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INTRODUCTION

Welcome to the February issue of “The Monty”, the publication for the latest news and trends from the global heat treating industry. In this issue you will find heat treating news from around the world combined with a number of new listings for used equipment. As always we look forward to your press releases, photos and comments.

Best regards,

Gord
Héroux-Devtek Inc. What makes this news item very interesting is the fact that Héroux-Devtek Inc., does not currently do any vacuum heat treating in house (at least at their Canadian locations). The fact that they are buying a new vacuum furnace indicates a change of philosophy. “Héroux-Devtek Inc., an international company specializing in the design, development, manufacture, integration, testing and repair and overhaul of landing gear and actuation systems and components for the Aerospace market, has purchased a 2.0 Bar High Vacuum Brazing System from SECO/WARWICK for their Scarborough, ON Canada facility. SECO/WARWICK offers efficient solutions, providing total value over the lifetime of the equipment. With advanced and robust technologies and many years’ experience in vacuum heat treating technology, there is a constantly growing interest in SECO/WARWICK products. So far, the company has provided hundreds of high vacuum furnaces worldwide and its solutions are well-known globally, especially in the American market. Jonathan Markley, SECO/WARWICK Managing Director in US remarked, “We are pleased to supply equipment specifically designed to meet the stringent specification of the Aerospace industry with furnaces in operation all over the world producing high quality work over a long service life.” February 1, 2017.

Picture Time. As promised from time to time we dig through our old photos file to see what we can find. Today we have these gems for you. February 1, 2017.

Gord Montgomery, Martin Beaton, Bohler Uddeholm, Jim Beingessner, B & W (now part of Bluewater Thermal, Kitchener, Ontario)

Termitec is a surface engineering and heat treating company located in Mexico which offers a few different processes including salt bath nitriding. The company recently installed a CODERE 250 series system which will be able to do Carbonitriding, Carburizing, Neutral Hardening and Austempering. CODERE (whose ad can be found on this page) is based in Switzerland we are seeing more and more of their systems outside of Europe. January 31, 2017.
Machine Tool Builders/Illinois. We made a mistake yesterday in our Monday Morning Briefing, a mistake which we apologize for. A reader sent us a story and photo about a company by the name of Machine Tool Builders in Machesney Park IL., a story which we thought meant the company was bringing their heat treating in house. In actual fact it would appear that Machine Tool Builders is getting into the new furnace business which rather surprised us. The North American market already supports a number of well established manufacturers of batch IQ furnaces and we know for a fact that there are not enormous margins in new furnaces. Having said that we wish the company well. January 31, 2017.

Monday Morning Briefing. From commercial heat treater East Carolina in North Carolina we have this note; “East Carolina Metal Treating, Inc. of Raleigh NC, proud to announce our sister company Virginia Metal Treating in Lynchburg VA was awarded ISO9001-2008 and AS9100 accredited by PRI group. Congratulations to the management and crew for their achievement. Regards Abdul Admani.” Where are they now? March Li. March was a metallurgist at Lufkin Gear in Texas before the entire facility was closed down last year. He would appear to be a very competent, knowledgeable fellow so it was no surprise to us that he quickly landed a job with GM. Stack Metallurgical in Portland, Oregon is probably the single largest commercial heat treater on the US west coast. The company recently had this announcement to make; “Greg Busey has been named Quality Manager effective 01/20/17. He had been filling this role on an interim basis during 2016 and the company decided it was well deserved to make the appointment official. Greg has over 30 years working at Stack and holds a wealth of knowledge throughout many aspects of the business. The Quality Team fully supports this choice and looks forward to having the stability that Greg provides. Congratulations on your promotion, Greg!” David Landless; “Renold PLC on Monday said it has appointed David Landless, former Bodycote PLC finance director, to its board as a non-executive director. The industrial chain supplier said Landless has joined the board with effect from Monday. Landless retired from his position at Bodycote, which supplies heat treatment, metal joining, hot isostatic pressing and coatings services, on January 1.”

Wall Colmonoy Announces Spring Session of Modern Furnace Brazing School in USA, May 16-18, 2017. Preserving the tradition originated by the late Robert Peaslee, a brazing pioneer who invented the first nickel-based brazing filler metal, Wall Colmonoy offers a spring session of Modern Furnace Brazing School on May 16-18, 2017 at Wall Colmonoy’s
Aerobraze Brazing Engineering Center in Cincinnati, Ohio. Engineers, technicians, quality managers, production managers, and others will participate in “hands-on” practical applications while learning about brazing technology from the industry’s leading brazing engineers. For over 60 years, Wall Colmonoy engineers have been gaining practical experience on actual problems in brazing plants around the world.”

**Largest Furnace Builders.** Over the years we have looked at the relative size of a number of new furnace builders around the world (http://wp.themonty.com/articles/) but we have typically concentrated on furnace builders in North America and Europe which is a mistake and we’ll tell you why. Fengdong is a publicly traded Chinese company which builds new furnaces. Based on their current share price the company has a value of about $2.4 Billion USD which to put it in perspective is roughly twice the size of commercial heat Treater Bodycote. To make this more interesting just 6 years ago the company was valued at about $240 million USD which gives you an idea about the growth rate-amazing. Since we are mentioning Asian furnace builders we should say that ACE Furnaces in India recently moved into a new building which is 3 times the size of the old one, the picture below gives you an idea.

We have always found press quenching to be a fascinating technology so when we were visiting a gear manufacturer recently we jumped at the chance to take a photo of a gear being heat treated in a Gleason press quench (hey we did have permission by the way). January 30, 2017.

**Ipsen Press Release.** “Ipsen wrapped up a record year by shipping 25 furnaces during the last three months of 2016. With destinations in six counties and 13 U.S. states, this equipment will support the Aerospace, Automotive, Commercial Heat Treating, Medical and MIM industries. Heat-treating systems ranged from a custom-built debinding and sintering furnace to a horizontal MetalMaster® vacuum furnace with a 20,000-pound (9,072 kg) load capacity. Included among the shipments were an atmosphere washer and loader, as well as several H2- and H6-sized TITAN® vacuum furnaces equipped with the PdMetrics® predictive maintenance software platform. This exclusive platform helps optimize equipment performance and minimize

From Furnace builder Lindberg we have this press release; “Lindberg/MPH announced the shipment of an atmosphere box furnace for research and development purposes. The maximum temperature rating for this furnace is 1100°C and has a work chamber of 36” W x 48” D x 36” H making it ideal for heat treating a variety of part sizes. The atmosphere box furnace has a wide temperature range of 760°C to 1,100°C.”
tems, 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.”


Gasbarre Products Press Release. “Gasbarre Products has four divisions one of which is the Gasbarre Furnace Group which includes Sinterite, JL Becker Company and CI Hayes. "Gasbarre Products, Inc. has announced that Alex Gasbarre has been appointed COO and President, Press & Technologies, at Gasbarre Products, Inc., St. Marys, Pensylvania, USA. The company also announced that Heath Jenkins, also of Gasbarre Products, Inc., has been promoted to VP Sales & Marketing. Gasbarre Products, Inc. was founded in 1973 to design, manufacture and service a complete line of powder compaction and sizing presses for the Powder Metallurgy industry. The Gasbarre Press Division, the founding division of the corporation, manufactures the original line of Gasbarre mechanical powder compaction & sizing presses and ancillary equipment. Alex Gasbarre began his career with the company in 2005 as a Production Manager. He is also currently a member of the Powder Metallurgy Equipment Association Board of Directors.

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.”


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Advanced Heat Treat Corp. In the way of background we can say that Advanced is far and away the largest provider of Ion Nitriding services in North America. January 26, 2017.

“Advanced Heat Treat Corp. is pleased to announce the promotion of Adam Dehl and Adam Kane to Operations Management leadership roles. Adam Dehl joined the company in 1997 as Heat Treat Technician. In 2006, he transferred to the Waterloo Burton facility as a supervisor. He most recently held the position of Assistant Operations Manager. Adam Kane joined in the company in 2002 and quickly rose into Operator and Technician roles. He most recently served as Furnace Operations Specialist. “Both gentlemen have been a key part of our success and I am thrilled to promote them to these important positions,” said Mikel Woods, Senior VP of AHT. Dehl and Kane bring a pronounced skill set of operations, customer interaction, communication and technical capabilities. We congratulate them and look forward to their leadership in pursuing our mission of Exceeding Customer Expectations with UltraGlowing Results.

“Advanced Heat Treat Corp. (AHT) is a recognized leader in providing heat treat services and superior metallurgical solutions to companies across the globe. Their UltraGlow® family of processes includes Plasma Ion Nitriding, Ferritic Nitrocyaniding (FNC), Gas Nitriding, UltraOx®, Through Hardening, Carburizing, Carbonitriding, Induction Hardening, and many more. Established in 1981, AHT is committed to exceeding customer expectations with “UltraGlowing” results. Treating your parts like they are their first born, welcoming visitors at any time, and the ‘AHT family’ feel—from the person who answers the phone to ‘Dr. Glow’, is what makes them truly unique. Advanced Heat Treat’s commitment to research and development, high quality standards and state-of-the-art equipment and technology have allowed them to grow into the successful company they are today.”

Rolls Royce Approval for Wallwork Vacuum Brazing at Bury

Wallwork Group, Bury, UK. “The scope of Rolls Royce approvals for the Bury (Manchester) site of metal thermal processing specialists, Wallwork Group has been extended to include the company’s new vacuum brazing facility. Wallwork already undertake aerospace work for Rolls Royce and it is hoped the new vacuum brazing unit will attract even more high value contracts. “Bury is the largest of our three UK sites and already has extensive approvals for metal heat treatment processes,” explained sales manager Howard Maher. “Vacuum brazing is a relatively new addition to the services at this location and is a natural addition to the other high vacuum processes that we operate. Achieving Rolls Royce approval so soon after commissioning the new vacuum brazing development laboratory and assembly area is another feather in our cap.” Bury is the lead aerospace processing site in the Wallwork group and already has extensive approvals for mainstream heat treatments such as case hardening, carburising, hardening and tempering, nitriding and many other common processes. In addition to further Rolls Royce approval, the company also carries approvals from other aerospace primes, such as BAe Systems, Airbus, Safran, Bombardier, Moog and many others, for specific heat treatment processes. Quality engineer Helen Ellis noted, “We are constantly working to extend the scope of our aerospace quality approvals to give
“Rockford Products/Rockford, Illinois. It would appear to be the end of the line for fastener manufacturer and captive heat treater Rockford Products at their main location on Harrison Avenue in Rockford, Illinois. The news item below gives you a few details but to this we can add a few heat treat related facts. The company has 4 cast link belt furnaces and some batch IQ capacity which makes for a reasonably large captive heat treat department. Given the fact the they are older furnaces (which we have heard) and that the company closed down rather quickly we would have to assume that the furnaces probably have little value on the used market.” August 24, 2016

Forgings Company Buys AFC-Holcroft Heat Treatment Line, Brings Production In-House.

“A European-based multi-national supplier of forgings for the automotive industry has brought their heat treatment process in-house by investing in an AFC-Holcroft automated non-atmosphere batch heat treatment line to be delivered to an American facility located in the Midwest. The customer worked with AFC-Holcroft to prove return on investment for buying their own equipment, which was recently installed and commissioned in the Midwest, USA. The equipment will be used to process raw forgings that will undergo normalizing, tempering, stress relieving and a quench and temper process. To secure the order, AFC-Holcroft needed to prove to the customer the return on investment. This was accomplished thru meetings in the U.S. and abroad, calculations of costs, visits to customer sites, analysis of production schedules, testing of parts, etc. “Our customer was very thorough in their consideration of new heat treatment equipment,” said Ron Graham, Sales Engineer for AFC-Holcroft. “They were currently outsourcing their heat treatment and needed to ensure that the new equipment met all of the requirements for their various processes. AFC-Holcroft’s

Rockford Products Heat Treat Equipment Auction. Going all the way back to August of last year one of our news items concerned fastener manufacturer Rockford Products closing their plant in Rockford, Illinois. We had assumed that all of the heat treating equipment had been sold or scrapped since then, however it would appear that it has all remained in place and rusting away and will now be auctioned off this February. January 25, 2017.

“NORTHBROOK -- The largest auction of fastener manufacturing equipment in 30 years is scheduled for Feb. 14-16 in Rockford with the sale of assets from Rockford Products. Founded in 1929, Rockford Products became one of the world’s leading manufacturers of fasteners and cold form components, including large diameter fasteners used on earth moving and construction equipment. The 500,000 square foot plant at one time employed 650 people. In 2007, private equity firm BlackEagle Partners LLC bought the company for $23.2 million in a bankruptcy auction. Former CEO Dave Richeson said “a significant part” of Rockford Products’ business was with heavy off-road equipment manufacturers. Soft sales in that sector led to a loan default that forced the company to seek a change in ownership or liquidation. After its restructuring efforts were unsuccessful, it closed down in September 2016.”


