308 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 conveyor. **Asking \$75,000 USD.**



Item # C302 Mesh Belt Austemper Lines (2 available).

Built by AFC-Holcroft these are mesh belt, gas fired austemper lines. Parts to be processed are metered on to the variable speed, 30" wide mesh belt, travel through an 8" long high heat zone, drop into an electrically heated salt quench tank then are carried on a conveyor out of the quench tank and into a washer. A circulating fan distributes heat and atmosphere evenly though the heating area. Heat is supplied by two U shaped radiant tubes that are recuperated. SSI controls monitor and control the atmosphere gases. Furnaces were in operation until March 2015. One furnace is 1989 vintage the other is a 2000 vintage. Both are complete, in very good condition and currently in storage. **Please contact us for pricing.**



Item # C301 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 # C299 Sunbeam Rotary Hearth Furnace.

Working diameter of 6', 8 station hearth, each station is 12" wide x 18" deep x 12 " high. The door opening is 1'-6" wide X 10" high. Gas fired, 620,000 BTU's, 3 radiant tubes and an operating temperature of 1750F. Built in 1977 and used for neutral hardening. Also included is a robotic arm for loading/unloading. The furnace is installed and in running condition, brand new radiant tubes and a rebuilt fan. All manuals and drawings are included. Good overall condition. **Asking \$40,000 USD.**



Item # C296 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 \$21,000.00 OBO**



Item # C283 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, Global 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: **\$29,000.00 USD.**



Item # C269 CI Hayes Mesh Belt Brazing/Sintering 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.

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.

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

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- Item #T340 Safed/Borel Annealing Furnace
- Item #T339 Box Tempering Oven
- Item #T338 Walk In Oven
- Item #T337 Box Draw Furnace
- Item #T336 Mesh Belt Temper
- Item #T335 Batch
- Item # T333 Composite Curing Oven / Heat Treat Oven
- Item # T330 AGF Rotary Temper Furnace
- Item # T329 Guspro Heat Cleaning Oven
- Item # T327 AOV Aluminum Drop Bottom Oven System
- Item # T325 3-Station Despatch Temper Furnace
- Item # T324 Ipsen Temper Furnace
- Item # T323 Box Temper
- Item # T321 Grieve Conveyor Oven
- Item # T320 Pifco Conveyor Oven
- Item # T319 Temper 48" W X 48" D X 36" H
- Item # T318 Large Box Tempering Ovens (4 available)
- Item # T316 Grieve Model# HX-1000 Electric Oven
- Item # T315 Electric Oven
- Item # T312 Recirculating Walk-In Oven
- Item # T303 Pifco Temper Furnace
- Item # T301 Lucifer Furnace
- Item # T290 Tempering Ovens 36" X 48" X 36" (2 available)
- Item # T286 Lindberg Box Temper

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 #T338 Walk In Oven

Walk In Oven. Recirculating walk in oven manufactured by Grieve. Model #B2-450, S/N 14094. Working dimensions of 72" high X 54" wide X 72" deep. Gas fired 350,000 BTU's. Temperature Controls: Partlow indicating controller and overtemp, process timer. Double swing open doors. Combination vertical and horizontal air flow. Insulated floor with tracks for a cart. Powered exhaust blower. Rear located combustion and fan chamber. Package burner system. Complete combustion controls and safeties. Door limit switch. Oven will be checked out and test fired prior to shipment. **Asking \$13,500 USD.**



Item #T337 Box Draw Furnace 24"H X 24"W X 36" D

Box Draw Furnace 24"H X 24"W X 36" D. Recirculating box type draw furnace manufactured by Lindberg. Electrically heated 460/3/60, 42 KW. Operating temperature 1250F. Model 243624-E12, S/N 18794. Temperature Controls: Upgraded control panel with new temperature controls. Standard "Cyclone" design. Coiled Nichrome heating elements are housed in a separate chamber. A high velocity paddle wheel fan delivers the heat to the work chamber and provides good uniformity. Air cylinder operated vertical rising door. Brick lined. Roller hearth. Furnace will be cleaned and painted, checked out and test fired prior to shipment. Guaranteed operational. Note: Furnace can be reconnected to operate on 230/3/60. Very good condition. **Asking \$18,500.00 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 #T333 Composite Curing Oven / Heat Treat Oven.

Manufactured by Epcon this unit has working dimensions of 30'L x 12'W x 12'H and overall dimensions of 31'3"L x 17'4.5"W x 22'4.5"H. Electrically heated with an Inconel 900 KW heater and an operating temperature of 800F. Two recirculating fans type; Two N.Y.B. Size 40 Plug Fans, capacity: 33,000 CFM Each. Motor HP: 30 HP-Each (480V/60HZ/3PH). Exhaust fan; type N.Y.B. Series 20 GI, Size 224DH, capacity 4,000 CFM, 5 HP motor. Interior is 18 Ga. Aluminized Steel and exterior is 18 Ga. Carbon Steel. Insulation: 8# Density Mineral Wool, 7" thickness. Control Panel: NEMA-12. Power Supply: 480V/60HZ/3PH. Double swing doors. Excellent condition, virtually unused. New this was \$811,000 USD. **Asking \$130,000 USD.**



Item #T330 AGF Rotary Temper Furnace.

Model RCTP5-5D-3618 manufactured by American Gas Furnace Company. Retort diameter 36", 16' long. Gas fired capable of 1200F. Eclipse burners. Overall length 23.5', width 64.5", height 10' 11". Very good overall condition. **Asking Price: \$10,000.00 USD.**



Item #T329 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 #T327 AOV Aluminum Drop Bottom Oven System.

Model: DBF-3X3-E. Electric Heat, 480V/3Ph/60Hz Work Zone: 3ft Dia. x 3ft H. Includes Quench tank. Temperature Rating: 1200°F. Controls are included but need to be replaced. **Asking Price: \$ 45,000 USD. Offers Considered**



Item # T325 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 # T324 Ipsen Temper Furnace.