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SECO/Vacuum Technologies Appoints New VP-Sales
"Seco Vacuum Technologies, LLC is pleased to announce the appointment of Mr. William (Bill) Warwick to the position of Vice President – Sales. Bill will be responsible for sales of capital equipment, spare parts, and after-market services throughout North America. Mr. Warwick has extensive knowledge in vacuum technology, most recently holding the position of Product Manager at Schunk Carbon Technologies, LLC. He holds degrees in Business Management and Environmental Protection and has focused his career in sales, support and service of vacuum related products in the brazing, heat treating, and sintering industries. Mr. Warwick joins a talented team of technical specialists selling and supporting both standard and custom vacuum furnaces for this new company of the SECO/WARWICK Group.

About SECO/Vacuum Technologies. SECO/Vacuum Technologies LLC is a fully-owned entity of SECO/WARWICK Group in Europe. Through technological leadership, SVT offers unmatched vacuum furnace innovation and performance; and through its commitment to service, SVT provides its customers with the best support in the industry and the lowest cost of ownership.” January 24, 2017.

Fearless Predictions for 2017. We very much appreciate the well thought out predictions that our readers provided as to what they feel the year 2017 will bring to the heat treating industry. We offer these final two predictions from Horst Botsch of alloy provider Qual-Fab and Harald Roth of furnace builder KGO of Germany. January 24, 2017.

Horst Botsch, Inside Sales/Marketing Specialist, Qual-Fab Inc., Avon, Ohio. “People in the manufacturing and Heat Treat Industry are optimistic as to what 2017 will hold. Making a prediction for the year ahead will be difficult, due to the results of the recent presidential elections here in the US. Many people did not expect the present outcome, but could this outcome be what America needs to “Make America Great Again”? Qual Fab has manufactured many different stainless and high nickel alloy components for the past 25 years in virtually every industry imaginable. We are very upbeat about the future of the Heat Treat industry and the new opportunities that the future will bring.
In order to stay focused on the current market, we take experience from past events to improve our business into the future. To adhere to current industry demands, we use the LME-Nickel metal pricing from the metal commodities market on a daily basis, to keep us both progressive and relevant. As history has shown us, there are other economic events; like world wars, recessions, national industrial growth, inflation and tariffs that in the end can decide if prices for these metal commodities go up or down. As Qual Fab moves into the future, we anticipate that change is coming and we look forward to helping our customers with any upcoming projects that this new-year has to offer. We would like to wish everybody a prosperous New Year!!

Harald Roth, KGO, Germany.
"Gord, we are looking back onto a good year for KGO. We have delivered furnaces to our loyal established customers and some new customers. We would like to take the opportunity to thank all of them again for the pleasure of working with and for them. During the last year we have designed and build new interesting furnaces and developed new features for our successful nitriding technology. To mention here is one of the biggest nitriding pit furnace we have ever build. We might share some pictures with you later this year. Our nitriding technologies have undergone a steady development and improvement like our new APIN® technology. It provides a much better control of the nitriding potential. We do look forward into a busy year again. We have been going much more international in the last years. KGO does have representatives in China, USA, Mexico and South America now. This will improve our service to all our customers and we do know how important that is! We hope that we can share some interesting news this year also. We are currently expanding our product range again."

Monday Morning Briefing. Aaron Ackerman To Join Met-Pro. Effective February 1/2017 Aaron Ackerman will be joining manufacturers rep firm Met-Pro of Michigan. Met-Pro run by Mr. John Hansen is one of the oldest most established hear treat rep firms in the Michigan, Indiana and Ohio, USA area. That is the basic facts but we have to add our own comments to this. Over the years that Aaron has been with Wirco we at “The Monty” have worked with him quite closely and we would consider him to be one of the most energetic, enthusiastic and capable fellows we have ever worked with. Our history with John Hansen goes back even futher, almost 30 years now and we can’t say enough good things about John and his wonderful wife Carol. I confidentially predict that this partnership will be a long very sucessful one. John and Aaron each had these comments’

“John Hansen, is very pleased to announce that Aaron Ackerman will be joining Met-Pro on Feb 1, 2017. Aaron’s previous experience in the Alloy field will prove to be very beneficial to many of Met-Pro’s customers. He has been welcomed by all of Met-Pro’s existing Principals, Wirco, Super Systems, Custom Electric and South- Tek, all leaders in their respective Heat Treat areas.”

“Aaron Ackerman; I have been with Wirco Inc. for going on 13 years. I started as an Account Manager who was brought in to oversee the ever growing Furnace fan side of the business. My job was to grow this as well as to learn about all the items that we manufactured for the Heat Treat Industry. When Wirco Inc. purchased the assets of Alloy Engineering and Casting Co. in 2005, that brought on a whole new dynamic to theWirco Inc. portfolio of alloy supplies. Over the course of the next 9 years I travelled with our Reps all over the U.S., Canada, and Mexico visiting our customers to see how we could help them with their alloy requirements. In 2014, I was promoted to the Business Development Manager and worked even closer with each of our Representatives on customer reviews and finding new business opportunities. Starting February 1st, 2017 I will be transitioning my efforts to becoming a Sales Representative to one of the most respected Manufacturing Rep Firms for the Heat Treat Industry in the Michigan, parts of Indiana and
Ohio area. Mr. John Hansen of Met-Pro Inc., is looking forward to the assistance and this in no way means he is looking to slow down, John looks forward to many more years in the industry.”

Furnace builder Can Eng International of Niagara Falls, Canada recently landed an order for a mesh belt marquench line from a US auto parts supplier for one of their plants in Mexico. Chain manufacturer and captive heat treater Columbus McKinnon in Damascus, Virginia suffered a fire in their heat treat department this past Friday. While we don’t know the cause or the extent of the damage we will keep you updated. “Abingdon Fire Department confirmed that multiple agencies responded to a fire at the Columbus McKinnon Corporation building in Damascus, Virginia. According to the Damascus Fire Chief, the call came in shortly after 5:00 a.m. Friday morning. When they arrived they found visible fire on the roof and part of the interior of the building. The Abingdon, Glade Spring, and Meadowview fire departments responded with a total of four engines and two ladder trucks. One Damascus firefighter was injured at the scene and taken to Johnston Memorial for treatment. The extent of his injuries are not known at this time. Plant manager Lance Lacombe said they hope to be able to get into the plant in the next few hours to assess the damage. Roughly, 220 people are employed at Columbus McKinnon where they make chain hoists for cranes and other products.” Aerocraft Heat Treating Company. From Paramount, California we have this continuing news item. “A metal finishing facility in Paramount suspended some operations Thursday to comply with an administrative order aimed at curbing toxic chromium emissions, officials said. The company -- Aerocraft Heat Treating Co., Inc. at 15701 Minnesota Ave. -- “shut down all equipment with the potential to emit hexavalent chromium because South Coast Air Quality Management District air monitoring data” showed levels of the carcinogenic compound above a trigger threshold of 1.0 nanograms per cubic meter, according to a district statement. The average of three samples taken between Jan. 7 and 13 showed 1.67 nanograms of the compound. The company agreed to an administrative order, adopted by a district board on Dec. 16, that set the trigger threshold.”

Solar Atmospheres. We do get a kick of this press release. “In order to honor Mr. Trump, Solar Atmospheres is placing an order today, January 20, 2017, for a large horizontal loading 10 bar vacuum furnace with advanced cooling technology, built by our sister company, Solar Manufacturing, Inc. The furnace will have a 6-foot diameter 6-foot deep graphite and CFC hot-zone and will be utilized for the heat treatment of gas turbine blades for the power generation industry at our flagship plant, Souderton, PA. This shows the confidence we have in improved business conditions going forward and not looking backward. This investment and installation will approach $2,000,000.” - William R. Jones, CEO, FASM. For additional information about Solar Atmospheres, visit www.solaratm.com, or call 1-855-WE-HEAT-IT.”
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WWW.HOTFACEMECHANICS.COM
Vakuum Hökezelő/Codere Press Release. “We at Codere would like to inform your readers of a recent successful pre-reception, which took place at our facility in Switzerland with a leading local commercial heat treater Vakuum Hökezelő Kft based in Hungary. You can see in the photo below Mr. Gábor Szabo, Mr. Zoltán Kummer, Mr. László Fabian, Mr. Zsolt Söteth and David Howard from the Codere Sales department. The size of this installation is Ø 700/1000 mm with gross weight capacity of 500 kg and they have much interest in this line from various industries. Vakuum were drawn to Codere’s modular system (Possibility to meet future production by purchasing additional modules & new processes) and flexibility of adapting cycle parameters in the most efficient manner. Vakuum Kft have a broad range of processes available for vacuum and protective atmosphere treatment. Further information can be found on www.vakuum.hu For more information on our product range can be found in www.codere.ch” January 23, 2017.

SECO/WARWICK CaseMaster Press Release. “In 2016, SECO/WARWICK’s CaseMaster Evolution was the preferred heat processing technology of vacuum case hardening for the most challenging industries, such as automotive, aerospace, machinery, wind energy, transmission and commercial heat treat facilities. Carburizing is one of the most common heat treating practices for surface hardening functional components. SECO/WARWICK vacuum technology offers more efficient and improved carburizing. Due to its reliability, their systems attract worldwide manufacturers, especially those of automotive parts, who are facing multiple challenges as the today’s auto industry is going through a dramatic change. There are more competitors, demand for mobility is rising, and the vehicles of the future need to be built from high-quality components to be able to deliver safe and sustainable experiences. With dozens CMe furnaces installed, SECO/WARWICK is currently at the forefront of international vacuum heat treating market. “We are pleased with CaseMaster Evolution gaining more and more recognition among customers who noticed the potential of this solution and excellent application possibilities,” said Maciej Korecki, Vice President, Business Segment Vacuum at SECO/WARWICK “CaseMaster Evolution is a flagship product in SECO/WARWICK’s portfolio due to its quality, performance, reliability and high precision of repeatable results. It is a new generation of vacuum furnaces for carburizing with integral quenching tank, which addresses the needs of various industries; aviation, automotive or machine-building. All of these industries require advanced technologies that provide automation, process repeatability and flexibility and these expectations are met by CaseMaster Evolution,” added Maciej Korecki. One of such companies is a manufacturer of the complete range of high tensile ‘standard’ and ‘special’ fasteners in the main Asian markets. The company has a global manufacturing presence and sells its products also to United Kingdom, Malaysia and Germany. Interest in SECO/WARWICK’s CaseMaster Evolution is growing also in the American market - for instance, one of the most innovative companies specializing in automotive manufacturing improved their production by purchasing CaseMaster Evolution, multi-chamber vacuum furnace with integral sealed oil or gas quench. This advanced technology that uses high temperature and low pressure carburizing replaced conventional
sealed quench furnaces by achieving shorter cycle times and higher production rates, is a perfect solution for manufacturers of precision gears ensuring high-speed and economical process performance. Even though, it is mainly used by automotive industries, it also finds its application in the aerospace, machine-building, bearing and commercial heat treating industry. For example, by a Polish longtime manufacturer of drilling tools and equipment for the oil and gas exploration industry, geological, hydrogeological, geophysical, engineering drilling and coal mining sectors and by a comprehensive producer of gears and gear units that has been in automotive and machine building industry for a few decades. Today's customers expect the highest quality and reliability. CaseMaster Evolution furnaces equipped in PreNitLPC® by FineCarb® LPC responds to these needs by economic process performance and achieving high production rates with shorter cycle times when compared to controlled-atmosphere furnaces, hence, when it comes to carburizing, was the preferred 2016 heat processing technology among manufacturers of parts for the most demanding industries. We have this update for you. A portion of the plant was completely rebuilt just for this furnace with older equipment removed, walls moved, ceilings painted, floors redone a new cooling system installed and nitrogen tanks replaced. The end result you can see below along with the individuals responsible. From left to right you see Keith Heiden, General Manager, Angel Bonilla and Dave Kailborn, however we can’t leave it at that. Keith has been in the business for over 40 years, Angel is just shy of 40 years and Dave, well Dave is invaluable when it comes to installing heat treating equipment and keeping it running. Combined you are looking at almost 120 years of experience which is quite a feat.