Standard Ipsen design tempering furnace with vertical lift door, full width roller hearth and ceramic fiber board insulation. Door jambs are brick. Bottom mounted recirculating fan distributes the heated air. Gas train and combustion system is mounted to the right hand side of furnace. Manual load/unload table is included. Mounted and wired in a free standing enclosure attached to the furnace includes Honeywell UDC digital controllers and process timer etc. Heated: Natural Gas - 250,000 BTU's. Model Number:DLR-11-G. Serial Number:57904. Max. Temperature:1200°F. Voltage:230/3/60/20 Amps. Work Area:36"W x 24"H x 48"L. External Dimensions:6'W x 10'H x 8'L. **Asking Price: \$19,500 USD.**



Item # T323 Box Temper.

Manufactured by Despatch Industries this is a Model WB73, S/N 119895. Working dimensions of 42" wide X 72" long X 42" high, Overall dimensions are 97" wide X 103" long X 148" deep. Weight 11,500 pounds. Electrically heated 480V/120KW/3 Phase, maximum operating temperature 1350F. Digital temperature control and high limit control with a circular chart recorder. Air operated vertical lift door. Heated air is circulated by 2 roof mounted belt driven fans. Power to the elements is through SCR control. Air safety switches monitoring both fans will terminate power to the elements in the event of fan failure. There are provisions for two shelves, but no shelves are included. Tested and complete. **Asking Price: \$29,500 USD.**



Item # T321 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.

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 # T319 Temper 48" W X 48" D X 36" H. Manufactured by Williams in 1999.

Gas fired, burner box, operating temperature of 1500F. Fan included but needs to be installed. Some misc., components missing and minor repair required. **Asking Price: \$29,000 USD.**



Item # T318 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 (20HP-13,000CFM), Rear-Mounted Heater Box with Eclipse Burner System, Alloy Skid Hearth, Forced Cool Down Fan System (7,333CFM), 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 # T316 Grieve Model# HX-1000 Electric Oven. Max.

Temp: 1000°F, +/- 10°F Uniformity. Circulated Air: 1000 CFM, 3/4 H.P. Fan Motor. Insulation Thickness: 8". Single door. Rated Work Zone: 38"W x 20"D x 26"H (Measures 36"W x 19"D x 25"H). Power Rating: 20 kW. New Upgraded Controls: Temperature - SSI Series 7 7EK (Super Systems, Inc.) Hi-Limit - SSI 7SL. Outside Dimensions: 62"W x 40"D x 61-1/2"H (new dim.). Approx. Shipping Wt.: 2740 lb. **Asking price: \$8,900 USD.**



Item # T315 Grieve Model# HX-1250-E, Electric Oven, Max. Temp:

1250°F, +/- 10°F Uniformity. Circulated Air: 1400 CFM, 1 H.P. Fan Motor. Insulation Thickness: 10". Single door. Rated Work Zone: 38"W x 20"D x 26"H (Measures 36"W x 19"D x 25"H). Power Rating: 30 kW. New Upgraded Controls: Temperature - SSI Series 7 7EK (Super Systems, Inc.) Hi-Limit - SSI 7SL. Outside Dimensions: 66"W x 44"D x 65-1/2"H (new dim.). Approx. Shipping Wt.: 3300 lb. **Asking Price: \$ 10,900 USD.**



Item # T312 Recirculating Walk-In Oven.

Manufacturer: Despatch. Inside Dimensions: 66"high x 54"wide x 68"deep. Heated: Gas fired. DG-300 Heater. Temperature: 650 deg. F. Model Number: V-41. Serial Number: 96267. Temperature Controls: Part low indicating controller and overtemp. Description & Features: Double swing open doors, horizontal air flow, insulated floor with tracks for a cart, powered exhaust blower, top mounted combustion and fan chamber. Atmospheric type burner system. Complete combustion controls and safeties. Oven will be cleaned and painted, checked out and test fired prior to shipment.

Asking Price: \$13,500.00 USD.



Item # T303 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 # T301 Lucifer Furnace,

Model Number 46GT-R36, Serial Number 6418, Working Dimensions of 24" w x 36" d x 24" h. Insulation and elements are in good shape. Front lift door with a foot actuator. Controls: Honeywell round chart recorder, Honeywell overtemp, No controller. Power: 460/3/60 28 Kw 35 Amps, Temperature: Max 1650° F. Nitrogen Atmosphere. **Asking Price: \$12,500.00 USD as is, where is.**



Item #T290 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. 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

See something you need, click on the link or scroll through all the items for sale. Searching for something we don't have listed, fill out our [Contact Form](#).

- Item # G198 3,000 CFH Endothermic Generator
 - Item # G197 Ammonia Dissociator
 - Item # G196 Surface Combustion 5000 CFH Endo Generator
 - Item # G195 Surface Combustion 2400 CFH Endo Generator
 - Item # G194 Endothermic Generator 9,000 CFH
 - Item # G193 Pacific Scientific Endothermic Gas Generator
 - Item # G189 Surface Combustion 2400 CFH Endo Generator
 - Item # G178 Ammonia Dissociators (4 available)
 - Item # G176 Surface "Multi-Bottle" Endo Generators
 - Item # G173 Lindberg Endo Generator
 - Item # G169 Gasbarre/Sinterite Furnace Division Endo Generator
-

Item # G198 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.

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.

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 # G195 Surface Combustion 2400 CFH Endo Generator.

Manufactured by Surface in 1990 this unit was rebuilt by Park Thermal. Two retorts, gas fired with an operating temperature of 1950F. Air cooling. SSI Atmosphere controls. Complete and in good condition. **Currently in storage. Asking \$25,000 USD.**



Item # G194 Endothermic Generator 9,000 CFH.

Manufactured by the JL Becker company this is a 3 retort, 9,000 CFH endothermic generator. Designed so that each retort can be shut down independent of the others. Air cooling. Control via PLC with touch screen interface. Currently installed but not in operation. Complete, in good shape and ready to operate. **Asking \$75,000 USD.**



Item # G193 Pacific Scientific Endothermic Gas Generator.

Natural gas, Model # PGF 3000-EN, Serial #416417, Max Temp 1950°F, Voltage 460/3/60, Work Area 3000 CFH, Dimensions: 42"W x 86"H x 106"L - Approx. Standard "Pacific Scientific" design Endothermic Gas Generator with water cooled shell & tube heat exchanger, Waukee vane pump, Waukee flow meters, atmospheric type ring burner. Generator just removed from service on 4/2015. Controls: Mounted and wired in an enclosure attached to the generator includes a Honeywell programmable logic controller (PLC) which controls all functions of the generator. The PLC also monitors/controls temperature, dewpoint and flow. There is a Honeywell digital high limit mounted in the same enclosure. This generator has a "Waukee" rotary vane pump and "Waukee" ratio tronic digital flow controls. This generator is also equipped with a "Nova" dewpoint system. Available immediately and in very good condition FOB East Chicago, IN. **Please call for pricing.**



Item # G189 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).

Built by Sargeant & Wilbur, 4 electrically heated Ammonia Dissociators. Model GAD3000E. 3,000 CFH capacity. Maximum temperature 1759F. Voltage 480/3/60/60kW. External dimensions of 5'Wx6'Hx8'L. Controls: Mounted and wired in a freestanding 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.

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 “EndoInjector”. Very good condition, ready to go. **Asking \$75,000 USD.**



Item #G173 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.

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 “mixer” 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

See something you need, click on the link or scroll through all the items for sale. Searching for something we don't have listed, fill out our [Contact Form](#).

- **Item # I169 Induction Power Supply**
- **Item # I164 Ajax Tocco Induction Power Supply**
- **Item # I160 Ajax Tocco Power Supply (unused)**
- **Item # I158 Induction Power Supply**
- **Item # I153 Raydyne Induction System**

Item # I169 Induction Power Supply.

Pillar Mark 11 100 kW, 10 kHz Induction Power Supply. Manufacturer: Pillar. Input Voltage: 480/3/60/133 Amps/111 KVA/.95 P.F. Output:100 kW, 10 kHz. Output Voltage: 440V or 800V . Model: AB7104-108/MK11. Serial Number: 6414 IAT. Includes a full set of spare boards. Good condition and ready to go. **Asking \$19,500.00 USD.**



Item # I164 Ajax Tocco Induction Power Supply.

Model#OL-426-150-3/10-00M.Manufactured12/06.SerialNumber:46-1128-11.WiringDiag.: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 (unused).

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. http://www.ajaxtocco.com/applications/documentlibrary/Inductron%20PT_092003.pdf New this unit
was \$86,000 USD, **asking \$39,000.00 USD.**



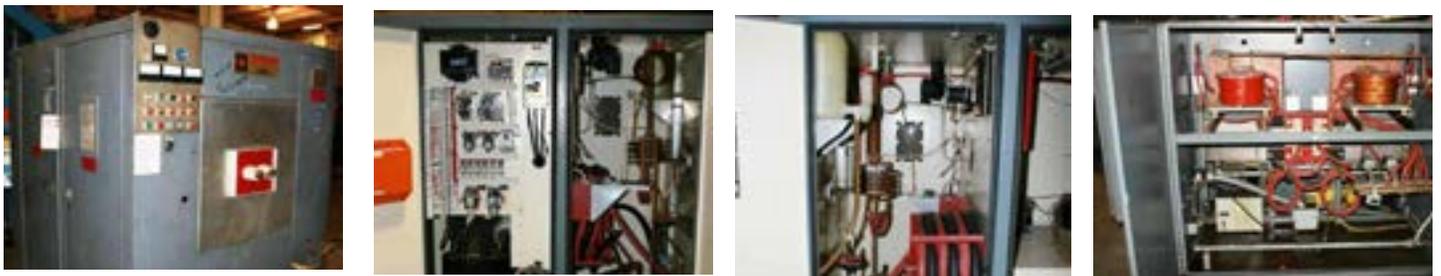
Item #1158 Induction Power Supply.

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 #1153 Raydyne Induction Heating System. I

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

See something you need, click on the link or scroll through all the items for sale. Searching for something we don't have listed, fill out our [Contact Form](#).

- Item # L8 Clark Micro Hardness Tester
- Item # L7 Leco Micro Hardness Tester
- Item # L6 Detroit Testing Brinell Hardness Tester
- Item # L5 Air-O-Brinell Hardness Tester
- Item # L3 Laser Diffraction Particle Size Analyzer
- Item # L1 Spectra-Tech 0044-003 Infrared Microscope

Item #L8 Clark Micro Hardness Tester.

Model DMH-2, Serial number 3388. Good operating condition. Asking \$6,500.00 USD.



Item #L7 Leco Micro Hardness Tester.

Complete and in good condition. Unit has become surplus to the vendors organization. **Asking \$7,000.00 USD.**



Item #L6 Detroit Testing Brinell Hardness Tester. Manufacturer:

Detroit Testing. Model: PHL2. Serial: 190. Range: 0 - 4500 kg. Footprint: 24"W x 37"L x 62"H (84"H with cart). In working condition. Last calibrated April 2016. **Asking Price: \$7,000 or best offer.**



Item #L5 Air-O-Brinell Hardness Tester. Manufacturer:

Tinius Olsen "AIR-O-BRINELL". Range: 0 - 3000 kg. Serial: 66990. Footprint: 15"W x 29"D x 44"H (68"H with table). In working condition. Last calibrated April 2016. **Asking Price: \$5,500 or best offer.**



Item #L3 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,

Model WHK 10X 201, Reflected & Transmitted light, multiple objectives, Polaroid 4x5 attachment. **\$6,500.00 USD.**



MISCELLANEOUS

See something you need, click on the link or scroll through all the items for sale. Searching for something we don't have listed, fill out our [Contact Form](#).

- Item #M404 AFC Dunk/Spray Washer
- Item # M403 Houghton Aqua Quench 3699 Polymer (4)
- Item # M402 Closed Loop Water Cooling System
- Item # M401 Tenaxol Quench Oil Accelerator
- Item # M400 Nitrogen Generating System
- Item # M399 Eclipse Burners, Recuperators and Spark Igniters
- Item # M396 Surplus Cast Link Belt
- Item # M394 Hi Tech Weighing System
- Item # M393 AGF Rotary Washer
- Item # M391 Cryogenic Stainless Twin Tank
- Item # M385 Giant Finishing Machine
- Item # M384 Surface Combustion Washer
- Item # M383 Spray Washer
- Item # M381 Water Cooling System
- Item # M380 Wheelabrator
- Item # M379 Georg Fischer Shot Blast System
- Item # M378 1 Surface Combustion Radiant Tube and 4 supports
- Item # M371 Dry Coolers Pumping Station
- Item # M370 SBS Quench Airs (2 available)
- Item # M366 Wheelabrator Rubber Belt Tumbleblast
- Item # M365 Dual Lane Conveyor Washer
- Item # M363 SBS Unit
- Item # M348 Ipsen Automatic Dunk/Spray Washer
- Item # M346 SBS "QuenchAir"
- Item # M341 AFC Charge Car
- Item # M334 Berg Water Chiller
- Item # M314 Holcroft Dunk/Spray Washer

ITEM #M404 AFC DUNK/SPRAY WASHER

AFC Dunk/Spray Washer. Gas fired with working dimensions of 36" X 48" X 30" high. Serial number 60702. 480 volt, 3 phase, built in 1993. Currently set up to be loaded with a vacuum loader but could easily be converted back to a charge car configuration. Good condition.