Rochester Steel Treating, Rochester, NY, Vacuum Heat Treating Department. Commercial heat treater Rochester Steel Treating is one of the oldest in North America and it continues to grow as you can see in this “Monty” press release from late 2016; “Rochester Steel Treating a long established commercial heat treater in Rochester, NY recently ordered a brand new vacuum furnace to complement their other existing batch IQ and vacuum heat treating furnaces. RST is one of the largest commercial heat treaters in Upstate, NY”. We have this update for you. A portion of the plant was completely rebuilt just for this furnace with older equipment removed, walls moved, ceilings painted, floors redone a new cooling system installed and nitrogen tanks replaced. The end result you can see below along with the individuals responsible. From left to right you see Keith Heiden, General Manager, Angel Bonilla and Dave Kailborn, however we can’t leave it at that. Keith has been in the business for over 40 years, Angel is just shy of 40 years and Dave, well Dave is invaluable when it comes to installing heat treating equipment and keeping it running. Combined you are looking at almost 120 years of experience which is quite a feat.

January 20, 2016.

Thomas Kreuzaler, Brazil/2017 Predictions. One of the individuals who provided predictions about where the heat treating industry is going in 2017 is a fellow we have known for years, Mr. Thomas Kreuzaler. Thomas was with furnace builder SECO/WARWICK for many years mainly in Europe but also Brazil before becoming a manufacturers rep in Brazil just this past year. Thomas has this to say about the heat treating industry in Latin America.

“My company TECPROPRO represents and supports some of the leading Heat Treatment thermal technology companies in equipment, components and processes in Latin America. My partners are High-Tech providers, like FCT-SYSTEME, STANGE, VON ARDENNE, LNN HIGH THERM, DUNGS and others, who supply solutions to the metal processing, heat treating, thermal processing, technical ceramic and surface improvement departments and industries. TECPROPRO and my partners bet on improvement of the Latin American market in 2017. Though most of Latin America’s industries are concerned, that the new US president will stick close to his
homeland industry policy, my partners and I expect stability and slight improvement in most markets here. We think, that President Trump will be more pragmatic in his new duties and take rather a business man’s view on how the US and Latin America will grow mutually. Mexico as past growing market #1 in Latin America will continue with a decent growth and will require more furnaces, equipment and components. I guess, we will be positively surprised by Mexico end of 2017 again. Mexico is the 2nd largest economy in Latin America, but generates already 18% more GDP per head than Brazil. New rising stars are Colombia (4th), Chile (6th) and Peru (7th) – all with similar size, but growing continuously. Peru will be the rising star in 2017 in percentage growth. Colombia passed Venezuela (5th) in the ranking and the peace between the government and the FARC will trigger further and faster growth here.

Even for Venezuela a political change is expected, though they will certainly further drop in the ranking. After Argentina (3rd) and Brazil (1st) already changed their political direction from left-populism to more economy friendly governments, this is expected for Venezuela not necessarily in 2017, but certainly in the future. Both Argentina and Brazil are still in the process of painful healing (unemployment, factory closing, cash flow issues in many companies). But the declining steepness of the shrinking of the economy and the first steps in economic reforms especially in Brazil indicate, that 2017 will be not as worse as 2016 and for some companies already decent again. The cleaning-up processes by closing companies improves the competitiveness and the resiliency of the survivors. Most companies in Brazil like in Argentina adapted size and capacity already. Argentina seems to be already a step ahead in this process. A main driver for growth in South America is the cash income from mineral and agricultural resources exports. The prices went up recently and this will improve the investment climate and growth in those countries, who are rich in natural resources, immediately. The last forecast is 1,8% GDP growth in total for Latin America – but beside this growth, growing quality and technology requirements in all industries will make companies invest here in better parts, components and technologies to keep pace with the world standards. That is both a chance for the technological development of the local industries as for equipment exporting companies from the US, Europe and Asia. Commodities, simple parts and simple equipment certainly will be manufactured locally, but high-tech is requested. That is the reason the partners of TECPROPRO bet on the Latin American market in 2017.”

January 20, 2016.

Confined Space Safety. Paul Zettler of vacuum furnace company Alphatek, of Houston, Texas has long preached the well known hazards of confined spaces and how it applies to going down into an argon filled pit or furnace, or up into a bottom load furnace that is backfilled with Nitrogen, and becoming overcome by the lack of oxygen. There have been several deaths over the years in furnaces due to exactly this issue and a recent similar case in Florida prompted him to bring this up again. While this example does not include furnaces it is has some remarkable similarities.

"Remember the safety steps and equipment:
1. Ventilate or purge the area/vessel with breathable air source or fan!
2. Watchman outside within earshot, (Not to attempt Rescue, but must go and summon help!)
3. Oxygen Monitor/Alarm on person (additional fixed unit if available.)
4. Tether and Harness to Limit fall.
Key Largo, Florida. When a utility worker in Key Largo, Fla., noticed that a section of a paved street was not settling properly, he decided to remove a manhole cover and descend into the earth. Moments later on Monday morning, the 15-foot-deep hole went silent. Sensing the man was trapped, a fellow utility worker climbed into the drainage hole to rescue him. When he, too, stopped responding, a third worker entered the same hole. All three men died, overcome by poisonous fumes underground, the Monroe County Sheriff’s Office said in a statement. A Key Largo firefighter who made a desperate attempt to save the men also became unconscious within seconds. The firefighter, Leonardo Moreno, an eight-year veteran of the department, was flown to a hospital and was in critical condition Tuesday. The hole, just wide enough to fit a body, was filled with hydrogen sulfide and methane gas created from years of rotted vegetation, the Miami Herald reported. None of the four men wore masks or carried the air packs that could have likely saved their lives. Moreno descended into the hole without his air tank because he could not fit through the hole with it, according to Monroe County Sheriff Rick Ramsay. January 19, 2016.

“A man was hospitalized Monday night after the car he was driving slammed into a business on the northwest side, causing it to partially collapse. The unidentified man, described as in his late teens, was able to climb out of the Toyota Prius with assistance from firefighters but was transported to Methodist Hospital in critical condition, according to Rita Reith of the Indianapolis Fire Department. The accident occurred shortly after 7 p.m. at Bodycote Thermal Processing, 500 W. 21st St. Witnesses said the Prius was traveling north on Martin Luther King Jr. Street at a high rate of speed and disregarded a stop light before striking the one-story building. Nine employees were inside the business at the time but were evacuated without injury. Reith said the car came to a stop in the front office and conference room area of the business. Eight fire department units were on the scene, as well as IMPD officers, who are investigating the crash.”

Idiot Runs Into Bodycote, Indianapolis. I have always thought it must be tough to be a General Manager or a CEO as life seems to have a habit of surprising you. Bodycote is the world’s largest commercial heat treater and very competent but how on earth do you plan for some dummy driving into the side of your building? January 18, 2016.

Newest Advertiser, Dowa Thermotech/Hightemp Furnaces. We welcome our newest advertiser, furnace builder Dowa Thermotech of Japan and their India group Hightemp Furnaces. Dowa is one of the largest new furnace builders in Japan and has a strong presence around the world including in the USA. Their Indian group Hightemp Furnaces is in turn the largest furnace builder in the country. January 18, 2016.

Hubbard-Hall Goes Coast To Coast With Heat Treat Salts & Service. “Hubbard-Hall recently announced the expansion of their Heat Treat Salts product line and services throughout the United States. With 75 years’ experience in producing and supplying rubber curers and heat treaters alike on the North American East Coast, they found themselves in a perfect position to meet the recent increased market demand. “As a result of a consolidation of suppliers over the years, customers have been seeking alternative sources that can focus on producing a high-quality product with reliable delivery and responsiveness to their needs,” director of sales, Scott Papst says. “We have aligned our resources to meet this need.” Hubbard-Hall manufacture their own line of heat treat salts on-site at their Connecticut and South Carolina plants. The company’s heat treating salts are widely used for hardening, annealing, martempering, tempering, and isothermal quenching. For more information on their heat treat
A Friedberg Company, Brazil Selling Cast Link Furnace Line. A Friedberg is a German manufacturer of fasteners with plants around the world including one in Sao Paulo, Brazil which does heat treating in house. For reasons unknown to us the company has an 8 year old cast link furnace line available which they have been trying to sell for over a year now. It is electrically heated, rated for 2200 pounds/hour and is a complete line in that it includes loader, high heat furnace, quench, temper all everything else required. It was manufactured by a company by the name of REX (unknown to us) 8 years ago and probably cost well over $2 million USD. While they vendors seem like nice enough people they have a very distorted idea about the value. Over the past year they have come down from an original asking price of $1.35 million USD to just under $1 million USD. There are several catches to this asking price namely that it is a cast link belt line which has fallen out of favor over the years, it is electrically heated which certainly in the North American market is the kiss of death and it is still installed meaning heavy removal costs. While we wish the vendors the best of luck we feel strongly that the most this furnace will sell for is half of the current asking price. January 17, 2016.

Andy Muto Joins Paulo Products. We will add to this news item that the American Brazing division of Paulo Products is one of the largest vacuum heat treaters in North America with somewhere over 30 systems. January 17, 2016.

"Paulo is proud to announce the promotion of Andy Muto from Area Manager to Operations Leader for our Cleveland Division. Andy started as Area Manager in 2014 where he was responsible for the Hydrogen Belt Brazing and Braze Preparation areas. In his new role Andy will report to Tom Buckeye, Operations Manager of Cleveland. Andy has been interested in operations from the start, earning a BSBA with an Operations Management focus from The Ohio State University in 2010. Following graduation, he worked his way up the ranks of an international logistics company from package handling to dock manager. Following a move to another logistics company in an operations role, Andy joined Paulo with increasing responsibilities and opportunity for growth. Andy has excelled in the brazing department while managing a special brazing project. He was responsible for taking the program from prototype development to automated production. "Although my tenure
with Paulo has not been long, I’ve been presented with many challenges and opportunities. The culture at Paulo enables our customer’s and personal successes. This is apparent across all levels of the organization. This has allowed me to learn and develop professionally. With this new role, I’m eager to begin this new opportunity.”

Bob Muto, Plant Manager, is excited to see the next generation – including his son Andy – take on more responsibility. “Andy has a hands on approach to managing. He wants to be able to do the work himself and really understand processing characteristics. This makes his management believable and often leads to process improvement. Andy has a strong ability to bring people together as a team – encouraging excitement and engaging the team in their work. I look forward to the improvements Andy will bring for our customers and the Cleveland team.” Ben Crawford, Vice President Operations, commented “Andy’s advancement demonstrates Paulo’s commitment to growing the next generation and future leaders of our business. Andy has excelled in past leadership positions and we look forward seeing his continued contributions.”

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 leading Monday Morning Briefing. We are going to start out with “people” news today and first up is Mr. Tony Schaut, General Manager of Bodycote in Rochester, NY. No sorry we have to change that a bit, Tony is indeed General Manager of the Rochester location but he is now also Senior General Manager of Bodycote’s newest location in Syracuse, NY. If you recall very recently we announced how Syracuse Heat Treating had been acquired by Bodycote and that Dave Stopera (formerly of Steel Treaters also in NY) was the General Manager-dead on the money but now Tony is Senior General Manager. In Germany we see that Roger Liedtke who was technical director at commercial heat treater, Reese Bochum parted ways with the company at the beginning of 2017. Reese is a big, big operation founded in 1948 with four plants in Germany, over 240 employees and over 170 furnaces and has the distinction of having the largest pit carburizing furnace in the world that we know of. So we have looked at the US and Germany how about Canada next? Ryan Tierney who started off as a metallurgist at bearing company FAG in Stratford, Canada over 30 years ago is now back at the company after stints at other companies. Ryan just started as “Director” of the FAG, Stratford campus. This includes two locations, one Aerospace and the other automotive and both have very large, very impressive in house heat treating departments. Ryan is a good friend of ours and over the years he has worked at other companies such as Stackpole, an automotive parts supplier who was the leader in vacuum carburizing in the auto industry.

Continuing on in people news we mention an individual who we have taken a very strong dislike to, Sean Chen who is again organizing a heat treating exposition in China (we are not even going to mention the name of it for fear of giving him some free advertising). On any given day we receive anywhere up to 6 e-mails from him about the show and repeated requests to stop get nowhere. We were copied on a reply from a furnace builder in Austria who threatened to take legal action to have Sean’s e-mail stop, the upshot was that two hours later he received another invite. Sean Chen is a sleazball and his e-mails should be blocked.

A few months back IMT Group in Canada sold off their Nitrex Metal Technologies division in Burlington, Ontario, Canada to Bodycote. Looks like the company is selling everything off including their Ingersoll Axle division which does some in house heart treating. “CAMBRIDGE, ON--The Canadian-born and raised IMT Group--better known as Ingersoll--has sold its light-, medium-, and heavy-duty axle business to the Dexter Axle Company of Indiana. Dexter describes itself as the “global leader in trailer running gear and chassis assemblies.” The IMT divisions to be acquired by Dexter include Ingersoll Axles division of IMT Partnership in Ingersoll, ON, and Indianapolis, IN, and the light-duty Axles division of IMT Standen’s Limited Partnership in Calgary, AB.”