Asking \$10,000 USD.



Item #M403 Houghton Aqua Quench 3699 Polymer (4).

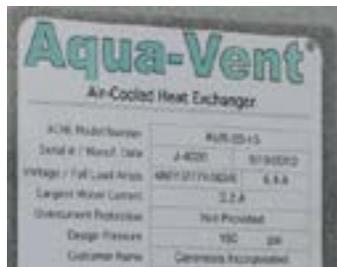
Available for sale are four (4) Totes of Houghton Aqua Quench 3699 Polymer Quenchant. Material has never been used. Total amount available is 1,000 Gallons.

Asking Price is \$2,500.00.

Item #M402 Closed Loop Water Cooling System.

Manufactured by Dry Coolers in 2010. Model #CDX-150-120-ST. 480V/227V/30/60Hz. Closed loop system with air cooled heat exchanger, model AVR-35-15. S/NJ-4720. 15GPM. Controls: Mounted and wired in an enclosure attached to the pumping system includes digital temperature control, disconnect switch etc. Excellent condition.

Asking \$7,950.00 USD.



Item #M401 Tenaxol Quench Oil Accelerator.

Available are 6 new, unopened 55 gallon drums of Tenaxol Quench Oil Accelerator for use with Park AAA quench oil. New this was \$900.00 USD/drum, asking \$450.00 USD/drum.



Item #M400 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.

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 (59-88kW), 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.

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.**



Item #M394 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 \$10,000 USD.**



Item #M393 AGF Rotary Washer.

Model RCW-W-R 23-2.5-4-4 gas fired rotary washer manufactured by American Gas Furnace Company. 23" diameter retort with 48" of washing and 48" of rinsing. Operating temperature of 150F-180F. Overall size is 13' long X 7.5' wide X 7' 10". Very good condition. **Asking \$10,000 USD.**



Item #M391 Cryogenic Stainless Twin Tank.

Manufactured by NDA Engineering in 2006. Operating temperature to -346F. 240 Volt. from Internal dimensions left hand side 70cm x 65cm x 80 cm deep (364 litres), right hand side 70cm x 100cm x 80cm deep (560 litres) **Asking Price \$6,500 USD.** Located in New Zealand.



Item #M385 Giant Finishing Machine.

Manufactured by "Giant", Model GB-10 Spiral bowl with Internal Separation Vibratory Deburring and Finishing Machine. 10 cubic foot process capacity with 5 hp motor. Maximum load capacity 2,000 pounds. Bowl diameter 65", unload height 39". NEMA12 control panel including 0-6 hour process timer and lapsed time recorder. Control panel is JIC approved and U.L. listed. Standard voltage; 460/3/60 cycle. This is a brand new, unused tumbler. New this was \$45,000 USD, **asking \$30,000 USD.**



Item #M384 Surface Combustion Washer.

Model WG 30-48-30, S/N BC-39290-1. This is a spray only style with working dimensions of 30" wide X 48" deep X 30" high. Overall dimensions of 72" wide X 110" high X 88" long. Gas fired, maximum temperature 200F. Good condition. **Asking \$12,500 USD.**



Item #M383 Spray Washer.

Manufactured by Park Thermal. Working dimensions of 30" X 48" X 30". Gas heated with a maximum temperature of 150F. Good condition and still in operation. **Asking \$15,000 USD.**



Item #M381 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.**



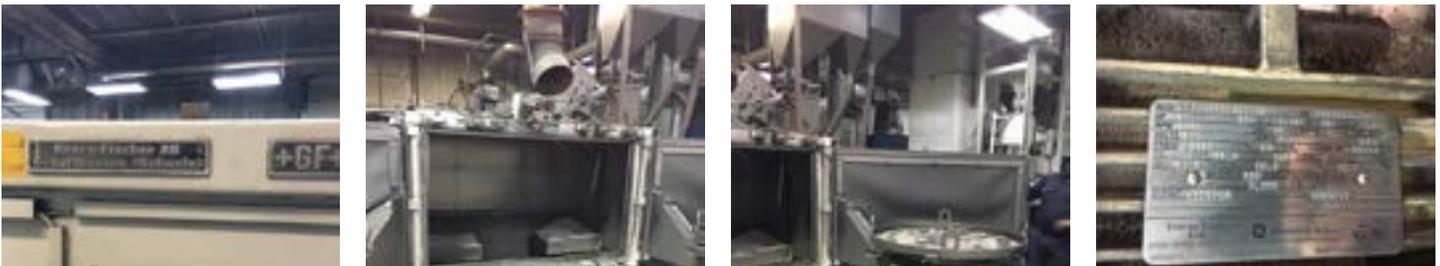
Item #M380 Wheelabrator – Bronco.

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: \$45,000 USD. (Includes loading at the facility)**



Item #M379 Georg Fischer Shot Blast System.

This unit is currently installed and in very good condition. Included are \$10,000 worth of spare parts. **Asking \$20,000 USD.**



Item #M378 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 ½ inches in diameter and 60 inches long.

Asking \$3,000 USD.



Item # M373 Gibson Tumblast. 6 Cubic Feet Rubber Belt Tumblast.

No loader or dust collector. Good condition. **Asking \$15,000 USD. Must be removed within the next few months All Offers Considered.**



Item # M372 Pangborn Rotoblast.

Pangborn® Rotoblast® Barrel Model 12GN. 12 Cubic Feet Rubber Belt Tumblast w/Loader & Dust Collector. Good condition. **Asking \$30,000 USD. Must be removed within the next few months All Offers Considered.**



Item # M371 Dry Coolers Pumping Station.

Medium sized Dry Coolers closed loop water cooling system. Installed and complete. More details to come. **Asking \$7,500 USD. Must be removed within the next few months All Offers Considered.**



Item # M370 SBS Quench Airs (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 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 Manufacturer: Grapar. Type:

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 10'6'H 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. 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: \$17,500.00.**



Item # M348 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 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.

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 # M336 Cryogenic Unit.

NU-BIT Cryomersion Model 1500, S/N 9911119. This is a liquid nitrogen cryogenic unit used for treating material to -310 degrees Fahrenheit. Working dimensions of 40" X 30" high X 30" wide. Maximum load 1500 pounds, normal load 800 pounds. 230 volts AC-20 amps., 3 phase, 60 HZ. Overall dimensions 14' long X 11' wide X 13' high. Manufactured in 1999. Good operating condition with all manuals and drawings included. **Asking \$10,000 USD.**



Item # M334 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.

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.**



SALT

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- **Item # S001 Mesh Belt Austemper Lines (2 available)**

Item # S001 Mesh Belt Austemper Lines (2 available).

Mesh Belt Austemper Lines (2 available). Built by AFC-Holcroft these are mesh belt, gas fired austemper lines. Parts to be processed are metered on to the variable speed, 30" wide mesh belt, travel through an 8" long high heat zone, drop into an electrically heated salt quench tank then are carried on a conveyor out of the quench tank and into a washer. A circulating fan distributes heat and atmosphere evenly through the heating area. Heat is supplied by two U shaped radiant tubes that are recuperated. SSI controls monitor and control the atmosphere gases. Furnaces were in operation until March 2015. One furnace is 1989 vintage the other is a 2000 vintage. Both are complete, in very good condition and currently in storage.

**Asking price for the 2000 furnace is \$95,000 USD,
the 1989 furnace asking price is \$75,000 USD.**



VACUUM

See something you need, click on the link or scroll through all the items for sale. Searching for something we don't have listed, fill out our [Contact Form](#).

- 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
- Item # VF315 AVS Vacuum Furnace (Rebuilt)
- Item # VF314 Ipsen Bottom Load Vacuum Furnace
- Item # VF313 Top Loading Vacuum Furnaces (6 available)
- Item # VF312 2400C Vacuum Furnace
- Item # VF311 Vacuum Furnace 6 Bar Quenching
- Item # VF309 Abar Ipsen Vacuum Furnace
- Item # VF308 Vacuum Pumping Package
- Item # VF307 Bottom Loading Vacuum Furnace
- Item # VF306 Edwards Stokes 1722-J Skid
- Item # VF305 Vacuum Hot Press
- Item # VF304 AVS Vacuum Sintering Furnace
- Item # VF303 Surface Combustion Vacuum Temper
- Item # VF301 Vac Aero 2 Bar Vacuum Furnace
- Item # VF300 Stokes Microvac Pump
- Item # VF299 Sunbeam Vacuum Furnace
- Item # VF297 Remanufactured Stokes 412H-11 Piston vacuum pump
- Item # VF296 Remanufactured Stokes 212J Piston vacuum pump
- Item # VF295 Varian/Agilent HS-20, Diffusion Vacuum Pump
- Item # VF294 Vacuum Annealing Furnace
- Item # VF289 Ipsen Vacuum Temper Furnace
- Item # VF285 20" Right Angle Poppet Valves (4 available)
- Item # VF282 AVS Vacuum Debinding/Sintering Furnace
- Item # VF281 Surface Combustion Vacuum Furnace
- Item # VF271 SINTERING/DE-WAX FURNACE
- Item # VF267 Semi-Continuous Titanium Diffusion Bonding Hot Press
- Item # VF266 Kinney 75 CFM Vacuum Pump
- Item # VF265 Stokes 149H-11 80 CFM Vacuum Pump
- Item # VF255 Roots Gas Blower
- Item # VF254 MD Blower, 350 CFM
- Item # VF243 35" Diffusion Pump
- Item # VF242 35" Diffusion Pump

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 X 10⁻³ Torr Ultimate vacuum) 5 u/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 \$199,000 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.**



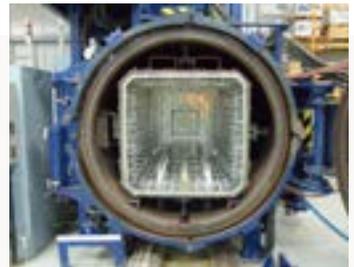
Item # VF319 Vacuum Induction Melting System

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 2010 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. **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. **Asking \$115,000 USD.**



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. Very good condition. Rebuilt July 2015. Asking \$200,000 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.**



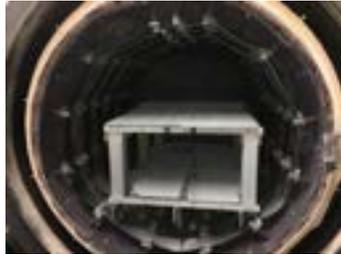
Item # VF311 Vacuum Furnace 6 Bar Quenching (Located in Turkey)

Vacuum Furnace 6 Bar Quenching (Located in Turkey). Working dimensions of 600 X 900 X 600 mm. 800 KG load capacity. Maximum operating temperature of 1350C. 6 bar quenching, nitrogen. 140kW heating capacity. Temperature uniformity of +/-5C above 850C with convection. Hard graphite felt insulation hot zone. Ultimate vacuum level of 8 X 10⁻² mbar with rotary vane pump and roots pump. 380-220V-50HZ-3 phase. Excellent condition. **Asking 155.000 Euro.**



Item # VF309 Abar Ipsen Vacuum Furnace

Abar Ipsen Vacuum Furnace. Model HR 34 X 36. Hot zone 24" X 24" X 36", moly construction with moly elements. Eurotherm 2704 & 92HL controls. Operating temperature of 2500F. 20" Diffusion Pump with Stokes 212 mechanical pump in sound-reducing enclosure. Spare Rebuilt Stokes 212 mechanical pump available. Current footprint: 24' Deep x 18' Wide x 12' High. Power: 3 zone control, 55 KVA each = 165 KVA Total Heating Power. Loader included and 2 tier moly Grid Fixture. H2 purge. Good condition, was in production until January 1st, 2017. Vessel was new in 1990. **Asking \$85,000 USD.** Flexible vacuum hose included. **Asking \$7,500 USD.**



Item # VF308 Vacuum Pumping Package.