Rubig Press Release. Furnace builder Rubig in Austria has this to tell us. “It is remarkable how time flies: It is now 25 years since RÜBIG Engineering built its first own plasma nitriding furnace. This system was the cornerstone for an impressive company history and for the path
In the front, from left to right: Thomas Müller (COO RÜBIG Engineering), Markus Saxinger (plant fitter, 19 years at RÜBIG)

In the UK Vacuum Furnace Services is bragging about how they have received their first major contract with Rolls Royce at their Barnoldswick, UK facility. It’s a major step for VFS one of a very few companies in the UK that specializes in the vacuum heat treating industry. And to round things out we have these predictions for the the coming year from Dr. Klaus Lösere Senior Vice President Heat Treatment, ALD Vacuum Technologies GmbH, Hanau, Germany.

“Predictions for 2017; For ALD an eventful year 2016 has just passed, with changes on both sides of the Atlantic. The move and expansion of our headquarters in Germany to a new location and the reorganization of ALD Vacuum Systems to a fully owned subsidiary in U.S. had been important events. What about 2017? Let me give you my personal thoughts about what we can expect regarding vacuum heat treatment with the main focus on Europe. Looking to batch-type vacuum furnaces, this type of furnace had not seen revolutionary process and design changes in the recent past besides the trend for standardization. However I see a solid but very competitive business in 2017 for that furnace technology at least with respect to the aerospace industry as the order books for big players like Boeing and Airbus are full. The request for modular multi-chamber vacuum systems will stay high as more and more heat treaters decide for vacuum systems in case of new investments or replacements. However as the majority of these furnaces are being used in the automotive industry they are subjected to the future development of this industry. The future trend to electric drives systems will for sure reduce the complexity of transmissions to much simpler systems with fewer gears to heat treat. Although this electrification might take much more time than forecasted by the politics, it will influence future investment decisions in large furnace systems and require more flexible solutions. A major trend continuing into 2017 is the request for “small batch” processing heat treat units with the focus on “One-Piece-Flow (OPF)” production philosophies. Starting a couple of years ago after an official request from one of our automotive customers, several systems were delivered into the serial-production focused but not limited to automotive applications. Although this new and “fashionable” technology will not substitute large batch production in all cases, it is considered by the market to be a kind of game-changer as...
it allows to consequently continuing the move to total heat treat integration. Hopefully this development will accelerate the steel development to micro-alloyed steels which allow carburizing at high temperature without grain coarsening. Although almost all steel suppliers in the meantime have corresponding steel qualities in their brochures, the market availability for this material is still limited.

Developments in 2017 with respect to OPF-heat treat technology will focus on process optimization to gather all advantages of single-layer loading not only during heating or thermochemical treatment, but also during the quenching process. Reduction of distortion and the corresponding cost savings for hard-machining are still a major argument to look into that technology in future. Interestingly OPF-heat treat technology is moving side by side with one of today's primary industrial trends named "Industry of Things" or "Industrie 4.0", how we call it in Europe. As an engineering company mainly focused on heat treat process and product development, this means a further challenge. Customers not any longer ask for only furnace equipment but specify a fully automated production unit including all peripheral systems for a complete automation. Driven by the dispersal of LPC-heat treating units into the automotive industry, I see increasing need for commercial heat treaters to invest into this technology as the automotive industry will need back-up capacity for fluctuating production. While the commercial heat treaters are familiar using vacuum technologies for hardening purposes, we saw some reluctance with respect to low pressure carburizing technologies in past. However state of the art process simulation for LPC and the chance to combine this process with either gas-/ or oilquench technology will increase the attractiveness of that technology also for commercial heat treaters. Whether these predictions will prove true or not, only time will tell us. However we at ALD are expecting another exciting new year." January 16, 2016.

SECO/Vacuum Technologies LLC. Introducing SECO/Vacuum Technologies, The New North American Vacuum Furnace Company. SECO/WARWICK is proud to announce the creation of SECO/Vacuum Technologies LLC (SVT), a new company designed to provide standard and custom vacuum furnaces and related professional services to the North America market. Our new company will deliver the best quality, service and support to our American customers. With nearly 400 vacuum furnaces installed in North America alone, SECO/WARWICK is already a well-established vacuum furnace brand working tirelessly for commercial and captive heat treaters every day. Through the creation of a company dedicated to the unique requirements of our North American customers, SECO/Vacuum Technologies (SVT) will improve delivery of the world’s best technology and configure it for seamless compatibility to American standard components and controls. Commented SVT’s managing director, Piotr Zawistowski, “SECO/Vacuum Technologies is positioned to deliver improved products and services to established customers and new companies as well, by adapting some of SECO/WARWICK’s core products and capabilities for better compatibility with North American expectations. In addition to providing the world’s best technology, our key to this strategy will be to compete aggressively on both price and delivery. For example, our Value Incentive Program, or VIP for short, is a platform that offers several standard Vector furnace models configured for fast delivery to USA customers.” Specific Vector models in the most popular sizes and quench pressures will be available through VIP program. About SECO/Vacuum Technologies; SECO/Vacuum Technologies LLC is a fully-owned entity of SECO/WARWICK Group in Europe. Through technological leadership, SVT offers unmatched vacuum furnace innovation and performance; and through its commitment to service, SVT provides its customers with the best support in the industry and the lowest cost of ownership. January 16, 2016.

GKN Driveline/North Carolina. This press release deserves a mention as GKN does heat treating at most of their locations, heat treating which runs the gauntlet from sintering to hardening to carburizing generally in continuous furnaces. Part of this future investment which is mentioned will be slated for GKN’s heat treating departments. January 13, 2016.

“Raleigh, NC – A company that designs and builds automotive drive trains plans to expand four North Carolina plants, adding 302 jobs and investing at least $179 million over the next five years, officials said Tuesday. GKN Driveline will add 159 people total at its facilities in Sanford, Mebane and Timberlake and 143 over four years at its Maiden plant. “North Carolina is an important part of our strategy, with strategically located fa-
The seminar include:
Vacuum and atmosphere furnace maintenance best practices
Optimizing operations with predictive maintenance
Achieving and maintaining Aerospace compliance

Ipsen has been providing training to the heat treatment industry for 30+ years, both on-site at Ipsen U and at customers' facilities. This local seminar carries on the tradition of these trainings, teaching you best practices for regaining control of your equipment and offering expert insight into specific issues you might be experiencing on a daily basis. The seminar is $60 per registration, including meals and handouts. Additional locations will also be available soon. Learn more and register now at www.Ipse-nUSA.com/Seminar.
chain management outsourcing service, capital equipment used on their production lines, and manufactured components used to assemble their products. Headquartered in Cleveland, Ohio, ParkOhio operates 45 manufacturing sites and 54 supply chain logistics facilities, through three reportable segments: Supply Technologies, Assembly Components and Engineered Products.”

Fearless Predictions for 2017
Our response from readers about what 2017 will bring to the industry certainly was tremendous to say the least, quite frankly we were overwhelmed with the number of predictions—here are a few more from India, and the US. January 12, 2016.

Gopal Mahadevan, President
Hightemp Furnaces, India.
1. Heat treating business does not follow the pattern as seen in the USA or Europe where there are distinct lines between furnace builders and those in the business of heat treating.
2. Captive heat treaters still form a large part of the HT business in India even though there appears that there is a huge shift to outsource HT.
3. The automotive industry in India produced 23.96 million vehicles which includes all type of transportation in FY 2015-16 and exported US $ 10.8 Billion in components in 2015-16.
4. India has sufficient alloy making, forging and machining capability within the country however, there is a mismatch concerning HT services available in India.
5. Cost of HT services will remain an important factor for 2017.
6. Hightemp is the largest recognised commercial heat treater in India today with four HT plants currently operating and expects to commission two new plants in the year 2017/18.
7. Hightemp being a part of Dowa Thermotech of Japan is continuously innovating with new designs of high productivity HT furnaces to meet customer expectation of quality and cost for HT services.

Josh Harvey, CF Thermal, SC, USA. “In most areas of the US, skilled/experienced engineers, material scientists and maintenance technicians have had job opportunities in the last few years. Likely most were lateral or small wage hike positions. Many have remained in jobs where staff levels dropped and the work load fell on them. I see a lot of dedicated, talented people with responsibilities that exceed what any one person can handle properly. This leads to a host of problems within factories in a JIT world. The end of predictive and preventative maintenance on self destructing equipment. I would predict that high wage incentives will be common as manufacturing volume increases, allowing job change decisions and even relocation, to be a lot easier. I’m hopeful that federal policies for reducing excessive regulations on businesses will equal better earnings and growth for owners and employees. The coming incentives for repatriation of offshore capital and lowering of taxes for corporations will be another major growth factor. Strong currency values in North America may dampen growth. But the games developing countries have with valuation, subsidies and trade partnerships may become less fun to play.”

Marty Benegalia, President, Southern Thermal Systems, Texas, USA. “Ah yes – 2016 - The year of uncertainty, change, and selective economic slow downs have come to an end. The industries in our area generally break down into the following: Aerospace/Defense, Medical & New Technologies, Consumer Goods and Commercial Heat Treat. The Aerospace/Defense segments will continue to show activity – new engines and aircraft are being developed and perhaps more mergers/acquisitions are out there. The promise of increased or renewed Defense spending will certainly be welcome also. The OIL & GAS/Power Generation segment of our industry could turn out to be the sleeping giant – again with the new team in Washington DC, the potential for increased domestic drilling and production activity should be expected and very well received. A slight uptick is already being seen in this market. Like the past Oilfield slumps, there have been numerous mergers/acquisitions, and plant closings. We should see new technologies and new startup companies. The big guys will also benefit from their acquisitions and consolidations that resulted from the downturn. Future Medical research and products will find us new opportunities. Our society is aging and the need for new medical devices will continue to grow. Who knows what the 3D printing industry might produce for us in the coming years and resulting in more needs for heat treating these products. Both political parties promised INFRASTRUCTURE spending so I expect to see these types of companies benefitting from the projects that can hit the road (literally) quickly – roads, bridges, utilities. All of these projects will affect our industry in some manner. Our Consumer goods production is still a steady market with goods such as golf clubs, off-road sport vehicles, weapons, and hand tools. Our Commercial Heat Treaters have had such a steep challenge now for almost two years,
but they have remained resilient and even during tough times they have continued to improve and enhance their capabilities. Predictions – I am expecting an ever diversifying economy and a resurgence in some of the segments that were slumping (energy and commercial heat treat). Always optimistic, our region still has a bit of the wild west in it, and from the oilfield days of Wildcatting, our companies in the Southwest still maintain a “Can Do” spirit and they usually do come through. It’s nice when predictions come true, so let’s see.”

Do Captives Make Good Commercial Heat Treaters?

Selma Precision Technologies. We have covered in detail the story of SONA BLW Precision Forge Inc., in Selma, NC but we will mention the highlights. SONA was an auto parts maker with a large captive heat treat which unexpectedly closed their doors in August of last year with the plant and equipment subsequently purchased by another company who renamed it Selma Precision Technologies. Just last week we announced that the new owners would be reopening the heat treating department to operate as a commercial heat treater which begged the question; do captive heat treaters make good commercial heat treaters? We will give you two examples that we can think of, the first being Gleason Works in Rochester, NY who build a wide variety of machines for the gear industry including Gleason press quenches. As part of their manufacturing process they have a reasonably large in house heat treating department which also operates as a commercial heat treater. The commercial aspect was started a few years back and is an unqualified success for some interesting reasons. Because Gleason makes press quenching systems both for their own use and for outside customers they have one of the most complete sets of press quench dies in existence putting them in a very unique position. So in spite of the fact that Gleason operates in a high cost region (NY) they have very little competition when it comes to knowledge of the process and equipment and have consistently worked with a few very loyal customers around the country on specialized heat treating from which both Gleason and their customers have profited. Kind of a coincidence that our second example which was a dismal failure was also in NY State, Magna Powertrain of Syracuse, NY. While the plant relocated to Mexico they were at one point in time one of the largest captive heat treats in the US with 13 or 14 large pushers. Whoever decided that running low end product (with low margins) in a high cost auto parts plant, in a high cost region in large pusher furnaces made sense we don’t know but as it turned out the more product they ran the more money they lost and the experiment last just a couple of years as we remember it. So let's look at Selma. Their furnaces consist of 4 batch IQ's which are the choice of every commercial heat treater because of their flexibility, they are in a low cost area with a non union shop and the US Southeast while it might not have an underabundance of heat treating capacity they certainly don't have a surplus either. With the right person in charge and a very close eye on costs the company might make a go of it. January 11, 2016.

New Website

After months of work and many trials and tribulations we present to you the “new and improved” www.themonty.com and the new and improved monthly newsletter “The Monty”. While there are still some bugs to be ironed out we are working on a search function, a calendar of upcoming heat treating events and several other ideas. We would like to bring to your attention our “slide show” on the home page which includes photos of some of the best known people in the industry along with some very impressive furnace installations. These photos will be changed regularly and we urge all of our readers to send us your interesting pictures - we can guarantee that a large portion of the worldwide heat treating industry is going to take note. January 11, 2016.


"The UK's Contract Heat Treatment Association will again be partnering the Surface Engineering Association and Wolfson Heat Treatment Centre in co-sponsoring the second “Surface
**Paulo Products**

It would appear that one of the largest commercial heat treaters in the USA is doing lots of good stuff including a large addition to their facility in Nashville, some new batch IQ and vacuum furnaces and the promotion of a good man, Tom Gundic. **January 10, 2016.**

"Paulo is pleased to announce the promotion of Tom Gundic to Operations Manager of our **Nashville Division**, effective January 9th. Tom’s current role is Production Control Manager at our **Cleveland Division**, a position he has held since 2011. Tom has been with Paulo since 2005, starting as a shipping clerk and quickly advancing into the vacuum department as Shift Supervisor in 2006. In the fall of 2009 Tom advanced to Production Scheduler, a position he held for three-years until being promoted to Production Control Manager. Through those experiences Tom demonstrated his capability to support and lead productive teams. While at Cleveland he has amassed knowledge of brazing and vacuum heat treating with stringent aerospace specifications. "My 12 years at Paulo Cleveland have been amazing. I have learned much from many great people and mentors. Their guidance rounded my experiences while developing me into the manager that I am today. Those collection of experiences have prepared me for this new growth in my career. I'm saddened to leave but extremely excited to join the Nashville team. It's an exciting time to join the Nashville Division that is currently undergoing plant expansion and new equipment. The opportunity to apply my skills and assist with the on-going transition and helping us develop the team is a terrific opportunity."Tom is joining the Nashville Division which has recently undergone a 30,000 sqft expansion to increase vacuum and integral quench heat treating capacity. His experience with the rigorous Nadcap and AS9100 quality systems at Cleveland will be beneficial as the Nashville Division continues its growth. Rick Lowdermilk, Plant Manager commented, "We are excited to have Tom join the Nashville team. He will bring a new skill set and experience coming from Cleveland. Tom will support growth in our vacuum processing capability. We look forward to Tom's leadership in growing the business and working together for the future of Paulo". Ben Crawford, Vice President Operations added, "Tom's arrival to Nashville is timely. He brings unique capabilities to support Paulo's strategic direction to our commitment in providing unparalleled services and customer support". 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."

**PhoenixTM**

"PhoenixTM have recently received an order from a major Mexican auto parts supplier for a ‘Hot Box’ system to measure the temperature profile of alloy steel blanks being preheated prior to the hot stamping process. The blanks, which are finally formed into structural body parts, travel through a continuous roller hearth furnace at
temperatures approaching 950°C / 1740°F prior to the hot stamping operation. Clearance in the roller hearth furnace is limited, so the ‘hot box’ thermal barrier needed to be low profile whilst able to resist high temperature for a specified processing time. The data logger required a fast sampling interval with RF telemetry transmission of the data so the temperature profile throughout the process could be seen in real time. The main benefit for the customer was the ability to replace the ‘long trailing thermocouple’ system, which required a complex setup, with a system that could be easily loaded onto the furnace with normal production following behind. This meant that multiple profiles could be quickly taken when setting up a new product. To see a video of the TS02-130-1 ‘hot box’ system in action go to: https://youtu.be/qVHiP2D5H98.”

We continue with several more predictions about the heat treating industry in 2017 including one from Chad Wright of alloy supplier Wirco about upcoming nickel prices, Bill Jones of Solar Atmospheres/Solar Manufacturing offers some thoughts on what Solar will be doing this year and John Hubbard ideas are always of interest. January 7, 2017.

Chad Wright, President, Wirco Inc. "Ni outlook for 2017, Ni is traded in US Dollars. As the dollar becomes more valuable, relative to other currencies, it can buy more Ni units. The Fed has promised to continue increasing interest rates which strengthens the dollar. This was the primary reason for Ni falling throughout 2015 and remaining relatively low for the past year. The adjusted 20 year average is $6.40 per lb. The dollar is trading at historical highs right now. These factors will push Ni lower, should this trend continue.

The fundamentals tell a much different story. There is a projected Ni shortage coming in 2017. This is due in large part to a decrease in the supply of incoming Ni ore used by China’s pig iron producers. They have felt the pinch from Indonesia’s ore export ban. The Philippines have been able to supplement China’s demand, but these mines are now under significant environmental pressures. The Philippine Prime Minister has vowed to crack down on these polluters. Demand for Ni is primarily driven by steel mills. China’s stainless steel market has been extraordinarily strong. General economic strength and increased demand from the US due to anticipated gains in our economy will increase the demand for stainless, and hence Ni. It is our belief that the supply shortages and demand increases will outweigh headwinds from a stronger dollar. We are prognosticating the average Ni value in 2017 to average nearly $5.60, a modest increase from today’s value. Larger increases could be seen if disruptions in supply escalate in size and scope”.

Bill Jones CEO, Solar Atmospheres. "It is always wise to look backward before looking forward. In spite of numerous challenges from government and customers, particularly the big players, our Solar Nation has grown considerably over the last five years with consolidated sales of $70 million and 265 employees, spread across the USA. We have made major investments for the future during 2016 by doubling our plant space in Fontana, California, adding additional plant space in Hermitage, Pa., continuing our startup operations in Greenville, South Carolina, and adding a startup company Vacuum Pump Services, (VPS), Hatfield, Pa.

In late 2016 we invested in two new high-end vacuum furnaces, one for our Souderton, Pa. plant, and one for our Hermitage plant, both dedicated to special medical and electronic instrument component HT; also in Hermitage we brought on line midyear our new very large 48’ long vacuum furnace dedicated to aircraft and special SS tubing for a marine application. For the new plant space in Fontana we have on order from Solar Manufacturing two new large vacuum furnaces dedicated to aerospace and defense work. These will be operational at the end of the first quarter this year. Looking again backward, sales for 2016 vs. 2015 were down nearly 6% on a consolidated basis. However, operating profits remain strong, supporting our investments. On looking ahead, thru 2017 we expect growth from our 2016 investments and great-
er growth for 2018. As Don Jordon, our Corporate VP of Metallurgy, has said, “the time to invest is when there is blood in the streets” (markets). We have done this with faith for growth in the future, 2017 and on”.

John Hubbard, Ex CEO of Bodycote. "Well Gord as you know predicting the future is a mugs game but I am willing to stick my neck out and predict what I think 2017 holds for commercial heat treaters in USA anyway. The economy of the USA appears to be set for a very good year but there are major clouds on the horizon that could spoil the outcome. With Trump and "company" we can expect that the log jam of the past two terms will be blown away. The removal of many government regulations and lower taxes would be welcome stimulants. However, the threat of isolationism could put a big drag on the economy. Exports could suffer from reciprocal tariffs and the abnormally strong dollar. If Trump’s promise to on-shore manufacturing the cost of many items will most likely soar due to higher manufacturing costs here in USA (fewer big savings at WalMart or Target). I have always been amazed at the protests when WalMart is building a new store in a rural location then on grand opening day the protesters run for carts to shop at WalMart abandoning the very local shops they fought to preserve. The NAFTA agreement, if blown up as promised, will create all kinds of headaches particularly for the automotive sector. For commercial heat treaters this dislocation promises to be mostly positive as only a couple of USA companies have facilities in Mexico and Canada too.

Several states have increased the minimum wage with more likely to follow. The protests for a livable wage is gaining more traction. This will put pressure on all wages resulting in increased costs and price inflation. I predict there will be more emphasis made on training of employees, providing career paths and more profit sharing based on performance. The retiring of baby boomers and more lucrative alternative careers is creating a huge talent hole which heat treaters are struggling to fill. Investing in automation and robotics could help this but heat treaters tend to be reluctant to make the up front investment required. I don’t see this changing. The above two people points are positives for commercial heat treaters as they are in general more flexible, creative and faster than integrated manufacturers at adapting to market conditions.

The pressures on integrated manufacturers opens up more opportunities for commercials to capitalize on their competitive advantage and cost savings if the work is outsourced. Heat treating equipment; I don’t see 2017 having any big shifts from present trends where buyers are seeking cleaner, more energy efficient, robust and affordable equipment. Control systems will continue to become more intelligent and predictive. Artificial Intelligence should continue to develop in the control area to offset the loss of "tribal knowledge". One technology that won’t be a big player in 2017 but is accelerating is electric vehicles, they are coming. Not as much heat treating in such vehicle compared to internal combustion. Overall, I believe this will be a very turbulent year in the USA and most of the world so all predictions are SWAGs without the capital S”.

Fearless Heat Treating Predictions for 2017

To date we have had a number of fascinating predictions about the heat treating industry for the new year from some of the most knowledgeable people in the industry. Predictions have ranged from pessimistic to very optimistic with a recurring theme being the new US President elect and what his effect will be on the worldwide economy. The two predictions below come from individuals who we have known for many years and who we have a high opinion of when it comes to knowledge of the heat treating industry, Mr. Bill Disler of AFC-Holcroft and Mr. Steve Thompson of Super Systems Inc. January 6, 2017.

Mr. Bill Disler, President & CEO of AFC-Holcroft, Wixom, Michigan, USA. "First, Happy New Year to everyone and best wishes for a successful 2017! 2016 was certainly interesting for USA politics and for AFC-Holcroft specifically and it has set the stage for more excitement in 2017. With the new President-Elect Trump promising major changes in trade and tax policies and other key markets such as oil & gas, mining, and construction equipment still trying to recover from several tough years, we are looking at 2017 as another tough one to predict. The strong US dollar and other key global regions, such as China, remaining weak, we are not expecting progress to be easy. Still, AFC-Holcroft is certainly entering 2017 with much more optimism than we did in 2016. Our strong project activity seems to signal a positive change is slowly starting. Our past experience shows that the furnace manufacturing business tends to lead commercial heat treat through economic trends by about a year. Hopefully what we are seeing will translate into more optimism for other heat treatment related businesses.

With respect to technology trends for
2017 and beyond, I believe that AFC-Holcroft has even more objectivity with wider ranges of product offerings available now that we are part of the Aichelin Group, the largest heat treatment equipment manufacturing group in the world. This wide view is critical to absorbing global market feedback that we think gives us a decent view of likely trends. Having said that and with no intention to contradict other perspectives, we actually see a significant trend with customers seeking alternatives to technologies such as Vacuum Carburizing and Gas Quench cells. Although these technologies, usually thought of as a set, remains very well suited to solve specific problems that atmosphere systems cannot, the general applications in areas where other repackaged conventional technology can be applied is losing interest in the market. Many customers, often the early ones to start using these technologies, have already shifted focuses and investments to alternative solutions. The driving factors appear to be the high cost of both acquisition and operation, combined with the difficulty to implement complex cells that are very material quality dependent around the world, especially in developing areas with the largest growth potentials. The concepts are great, just like one piece flow, but the real world tends to bite us a bit when we get too utopian in our planning.

Most of the large companies looking at heat treat technology for their future needs recognize that whatever they select must be able to support a Global Bill of Process for their parts. Vacuum/Gas Quench cells can provide benefits in some cases, but ease of global deployment is not one of them. Installing and supporting high tech vacuum cells in many parts of the world is very difficult and uptime and on time startups are difficult to manage. Getting repeatable material supply chains in these areas is also problematic and very expensive. In many cases the anticipated savings to offset the heat treat costs such as eliminating hard grinding have not been realized, hence opening the door again to other solutions that are more cost effective and easier to manage. We see increasing needs for new solutions as this trend expands in the marketplace. We also see hybrid heat treat systems that blend old and new technologies into new systems growing in the future. It does not mean that we will see the old “fire breathing dragons” back in the forefront, but current atmosphere furnace system look much different than in the past. In addition, the impression that vacuum and pressure vessels are safer than other technologies is likely to get more attention as well, especially with the recent catastrophic failure of a vacuum furnace and the resulting extensive damage it caused as a reminder of risks as noted last month in an article on The Monty. Flameless vestibules, sealed discharge areas, refined use of nonhazardous salt in quenches with total containment are all real and growing in popularity. The cost of these improvements to atmosphere systems still measure a fraction of the cost of moving to a full vacuum/gas quench solution and they are becoming easier to install and operate. In the end, ease of deployment and cost per part matters and as long time users realize that equal or acceptable quality can be achieved at 1/3 the cost, it raises eyebrows. Obviously we will hear various opinions on this topic. I see this becoming an active topic for 2017. Diverse views can be a healthy ingredient needed to spur new technologies for the future.