Vacuum Pumping Package. This system has barely been used and is in excellent condition. United Vacuum Pumping Package with one (1) 7.5 HP UNI-VAC 200 Rotary Piston Pump and one (1) UNI-VAC 607 Booster Pump with direct drive 7.5 HP motor. Rated for 800 CFM. Serial number 2040373 / 6070822. Oil Mist Separator model 900-291-025. System is skid mounted to permit transport via fork lift. Includes NEMA panel with vacuum switches and water miser. Pushbutton type on/off controls. Wired with plug connector for 480v/3ph/60hz. Flexible vacuum hose included. **Asking \$7,500 USD.** Flexible vacuum hose included.



Item # VF307 Bottom Loading Vacuum Furnace.

Manufactured by VacAero. 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/ air coil. Yokogawa paperless chart recorder. Honeywell DCP550 Setpoint programmer. Edwards vacuum gauge controller. Furnace is installed and presently in operation. Customer responsible for removal. Complete and in good overall condition.



Item # VF306 Edwards Stokes 1722-J Skid.

Warranty rebuilt Stokes 1722-J Skid. Stokes Model 900-412-014 Mechanical Pump (Newer Style), S/N: 069034482. Date: 2006-11. Motor: 10 H.P. Stokes 615-1 Blower. S/N: 813770X0898 Lot: 78315-38. Motor: 7.5 H.P. Skid Mounted. Interconnecting Pipe and Fittings. Stokes Demister. Immediate Availability. **Asking Price: \$ 23,500** in rebuilt condition with Rebuilder's



Item # VF305 Vacuum Hot Press. Max Temp 1000C/1830F. 6" x 6" x 15" work zone. Metal hot zone model 6615-1000 moly rod elements, moly & stainless steel shields w/ moly retainers. Three (3) sided heating. T/C control, DCP700 HONEYWELL two (2) channel controller. 15 KVA power supply - 208 volts/1pH/60Hz. 4" diffusion pump / 17.1 cfm mechanical pump. Granville Philips vacuum controller #91-270. Fan cooling 3/4 HP pin spitter mounted on the rear of the chamber. T/C control for overtemperature protection controllers.

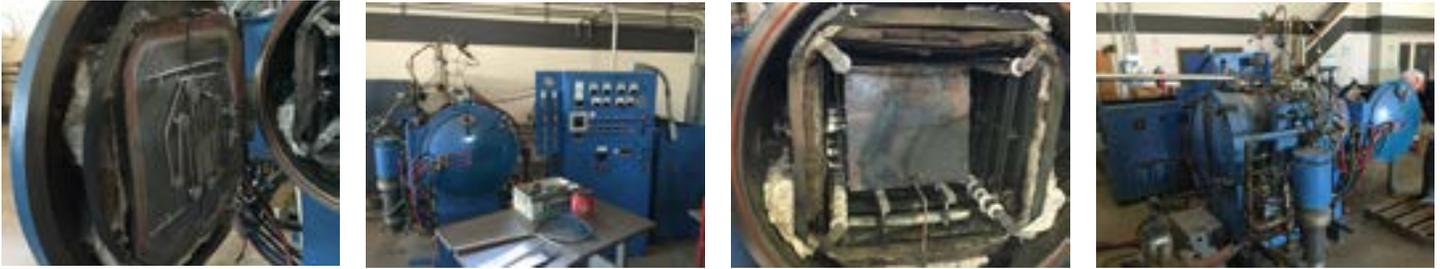
Diffusion Bonding Hot Press. Series 3520 Model 6-1315 Diffusion Bonding Hot Press, stainless steel interior cold wall chamber with full opening door, water cooled rams, ram seals, power feedthru ports, thermocouples, shuttered site ports & supported on the press frame. This system is designed to deliver up to 60,000 lbs of force to a compact in the furnace. The hydraulic cylinder is mounted on the upper horizontal section of the press frame. Force from the cylinder is transferred into the vacuum chamber by two (2) water-cooled ram extensions, which pass thru sliding vacuum seals at the top and bottom of the chamber. The bottom ram is stationary. The hydraulic cylinder has a 6" bore, so that full rated force will be applied at a hydraulic pressure of 2125 psi.

Utility Requirements: 15 KVA power supply - 208 volts/1pH/60Hz. Total connected load 120 Amps. Water 8 gpm, 30-40 psi, 60-70F. Compressed air 1 scfh, filtered, lubricated and regulated at 60-80 psig. Inert gas 10 psig regulated. Hot zone almost new. Always operated on closed loop cooling water. Unit was fully operational when removed from service. Includes (2) new feedthroughs and spare parts. **Asking Price: \$49,500 USD.**



Item # VF304 AVS Vacuum Sintering Furnace.

Model No. : 1-HMF-10-10-10-2350. Serial No.: 4-1368-07-86. Work Zone Size: 10" x 10" x 10" (actual opening is larger). Power: Electric, 80 KVA main transformer plus 2 ea. transformers 10-15 KVA front and back. Max. Temperature: 2450C / 4440F. Description: Metal Hot Zone, six moly shields & one stainless steel plenum layer. Moly elements & hearth. 6" Diffusion Pump. Welsh 1398 50 CFM Mechanical Pump, recently rebuilt. All fab. & electrical drawings available. Temp. Uniformity +/- 5C. Three zones of temperature control (front door, main, back panel). Moly retort included. Instrumentation: Waukee flowmeters N2 (100 CFH) & H2 (50 CFH). 301 Honeywell Programmable temperature controller with two slave Honeywell 2500 controllers & one 2500 high limit controller. GE Fanuc 9030 PLC with safety interlocks for Ar/N2. Terranova vacuum gauge. Condition: Good condition, working & operable. Overall Footprint: 10' Deep x 13' Wide x 7.5' Tall (could be 9' Wide with smaller transformers that are available). Approx. Wt.: ~3500 lbs. **Asking Price: \$ 50,000 USD. (obo)**



Item # VF303 Surface Combustion Vacuum Temper.