Ultimately my most certain prediction for 2017 is that changes are coming, in both policies than can affect all of our businesses and technology that can do the same. Everyone should be ready to react as quickly as possible to capture the opportunities.”

Mr. Steve Thompson, Super Systems Inc., Cincinnati, Ohio, USA.
"The Cubs won the World Series in 2006 so who knows what 2017 will bring? Based on the current political and economic climate we expect an increase in business in 2017, with a stronger demand domestically than internationally due to the stronger dollar. At this time all indications are pointing to a positive US economic climate based on the political situation in Washington, but it may be offset with the turndown predicted in the auto industry for 2017. Markets are strong and unemployment is down, indicating growth for 2017. The growth for exporting companies will be burdened by the strong dollar, but not enough to slow the demand for U.S. technology.

With unemployment being low, it is our experience that manufacturing companies will be competing for a cost-effective, competent work force – so manufacturing/heat treaters will be looking to do more with less. This is a trend that has been consistent over the years and we anticipate investments in technology that will result in less labor, less waste, and more information. We are excited about 2017 and look forward to helping the industry address the unique demands for process control, smart sensors, and automation."
Fearless Predictions for 2017
We continue with predictions for the heat treating industry in 2017 from some of the brightest and most experienced in our industry. January 5, 2017.

Dave Ederer, Owner, Stack Metalurgical, Portland, Oregon. “I believe that there is a good amount of investment that has been “held on the shelf. This released demand, the redoing of our infrastructure (favored by both parties and The Donald), military catch up spending, and returning overseas corporate cash will create a real stimulus to the economy. I also believe that the incoming cash will offset any inflation pressure so interest rates will continue to be at below normal rates. Finally I believe that The Donald has stimulated confidence after 8 very uncertain years. This will provide the desire for moving ahead. For Stack we are looking forward to another significant step in our growth. 2016 was a building year. One where we sacrificed this year to provide us the base for moving into a new realm. We look for good growth particularly after the significant increase we created in capacity and people.”

Geoffrey Somary, COO Ipsen Group - CEO Ipsen USA. “Dear Gord, you requested some perspectives for this coming year so here are some thoughts on 2017 focused on three topics: 1) People 2) Consolidation and 3) Innovation. In my view these three themes will impact our industry this year and I will say a few words about each considering this from both a North American and Global perspective.

People: for furnace manufacturers the employment market will continue to be tight driving many to find their own path toward training new team members from outside of the heat treatment market. Ipsen does this with our home-grown Ipsen Academy but there are indeed other ways to tackle this challenge.

Consolidation: the heat treatment furnace manufacturing segment remains highly fragmented and I believe we can expect an increased pace of market consolidation in the next two years.

Innovation: even greater part to part, batch to batch and furnace to furnace repeatability is needed while assuring the highest possible uptime and uniformity. PdMetrics from Ipsen is only the beginning of predictive maintenance and the Internet of Things. It will soon be possible for a company with multiple furnaces to have the best performing one teach the other furnaces how to do better. Innovation will make this possible. At Ipsen Group we have a robust view of 2017 – this comes from a strong backlog supported by $30+ million of bookings globally just in the month of December and a strong funnel of high-quality proposals. Happy New Year to our customers and all readers of The Monty!”

David Plester Vice President, PhoenixTM LLC., “Gord, Thanks for the opportunity to comment on 2017, and Happy New Year to all at The Monty! PhoenixTM, as a supplier of custom ‘Hot Box’ systems is still growing fast. In 2017 we predict maintaining this growth in all the developed markets even though some countries, such as Brazil, show some economic uncertainty. Because of the growth in heat treatment in the USA, we see this as being a significant opportunity for us and we have recently taken on extra sales staff to help service this market. Within the US heat treatment market we see furnace surveying in automotive and aerospace as being our biggest revenue generator and the recent launch of our new data logger with two way RF telemetry, will certainly help to drive sales in these sectors.

How the new Trump administration will affect the economy and the heat treatment business in Mexico and Canada is not clear, but we expect any major changes to have effect after 2017. So we will still be putting a lot of effort into these areas. In Far East markets the take up of AMS 2750 and CQI-9 has been slower than in the USA, but we see this accelerating in 2017, which means that our furnace survey offering, together with our oil quench proof ‘hot box’ system, will be driving growth for us. Finally in European markets we predict steady growth for PhoenixTM in heat treatment, with improvement in product quality being the main driver in the automotive industry. A possible exception to the ‘steady growth’ expectations in Europe is Romania, where growth in the automotive sector seems to be outpacing other European countries. Also we don’t expect ‘Brexit’ to initially cause any major upsets as negotiations will still be in the early
stages. What we can expect from ‘Brexit’ after 2017 is anybody’s guess!”

Marty Keylon, Keylon Thermal Consulting, California, USA. "All I can say is 2016 was Wow? It started out pretty strong and then wham!!! "What the hell is going on now" Was it the up coming election. Following the campaign trail? It just went down hill from there? I’m not sure if it was the uncertainty or was everyone glued to the TV waiting for the 2 remaining candidates to do something else crazy and forgot to order supplies or what? As I was out and visiting customers last year it was a mixed bag of slow but still some work to get us by. Or it’s dead out there and how are we keeping the lights on? There are a few shops still busy but they were even wondering why? It seemed to be the high tech markets didn’t seem to be hurting too bad. It was more of the commercial shops feeling the pinch. Oil Patch still down. Aerospace holding it’s own.

Looking to the future 2017. I have already seen a increase in activity and it’s only the 3rd? But, Competition is getting tougher and I’m having to go back to my vendors for better pricing. Maintenance items are a must have and that is something that never really goes down much. I think people will hold on and run what they have as long as it’s still getting the job done. I look to the experts to see why they think. The outlook for 2017 "and I quote” will have Better Growth with Higher Uncertainty. My customers are asking for better pricing, faster deliveries and longer terms. Not much has changed since I ran 2 commercial heat treating facilities? I think things will improve. Aerospace, Military and some heavy equipment on the commercial sectors will pick up. And you said I’ve been in heat treating almost 40 years, June 2017 it will be 42 years. I started at a commercial heat treater in June of 1975!”

Bodycote Acquisitions/USA, Germany.
The world’s largest commercial heat treater is certainly moving ahead full bore these days with these three acquisitions in the USA and Germany. January 5, 2017.

"Bodycote, the world’s largest thermal processing services provider, announced today that it has acquired three heat treatment businesses, Syracuse Heat Treating Corp., FHK GmbH and VHK GmbH. The businesses are located in Syracuse, New York, USA, Steinbach-Hallenberg, Germany and Schmerbach, Germany. All three are recognized for their high quality and service to the automotive and general industrial markets. Complementing the established operations and logistics network already in the regions, the addition of VHK and FHK expands Bodycote’s geographic reach in serving central Germany, and the Saxony region. The addition of Syracuse Heat Treating complements Bodycote’s operations in the Mid-Atlantic States region. Commenting on the acquisitions, Stephen Harris, Group Chief Executive, said: “We are delighted to be adding these high quality, well invested and profitable businesses to our network.”

About Bodycote: With more than 170 accredited facilities in 21 countries, Bodycote is the world’s largest provider of thermal processing services. Through heat treatment, metal joining, surface technology and Hot Isostatic Pressing (HIP), Bodycote improves the properties of metals and alloys, extending the life of vital components for a wide range of industries, including aerospace, defense, automotive, power generation, oil & gas, construction, medical and transportation. Customers in all of these industries have entrusted their products to Bodycote’s care for more than 30 years. For more information, visit www.bodycote.com For more information, please contact: Jody Turin – Group Marketing & Commercial Strategy Officer Email: jody.turin@bodycote.com

William R. (Rod) Coleman
"We are saddened to hear of the passing of another heat treating pioneer. William R. (Rod) Coleman passed away December 26th a few days after suffering a stroke at the age of 83. He established his first heat treating company, Coleman Metal Treating Lab, Inc. in Tulsa, Ok in 1963. After branching out and starting another heat treating company in Jacksonville, AR, he subsequently sold the Tulsa operation to Lindbergh, in 1972. He started another facility in Memphis, TN in 1989. The companies are still thriving today. He served as Vice Chairman and then Chairman of the southwest district of MTI in the early 80’s." January 5, 2017.

Fearless Heat Treating Predictions for 2017
We continue with our predictions from the world of heat treating and we mean the world. Today we have thoughts from Canada, Germany and the USA. January 4, 2017.

Brian Reid, Park Thermal, Georgetown, Ontario, Canada. "It’s funny you bring this subject up as my partner Jay Mistry and I have recently had long conversations relative to the economy-the Trump effect-and we re-
port that we feel that all sectors that we primarily deal with (Aerospace, Auto, Commercial, Tool and Die etc) are very active and strong and we see growth in all areas that affect products that Park Thermal services including new, pre-owned and chemical division (Salt, Quenching Oil, Spare Parts etc) so much so that we have just purchased an 88,000 sq. ft. building. This decision was made after gleaning information from our customer base, competitors and our “gut” feeling all after the Nashville convention. Additionally, we have added a number of P Eng. people to our Team. Bottom line-as you can see above we see 2017 as being very positive. To everyone at the Monty have a great 2017 and keep racking up those frequent flyer points”.

Natasha & Jörn Rohde, ROHDE Schutzgasöfen GmbH, Germany.
"For us 2016 has been a very good year and our prediction for 2017 is even better. We are very happy to announce that we already have orders until autumn 2017. While predictions are always difficult we are quite confident that this year will be very good. Our strategy has been to become more international by delivering more furnaces and salt recovery units outside the European Union, and we have achieved that goal. The requirements in the heat treatment market increase incessantly and never become any easier so it is important to constantly develop new processes besides building furnaces, which are linked to company networks. The automotive industry is especially strong on specifying new, new heat treatment requirements, which will lead to new processes and also investments into new furnaces. That's what we are expecting in the future, and our goal is to be able to handle these constantly changing requirements."

"Another goal we want to achieve in 2017 is to improve our operational processes in the manufacturing area and in the offices. As our new factory has been planned in order to improve all our operational processes, the manufacturing is supposed to be much more efficient and the manufacturing time is supposed to be shorter - although delivery times at the moment are longer, but that's due to the amount of orders we already have. So this year we will see the effects of the process improvements. As we have moved into our new facility in Hanau mid November 2016, we will only start to see the improvements in the course of this year. On one hand we want our customers to be happy with our products that are still exclusively made in Germany. But in order to have good products on the other hand, we need our team of employees. We want our employees to be motivated and this will be achieved due to our new working environment. For all of us the move into the new facility has been a new start and we are expecting a lot of positive developments in the future. So we are really looking forward to a successful year 2017."

John Oakes, Ebco, Engineering Sales Reps, NY, USA. "Some thoughts about the upcoming year in our industry. For me, 2016 ended with average activity and moderate growth, I expect similar momentum will continue for 2017, a steady conservative growth throughout the year. There are some indicators that 2017 may be going in the right direction. The US economy is predicted to see unemployment down, inflation up a bit, and manufacturing at its best in years. Although oil & gas has crept up a bit, it may remain stagnant, other industries such as aerospace, automo-

tive, arms, medical and construction should maintain or continue to improve. All in all, I am optimistic for 2017!"

Jeff McLaughlin, McLaughlin Services, Avilla, Indiana. "We are lined up for quite a year here at McLaughlin Services, LLC. Not only will we be celebrating our 10 year anniversary, we will be increasing our service offerings as well as our national footprint. Regarding our industry, we feel very good about what 2017 has in store."

SONA BLW Precision Forge Inc/ Selma, NC
When auto parts maker SONA closed last year it attracted a lot of attention because first it appeared to be a profitable company and the sudden closing caught everybody off guard, second it had a fairly large and very modern heat treat department and third the company had made the news a couple of years previously when they managed to burn down most of their heat treat which caused damage in the millions of dollars. Well the plant is coming back to life-kind of. The building and its contents have been bought and renamed Selma Precision Technologies and presumably they will continue making gears however and this is interesting there are plans in place that the heat treat department will operate partly or completely as a commercial heat treat which is rather interesting. With four batch IQ furnaces and presumably low overhead if it is managed competitently there is no reason why the company shouldn’t be successful at it. January 4, 2017
Fearless Predictions for 2017

To ring in the New Year a few predictions about the coming year are in order but fear not, these predictions are not coming from us but the real experts. Experts such as Ben Rassieur, President of US commercial heat treater Paulo Products, Jörn Rohde of furnace builder ROHDE Schutzgasoßen GmbH in Germany, Bill Disler CEO of furnace builder AFC-Holcroft in Wixom, Michigan and John Hubbard former CEO of Bodycote to name a few. These predictions will be appearing on the website over the course of the next week and if we have missed sending you an invitation to comment don’t be shy we are interested in what everybody has to say. January 3, 2017.

Ben Rassieur, Paulo Products, St. Louis, MO, USA. “Thoughts On 2017. Many are predicting a rebound in heat treating in the US in 2017. There have been some signs of recovery in the 4th Quarter of 2016, but I believe that there are headwinds that may make this recovery weak and/or short-lived. The US dollar is incredibly strong right now. Combined with the weak business climate abroad, imported parts are going to be very appealing. We have ridden a long wave of growth and record production in both the aerospace and automotive industries. It is likely that we will see a downturn or flat conditions in these areas during 2017. Oilfield goods, railroads, agriculture and other general industrial sectors have been hit hard over the last couple of years, largely due to low energy and commodity prices. But oil prices have rebounded 50% since the lows of 2016. (Other commodities are starting to do the same.) Since it will be a while before planned pipelines are completed, there may be an improvement in these sectors in 2017.

As far as technology is concerned, it looks like the development of additive manufacturing will accelerate. There will continue to be a trend toward heat treat processes that achieve desired properties with less distortion, cleaner parts and tighter control. With tight labor markets and the need to compete against lower-prices overseas, there will be greater emphasis on increasing productivity with automation and robotics. It is interesting that, despite the strong dollar, there is still a fair amount of movement in manufacturing to North America. I believe that this trend will continue through 2017. The wildcard will be what the Trump administration with both houses of Congress decides to do with taxes, tariffs, trade and regulation. President-elect Trump is very action-oriented. He could decide to emphasize tariffs and trade actions to protect US jobs. Or he could decide to reduce taxes and the burden of regulation to make our factories more competitive. My only prediction on this score is that in 2017 we will find out which way they will go”.

Mike Long, Vacuum & Atmosphere Services, West Bromsich, UK. “Personally, I have a positive outlook and see 2017 as a year of opportunities. The post-Brexit referendum devaluation of sterling means our manufacturing base is well placed to compete for business in export markets both within and beyond Europe. Economic competitiveness coupled with traditional British resilience and our flair for innovation, should mitigate many of the challenges we will inevitably face as we prepare to leave the European Union. Whilst it is true that mass production is no longer the mainstay of the UK economy, we have a well invested asset base and one of the most highly skilled and resourceful workforce in the world. Which make the UK the market of choice for investment in advanced engineering as we see in Aerospace, Motor Sport and Medical Industries. The second half of 2016 brought unparalleled success for VAS and as we enter 2017 we have a full order book and project start dates extending into quarter two. We have expanded our team, with key recruitment to service the increased workload and we are seeking further additions to our Service team.

In preparation for 2017 we also invested heavily into training for our Service Technicians, including an advanced training program at Ipsen’s Kleve facility. In 2016, we sold in excess of €3,500,000 of new Ipsen equipment into the UK and Ireland. These furnaces went into some blue chip companies in the Aerospace, Automotive, Medical, Motor Sport and Sub Contract industries. The product range included sealed quench, vacuum and a low pressure carburising furnaces. In 2017, I anticipate that we will see more growth and investment in the Medical and Aerospace industries, with ‘niche’ companies investing in vacuum carburising furnaces, a new technology to these companies and not extensively deployed in the UK. I also anticipate that subcontract heat treaters will be investing substantially. Subject to Sterling staying at its current level, it makes our automotive industry competitive in Europe, which will hopefully bring investment. Ireland is a rapidly growing and attractive market for VAS for both new installations and service. Favourable corporate tax rates make Ireland an attractive market for investment and as a consequence enquiry levels are at their highest since before the 2008 financial crisis. In a post-Brexit world a strong presence in Ireland will help VAS to deal with any
negative impacts in the UK. 2016 saw a substantial increase in our service and refurbishment business and we forecast continued growth for 2017. We have an ambition to increase our market share to 10% in the service and refurbishment market, through continued service excellence and this too will require additional resource. Taking everything into account, I believe that 2017 will be an interesting and challenging year but a year that will see us embrace change, adapt and prosper. As the Ipsen logo says ‘Hard work wins’. Wishing you all a very happy and prosperous New Year!"

Bill Gornicki, ALD Vacuum, Wixom, Michigan, USA. “Thanks for the opportunity to offer my thoughts; It’s difficult to micro-focus on the year ahead considering the totally new directions to industry anticipated from Washington and the new administration. This could (at least for a time) be a series of moving targets. If they stay to their word, we could ultimately have some exciting times and perhaps see the start of a revitalization of the American manufacturing community to again be competitive on the world market. Certainly the damage done over that last decades is deep so total turn-around will need to be an evolution, not instantaneous. The short attention span and need for instantaneous gratification of our society today will make this difficult to spin positively while the tides change but I am hopeful. As for the heat treating community, the transition from atmosphere heat treating to vacuum heat treating will continue regardless of the administration.

Atmosphere heat treating will never completely go away, but I sense that we’re approximately 1/3 of the way through a ~30 year paradigm shift toward vacuum (normal equipment life is 30 years +/-). As a work force, we’re moving away from open flame, smoke belching and overheated work environments; generally speaking people just don’t want to work like this anymore. With the advent of vacuum carburizing and one-piece-flow type vacuum processing systems and the expert controls now available (with more coming) in addition to improved materials for higher temperature (and therefore far faster) processing efficiencies are gained, ergonomics are assured, healthy work atmosphere is provided and quality is certain. This precisely answers the requirements of today’s industry and workforce. We all know that true “heat treaters” are hard to come by these days and there aren’t many on the horizon. So who’s going to operate, tune and understand the workings of the behemoth atmosphere systems on a day-to-day basis? This is where OEMs have turned to developing smarter control packages. This too is where vacuum plays in. Heat treating in a more machine-tool like manner; with precision and efficiency. This paradigm shift will accelerate and decelerate based on regulatory pressures, but it won’t stop. We will see far more movement toward the clean, quiet, precise vacuum heat treating arena”.

Rep Changes
In North America most furnace sales are handled by independent manufacturers reps who generally represent several firms providing products to the heat treatment industry. Two long established reps on the US West Coast have made a change to start off the New Year. Bob and Benjamin Grammer of Grammer Vacuum Technologies [http://www.gvtinc.com/] based in Coeur d’Alene, Idaho are now representing new furnace builder Williams Industrial Services of Bowling Green, Ohio [http://www.wisfurnaces.com/] GVT is a long establish company dating back to 1992. Also on the West Coast we see that Marty Keylon of Keylon Thermal Consulting [http://www.mclaughlinsvc.com/] of Pollock Pines, CA is now representing McLaughlin Services of Avilla, Indiana [http://www.mclaughlinsvc.com/] Marty is another very experienced individual having worked in the industry for almost 40 years including at commercial heat treater Bodycote. January 3, 2017.
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/Temp
- Generator
- Induction
- Lab Equipment
- Miscellaneous
- Salt
- Vacuum
- New 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 # B423 Grieve High Temperature Oven-UNUSED
- Item # B422 Ipsen Sealed Quench Line
- Item # B421 Surface Combustion “Super 36” Allcase
- Item # B420 Lindberg Batch IQ
- Item # B419 Klockner Plasma Nitrider
- 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 # B412 Pacific Scientific Batch IQ Furnace
- Item # B411 Pacific Scientific Batch IQ Furnace
- Item # B410 Box Furnace
- Item # B409 Nabertherm Kilns (5 Available)
- Item # B406 Carbottom Furnace
- Item # B405 Surface Combustion "Super 30" Allcase
- Item # B402 Holcroft Batch IQ Furnace
- Item # B401 Carbottom FurnaceHayes 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 # B378 Batch IQ Line 36” X 48” X 32”
- Item # B374 Atmosphere Box Furnace
- Item # B371 Sauder “Auto-Tilt” Car Bottom Furnace
- Item # B367 Atmosphere Box Furnace
- Item # B358 Surface Combustion Batch IQ Furnace Line
- Item # B352 Pacific Scientific Box Furnace
- Item # B349 Beavermatic Batch IQ Furnace
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 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.

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 # B420 Lindberg Batch IQ.

Item # B419 Klockner Plasma Nitrider.
Working dimensions of 24" diameter by approx 60" high - vessel made in 1985. Power supply was made in 2006 and is a 160 KW unit. System is in good overall condition and is currently installed however there are issues with the control system which will have to be corrected by the buyer. Comes with built in gas station that allows the use of H2, N2, CO2, and CH4. Best offer.

Item # B418 Lindberg High Temperature Oven.
Model 41-MT-363636-2. Serial number 949223. Working dimensions of 36W x 36L x 36H. Manufactured in 1994. Maximum operating temp of 2050°F. 200 amp, 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. Recurculating 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.**

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**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.**

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**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.**

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Item # B412 Pacific Scientific Batch IQ Furnace.
Footprint: 13’W x 32’L x ~13’H. Electric Radiant Tubes: GloBar, 88V, 2 phase, 130kW. Features included: Quenchant cooler, single ended powered loader, roller table for unload, carbon control (marathon monitor probe), twin agitators (both sides), water cooled fan bearings, brick lined (mid-life), quenchant filtration equipment, manuals & prints. Companion Aqueous Parts Washer available. **Condition: Good. Asking Price: $60,000 or best offer**

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Item # B411 Pacific Scientific Batch IQ Furnace.
Karbomatic model, S/N 662-0447. Working dimensions of 24” wide X 36” deep X 18” high, load capacity of 800 pounds. Can be used for carburizing, carbo-nitriding, hardening, tempering, normalizing, annealing and furnace silver brazing. Maximum operating temperature of 1900F. Temperature Uniformity: Has not been surveyed recently. Should be +/-10F if rebricked. Atmosphere: Endothermic, Natural Gas, NH3. Footprint: 11’W x 27’L x ~12’H. Electric Radiant Tubes: 102V, 3 phase, 72kW, 1 Zone, (240V with transformer). Features included: Quenchant cooler, single ended powered loader, roller table for unload, carbon control (marathon monitor probe), twin agitators (both sides), water cooled fan bearings, brick lined (mid-life), quenchant filtration equipment, manuals & prints. Companion Aqueous Parts Washer available. Condition: Good, except needs to be rebricked. **Asking Price: $15,000 or best offer**
**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 & ovetemp, 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.**

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**Item # B409 Nabertherm Kilns (5 Available).**
2013 Nabertherm model H3630/HS lift top shuttle kiln made in Germany for use in the USA. Requires 200 KVA at 480/3/60 with an operating temperature of 1340 °C in air or inert atmosphere. Furnace open on each side, with hydraulic lift, air induction system for force cooling or volatile evacuation and heating on all six sides including the hearth. Includes manual hearth size 67” x 114” and load size approximately 48” x 80” x 48” high with 10’ of track. Control Panel with Siemens Simatic Multi Touch Panel. Unit is in EXCELLENT condition and only turned on to test never used in production. Full operating manuals with equipment purchase. Approximate outside Exterior dimensions approximately 8 x 15 x 16.5 Feet. New cost was $350,000 each. **Asking Price: $95,000 each.**
Item # B406 Carbottom Furnace.

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.
Gas fired recuperative, jet recirculating, annealing, normalizing, stress relieving car type furnace. Manufactured by Johnson, Serial number 1667. Working dimensions of 30' wide X 40' long X 15' high. Maximum operating temperature of 1800°F. 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. Foot print 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/60 cycle. Operating temperature 1350°F to 1750°F. 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 2000°F. 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 over temp and Honeywell digital recorder. Power driven car with (3) three sets of axles. Door is attached to furnace. Furnace is fiber 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

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**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 2000°F. 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, Eclipse 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: 2000ºF. Uniformity: Full work zone, prob. +/- 50ºF. Lower 6": prob. +/-20ºF. Atmosphere: Wet or Dry Hydrogen or Nitrogen Purge. Controls: PLC - Automatic with Proface touch screen. Price: $5,000 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 dimension: 16" dia. x 20" deep, approx. Weight: 1700 lbs., heating elements: helical coil type nichrome v, this furnace is equipped with a sealed retort and fan assembly for gas nitriding. $9,800.00 USD.

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Item # B378 Batch IQ Line 36" X 48" X 32".
This is a complete line consisting of the batch IQ, Model FC-364830, dunk/spray washer Model FCW-364830, temper Model FCT-384830, charge car, load table, 2,000 CFH endo generator and control cabinet. All items are electrically heated. Manufactured by CEC in 2007. Working dimensions of the batch IQ, temper and washer is 36" wide x 48" deep x 32" high. Batch IQ is electrically heated and uses Moly-D (molybdenum disilicide) heating elements. Note that many of the elements will need to be replaced as they were broken during a recent move. High heat is set up for endothermic atmosphere. Power supply for the entire line is 480/3PH/60Hz – 600A Panel. All the equipment is in excellent condition and virtually unused. Located in the US northwest. New this was over $1 million USD. Asking $300,000 USD.