Manufactured by Surface Combustion Model HVT 36-48-24, S/N BO 40016-1. 220Volt, 3 phase, 60Hz, 220Kw. Working dimensions of 36" wide X 24" high X 48" deep with a weight capacity of 2,500 pounds. Not in use or installed. Most components are included but this unit should be regarded as a "project". **Asking Price: \$5,000 USD or best offer.**



Item # VF301 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 # VF300 Stokes Microvac Pump.

Model #212H-11 150 CFM 5HP motor. Roots Rotary Lobe Booster Pump. ID #839 697 020. Designation #38-RGS. Skid Mounted 1896 lbs. **Asking Price: \$6600 USD or best reasonable offer.**



Item # VF299 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 # VF297 Remanufactured Stokes 412H-11 Piston vacuum pump,

300CFM pumping speed, 4" ASA Inlet / 3" NPT Exhaust connection, 10HP, 230/460V, 50/60 Hz, 3-phase operation, water cooled, prepared for hydrocarbon oil. 12 Month Warranty. Part Number: ED-412H11-R. Pump Model: ED-A900412011. Price New: \$24,927.00. **Asking Price: \$14,950.00.**



Item # VF296 Remanufactured Stokes/Edwards 212J Piston vacuum pump,

150 CFM pumping speed, 3" ASA Inlet / 2" FNPT Exhaust connection, 7.5 HP, 230/460V, 60 Hz, 3-phase operation, water cooled, prepared for hydrocarbon oil. 12 month warranty. CSA marked. Part Number: ED-212J-R. Pump Model: ED-900212014. Price New: \$16,150.00. **Asking Price: \$9,750.00.**



Item # VF295 New Surplus Varian/Agilent HS-20,

Diffusion vacuum pump with ASA flanges, with a Standard Cold Cap, 17,500 l/s pumping speed, rated for 480V, 3-phase operation. 12 Month Warranty CE marked. Part Number: V84341309-R. Pump Model: V84341309. Price New: \$20,950.00.

Asking Price: \$16,500.00



Item # VF294 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 1×10^{-6} Torr. Maximum vacuum level to operate in continuous duty is 5×10^{-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 # VF289 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 # VF285 20" Right Angle Poppet Valves (4 available). 20" Right Angle Poppet Valves to mate to Varian HS-20 Diffusion Pumps. Removed from service in good operational condition by a company converting to cryo pumps. Offered in As-Is or Standard Rebuilt As-Is Price: \$ 1,800.00 (working, but no warranty, 30 Day Return). **Std. Rebuilt Price: \$ 3,150.00 (1 year warranty).** Valves are awaiting rebuild now. (2-3 weeks required ARO). Photo shows another representative RAV prior to rebuild.



Item # VF282 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: \$209,000 USD.**



Item # VF281 Surface Combustion Vacuum Furnace.

Model: IHVP-364830-2, S/N: VC-42202-1. WorkZone Size: 42”Wx60”Lx30”H. HotZone: All graphite, including hearth and elements. Vacuum System: Requires Stokes 1722 Skid (412H mechanical pump and Stokes 615-1 vacuum blower. Both are missing), 16” Port for diffusion pump, but no pump. Power Supply: 250kW 460V/3Ph/60Hz. Max. Temp.: 2400F. Max. Load: 3000lb at 1900F. Cooling Gases: Nitrogen, Argon, Helium. Gas Quench Capability: +12PSI positive pressure. Cooling Fan: Top mounted. Controls: Honeywell DCP-7700 Temp. Controller. Eclipse EMC-560 Hi-Limit. Honeywell Strip Chart Recorder. Philips Model 316 Vacuum Controller. Control Thermocouple: Ni/Ni-Mo. Fair condition. Location: Southern California. **Asking Price: \$29,000 USD.**



Item #VF271 SINTERING/DE-WAX 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.

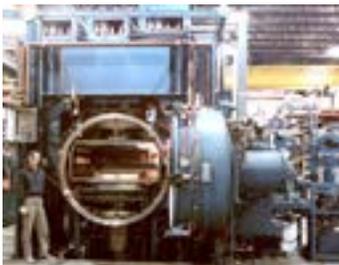
System consists of; Load Chamber. Rated for 2720kg load Moly Pin walking system rated for 2720kg load 44"wx54"dx6.5" high product size in semi continuous mode Stokes 612/300 pump/blower Mounted on roll out frame for easy maintenance

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. **As is \$890,000.00 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.



Item #VF266 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 F.O.B. West Coast U.S.



Item #VF265 Stokes 149H-11 80 CFM Vacuum Pump:

Rebuilt Stokes Model 149H-11, Lot# CD-81004 Mechanical Vacuum Pump, Rebuilt by Evey Vacuum in 2002 and stored in heated, dry area since then. **Asking Price: \$ 5,500.00 USD with 30 Day Right of Return if not satisfied.**



Item # VF255 Roots Gas Blower:

Rebuilt (per owner), Roots Model 2510J Whispair Max gas blower, 372 CFM, Roots I.D. 847-485-20, S/N 76 54846 with 5 H.P. Motor mounted on skid. Location: Pacific North-western U.S.

Asking Price: \$3,500.00 USD. 30 Day Right of Return, if unhappy.



Item # VF254 MD Blower, 350 CFM:

Rebuilt (per owner) M.D. Pneumatics 350 CFM gas blower, Model 11-3210, S/N 1735R A23, on skid but needs motor. Location: Pacific North-western U.S. **Asking Price: \$3,000.00 USD. 30 Day Right of Return, if unhappy.**



Item #VF243 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.) Location: Coeur d'Alene, Idaho 83814



Item #VF242 " 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.)



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 Refrigerated. Dry Coolers also offers quench oil coolers, filtration systems, and a unique outdoor mechanical room "Tower Shed". They are industry leaders in vacuum furnace cooling packages.



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.



Wirco.

Manufactures a full line of fabrications including baskets, fixturing, furnace fans (new and rebuilt), furnace rolls, muffles, corrugated boxes, wrought and cast radiant tubes and retorts. We design fixturing to specific customer requirements, and also rebuild furnace components such as fans and fan housings and most recently, cast U and W tubes. Our services and products provide lower operating costs and ease of use so our customers can focus their energy on their core business.



South-Tek.

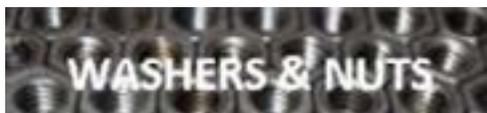
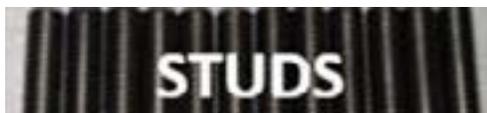
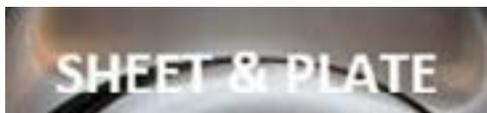
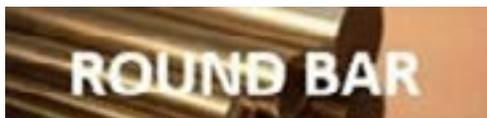
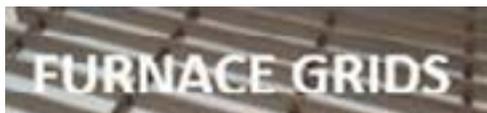
Manufactures a variety of Nitrogen Generators, from those designed to output a few liters per minute of Nitrogen flow rate for table top laboratory applications, to designs capable of producing 75,000 cubic feet per hour to meet the demands of some of the largest industrial plants. Our systems are capable 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.

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@gytinc.com Phone: 208 765-6854.



BUSINESS OPPORTUNITIES

We at "**themonty.com**" are very proud of the fact that since 1969 we have been putting heat treaters around the world together. The links below cover several areas where we can help your company such as finding a buyer for your heat treat plant, finding a commercial heat treat company for sale, posting free ads for individuals looking for a new position within the heating industry and a listing of companies looking to hire. Remember-if it has to do with heat treating we can put you in touch with the best people!

- **EMPLOYMENT OPPORTUNITIES**
- **INDIVIDUALS SEEKING EMPLOYMENT**

EMPLOYMENT OPPORTUNITIES

- **ITEM # O320 SERVICE TECHNICIAN WANTED**
 - **ITEM # O319 HEAT TREAT SALESPERSON WANTED-POLAND**
 - **ITEM # O318 SALES ENGINEERS/REPRESENTATIVES WANTED**
 - **ITEM # O317 PROCESS DEVELOPER WANTED**
-

SERVICE TECHNICIAN WANTED

Service Technician Wanted. McLaughlin Services, LLC's West Coast Office is in search of Heat Treating Service Technicians. Requirements are as follows:

- Proven field service experience
- Ability to troubleshoot, test, repair and service heat treat equipment
- English literacy
- Ability to work flexible hours
- Provide excellent customer support during field visits
- Manage all on site installation, repair, maintenance and test tasks
- Diagnose errors or technical problems and determine proper solutions
- Produce timely and detailed service reports
- Document processes
- Follow all company's filed procedures and protocols
- Cooperate with technical team and share information across the organization
- Build positive relationships with customers

Please forward resume including salary requirements to mwalters@mclaughlinsvc.com

HEAT TREAT SALESPERSON WANTED-POLAND

Heat Treat Salesperson Wanted-Poland. An international commercial heat treater is looking for a salesperson in Poland, preferably in Southwest Poland, the Wroclaw area and lower Silesia. This person can be either a full time employee or commissioned based. Must have a knowledge of heat treating and experience in dealing with international clients. gord@themonty.com

SALES ENGINEERS/REPRESENTATIVES WANTED

Sales Engineers/Representatives Wanted. McLaughlin Services, LLC is in search of experienced Sales Representatives for the following US regions:

Midwest
Northeast
Southeast
Southwest

McLaughlin Services, LLC is a furnace building company that also specializes in a variety of services that supports the heat treat industry worldwide. Please forward existing line card /resume to mwalters@mclaughlinsvc.com

PROCESS DEVELOPER WANTED

Tri-City Heat Treat Company located In Rock Island, Illinois seeking a Process Developer with Quoting Responsibility. Requirements: Heat Treat Experience in Carburizing, Carbo-Nitriding, Annealing, Normalizing, Induction Hardening, Solution & Aging of Aluminum, Solution treating, support areas to include Selective Painting, Straightening, and Cleaning. Equipment ranges from, Batch, Belts, Vacuum, Pits, and Induction. Quench mediums are typical oil, water, and air. Bachelor's degree preferred. Minimum two years quoting experience and process setup in a commercial heat treat environment. Cornerstone/Visual Shop software experience desirable.

Key Competencies:

Excellent written and oral communication skills
Detailed, organized, self-motivated and task oriented
Comfortable working in a shop environment
Excellent problem solving and analytical skills
Ability to communicate effectively with customers while work effectively in a team environment
Must be proficient in Excel and Microsoft Word
Please forward resumes to LaceyI@tcht.com tcht.com

INDIVIDUALS SEEKING EMPLOYMENT

- **ITEM # SE2 DIRECT HIRE FOR SALES**
- **ITEM # SE1 SEEKING EMPLOYMENT**

ITEM # SE2 SEEKING EMPLOYMENT - DIRECT HIRE FOR SALES

Direct Hire For Sales. Mechanical Engineering degree with 20+ years experience in consultative outside sales roles to all industries utilizing thermal processing equipment. Varying experience with design, sizing, sales, support and commissioning of combustion systems, electrical resistance heating, controls, furnaces, ovens, air heaters, refractories, mineral/aggregate drying/processing equipment, pyrometry, temperature uniformity surveying equipment, polymer & oil quenchants, and furnace alloy fixturing, baskets, grids, radiant tubes & related furnace parts. Please contact me at reply12345@yahoo.co

ITEM # SE1 SEEKING EMPLOYMENT

Looking for consulting opportunities in the heat treating industry. I have forty years of experience in senior level management at commercial heat treats. Offering hands on plant floor training in systems and procedures to improve your operating results. I will help you develop or improve production scheduling, inspection and quality methods, CQI-9 compliance, process flow diagrams, PFMEA, written instructions and customer service essentials. I will come to your facility and work with you to improve and enhance the performance of your heat treat. Please contact me at: jry2252@att.net or 248-909-0038.

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.

**Gord Montgomery,
W.G. Montgomery Limited**

Phone: 905 271-0033

Fax: 905 271-9324

Email: gord@themonty.com