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Item # B374 ATMOSPHERE BOX FURNACE.
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) Kromschröder 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 #B358 Surface Combustion Batch IQ Furnace. (2 available).
S/N 12156-1. Working dimensions of 62” wide X 62” long X 36” high. Quench tank 18’ wide X 10’ long X 7’ deep. Capacity 9500 US gallons. Power 480 Volt, 3 phase, 60 cycle. Gas fired-4.6 million BTU/Hour. Maximum operating temperature 1850F. Two top mounted alloy re-circulating fans. 2 Nitrogen flow meters, 2 for natural gas, 2 for air, 2 for propane and 1 for endothermic atmosphere. All have Waukee-Tronic process controls. Allen Bradley Panelview PLC-5. Yokogawa Controls. Four 30 hp gold standard agitators (28” props), 4 U Style radiant tube burners (bottom), 2 Trident tube burners (top), 2 zones with temperature controls, 2 zones with carbon control, 2 rear handlers, 1 common drive, Eclipse recuperated burners, atmosphere sample system. Complete and in good condition. Asking $250,000 USD Each.
Item #B357 SURFACE COMBUSTION BATCH IQ FURNACE LINE.
Serial Number: 12155-1. Working Dimensions: 87” WIDE x 87” LONG x 36” HIGH. Quench Tank Dims.: 20’ WIDE x 12’ LONG x 7’ DEEP. Quench Tank Volume: 12,500 GALLONS. Power: 480 VOLT, 3 PHASE, 60 CYCLE. Fuel: NATURAL GAS - 4,600,000 BTU/HOUR. Maximum Temperature: 1,850°F. Fans: TWO TOP MOUNTED ALLOY RE-CIRCULATING FANS. Flow Meters: 2 NITROGEN, 2 AIR, 2 NATURAL GAS, 2 PROPANE, 1 ENDOTHERMIC. ALL HAVE WAUKEE-TRONIC PROCESS CONTROLS. Controls: ALLEN BRADLEY PANELVIEW PLC-5, YOKAGAMA INSTRUMENTS. General: SIX 30 HP GOLD STANDARD AGITATORS (28” PROPS), 4 “U” STYLE RADIANT TUBE BURNERS (BOTTOM), 2 TRIDENT TUBE BURNERS (TOP), 2 ZONES WITH TEMPERATURE CONTROLS, 2 ZONES WITH CARBON CONTROLS, 3 REAR HANDLERS, 1 COMMON DRIVE, ECLIPSE BURNERS & RECUPERATIVE, ATMOSPHERE SAMPLE SYSTEM. ATMOSPHERE TEMPER: Load Dimensions: 87” WIDE x 87” LONG x 36” HIGH. Power: 480 VOLT, 3 PHASE, 60 CYCLE. Fuel: 1,500 CFH (1,500,000/HOUR), 4 U TUBES, ECLIPSE BURNERS & RECUPERATORS. Maximum Temperature: 1,350°F. Controls: ALLEN BRADLEY PANELVIEW PLC-5, YOKAGAMA INSTRUMENTS. General: ONE COMUSTION BLOWER, ONE (1) COMMON DRIVE, TWO (2) RE-CIRCULATING FANS. LOADED AND UNLOADED BY CHARGE CAR. PARTS WASHER; HEATED (FORCED AIR) RINSE/DRY. Load Dimensions: 87” WIDE x 87” LONG x 36” HIGH. Power: 480 VOLT, 3 PHASE, 60 CYCLE. Fuel: 1,500,000/HOUR. Maximum Temperature: 180°F. Controls: INCLUDED. General: INCLUDES OIL SKIMMER & FILTERS. CHARGE CAR IS ALSO INCLUDED. LINE IS COMPLETE AND IN GOOD CONDITION. ASKING $650,000 USD FOR EVERYTHING.

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-prewired 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.

Item #B349 1995 Beavermatic Atmosphere Integral Quench Furnace with 45” Tall Parts Capability, Model: 64-45E1. Condition: Overall - Fair to Good (Brick needs to be replaced, Radiant Tubes good.) Work Zone: 36”W x 54”L x 45”H Atmosphere: Endothermic (generator not included) Carbon Control System (Honeywell UDC Controller, Probe is SSI Gold Probe Max. Temperature: 1850˚F Uniformity: +/- 25˚F from 1300˚F to 1750˚F OEM Load Rating: 4,000 Pounds Gross Wt. (Discuss with owner for history of loading) Heating: Electric Elements, 460V/3Ph/60Hz, runs approx. 100 kW at 70% power setting Breaker Size: 400 Amp for elements, 150 Amps for controls Quench Heater and Quench Cooler Included Air-cooled fan bearings Footprint: 13ft W x 19ft L x 15ft H Pit Required: Currently in pit of 13ft W x 13ft L x 22in D, but could be only 11-12ft L Distance Between Roller Rails: 21” Centers Hearth Height above Shop Floor: 49.5” Load Cart and Grids: Not included with furnace This furnace is now in storage, but it’s companion is still in operation and can be demonstrated on your parts. Available for inspection in Pacific Northwestern U.S. Immediate Availability. Price: $25,000
CONTINUOUS

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 # 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 # C309 Ipsen Pusher Line
• 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 # 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 # 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 #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. Mitsibushi 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@2440/3/60, 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).**
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 wauleeketronic 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 # C309 Ipsen Pusher Line.
Model T-22 GM, S/N 54499, manufactured 1969. High heat furnace consists of a pre-heat, 2 separate zones and an internal oil quench. Gas fired capable of 1750 F. Endo atmosphere. Straight through vertical radiant tubes. Used for carburizing. High heat will hold three trays each 36 X 48 with 30" clearance. Each tray can handle at least 2,000 pounds. Also included is a transfer car, 1250F gas fired temper and dunk/spray washer. Currently installed but not in use. Alloy and brickwork are in good shape however all controls will need to be replaced. Overall complete and in in reasonable condition. Asking $49,000 USD. Must be removed within the next few months All Offers Considered.
Item # C308 AFC Mesh Belt Hardening Furnace.

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 1750°F high heat furnace and 1700°F 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 is 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.

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**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 1750°F. 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 1700ºC, 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, Globar Heating Elements. Power Requirement: 200 Amps, 480V/3Ph/60Hz. Temperature Rating: 2150°F. Water Requirement: 3 GPM. Air Requirement: 100 PSI. Controls: GE90 PLC. Honeywell Temperature Controller and Overtemp (missing but will be replaced). Marathon Monitors Carbon Control System. Includes Quench Press that was handling up to 5” Diameter bearings. Prior user reference available upon request. Asking price: $29,000.00 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 sold 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

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 # 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 # T326** Aluminum Drop Bottom Dual 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 #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 Tempering Furnace.
**Asking Price:** $10,000.00 USD.

![Image of AGF Rotary Tempering Furnace](image1)

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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 1,000°F. Oxidizer chamber has an operating temperature of 1200-1600°F. Complete and installed but not in use. Reasonable condition. **$2,000 or best offer.**

![Image of Guspro Heat Cleaning Oven](image2)

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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

![Image of AOV Aluminum Drop Bottom Oven System](image3)
**Item #T326 Aluminum Drop Bottom Dual Oven System:**
Wisconsin Oven, Dual Oven Aluminum Drop Bottom Solution Treating System, 2 Ovens, Quench Tank, Rinse Tank, Platforms, Doors, Chiller, Power Supplies, Controls, Work Zone: 60"W x 84"L x 90-3/4"H each oven, Temp. 800-1200°F, 30 H.P. Recirculation Fan, Electric, 288 kW each, 346 Amps each. **Asking Price: $145,000 USD for all Offers Considered**

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**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.**

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**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.**

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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.**

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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 (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.


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

Item # T312 Recirculating Walk-In Oven.
**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 60Hzx. 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 # G199** 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

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**Item # G198 3,000 CFH Endothermic Generator.**

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**Item # G197 Ammonia Dissociator.**
**Item # G196 Surface Combustion 5000 CFH Endo Generator.**
Serial number AC 42332-1A. Maximum temperature 1950°F. 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.**

![Image 1](image1.jpg) ![Image 2](image2.jpg) ![Image 3](image3.jpg)

**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 1950°F. Air cooling. SSI Atmosphere controls. Complete and in good condition. **Currently in storage. Asking $25,000 USD.**

![Image 4](image4.jpg) ![Image 5](image5.jpg) ![Image 6](image6.jpg) ![Image 7](image7.jpg)

**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.**

![Image 8](image8.jpg) ![Image 9](image9.jpg) ![Image 10](image10.jpg)

**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.**

![Image 11](image11.jpg) ![Image 12](image12.jpg)
**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.**

![Surface Combustion Endo Generator](image)

**Item #G178 Ammonia Dissociators (4 available).**
Built by Sargeant & Wilbur, 4 electrically heated Ammonia Dissociators. Model GAD3000E. 3,000 CFH capacity. Maximum temperature 1759°F. Voltage 480/3/60/60 kW. External dimensions of 5'W x 6'H x 8'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 118.5 KVA) is included. Manuals and drawings are also included. Very good condition. **Asking $29,500.00 USD each.**

![Ammonia Dissociator](image)

**Item # G176 Surface “Multi-Bottle” Endo Generators.**
Manufactured by Surface Combustion. Natural gas heated 675 CFH/HR. Model # RX 35-75-3V. Maximum temperature 1950°F. 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.**

![Surface Combustion Endo Generator](image)
**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.**

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**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 “mixor” valve then into the Waukee gas pump. Mixed gas enters the 3 “mixed gas” flow meters, through the Selas fire checks and enters the top of the retorts. The gas travels through the catalyst filled heated retorts and exits at the bottom. The exiting Endothermic gas passes through water cooled chambers then finned cooled air heat exchangers then through the Endothermic flow meter. A pressure regulator is supplied on the exiting gas piping. Good condition. **Asking $29,500.00 USD.**
INDUCTION

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 # I171 Inductoheat UP9-30 kW
- Item # I170 Lepel/Inductoheat SP5-40 kW
- Item # I169 Induction Power Supply
- Item # I164 Ajax Tocco Induction Power Supply
- Item # I162 Induction Press Quench System
- Item # I160 Ajax Tocco Power Supply (unused)
- Item # I158 Induction Power Supply
- Item # I153 Raydyne Induction Heating System

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**Item # I171 Inductoheat UP9-30 kW**, 10 kHz SCR type induction heating power supply with integral heat station including a Jackson Transformer. It appears in excellent condition and is available for $6,000.00 USD. There is no warranty but it is sold with the assurance it is in good working order. Start up and training service is available at extra cost by an experienced induction heating service engineer.
**Item # I170 Lepel/Inductoheat SP5-40 kW,**
10 kHz SCR type induction heating power supply with a separate Heat Station (I believe this could be operated at 3 kHz but the heat station is currently arranged for 10 kHz). The Heat Station appears to be arranged for use with multi-turn induction coils. It is in very good condition and is available for **$6,000.00 or “Best Offer”**. There is no warranty but it is sold with the assurance it is in good working order. Start up and training service is available at extra cost by an experienced induction heating service engineer. We can also offer circuit board repairs for Lepel/Inductoheat Power Supplies. A number of other Lepel/Inductoheat SP-11 units are available in the range of 30 to 60 kW, 200 kHz.

**Item # I169 Induction Power Supply.**

**Item # I164 Ajax Tocco Induction Power Supply.**
Model# OL-426-150-3/10-00M. Manufactured 12/06. Serial Number: 46-1128-11. Wiring Diag.: WD-287513. CTK.BKR.BRMS.: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 #I162 Induction Press Quench System.
EDMS Industrial Induction Heating and Die Quench, New in 2003, 400kW Output Supply, 3kHz Frequency. This machine is currently being used to reheat and die quench spiral bevel ring gears up to 500mm in diameter. Installed to replace the rotary furnace and isolated die quench processes. This machine is designed with an automatic conveyor and loading system to continuously heat, die quench, and temper 500mm rings. This unit has an EFD 400kW output supply with a 1.7-3.0kHz frequency designed for deep and fast heat penetration which allows rings to be heated and die quenched in just minutes. This system has an added setup to convey quenched parts to and through a continuous Apar IPSEN tempering and preheat electric furnace with a 36" x 48" opening with a 3,000 lb load capacity. This unit also comes complete with its own outside cooling system and monitoring to ensure flow, min/max pressure, and min/max temperature. This fully integrated system allows the flexibility to handle parts from 125mm to 500mm diameter. The transfer time is presently 5-6 seconds from induction to quench. The pick and place system can be upgraded by purchasing and utilizing a robot to allow for faster transfer time, for thin wall parts. Thus allowing the induction and quenching of bearings, cones, and cups, as well as, outer rings and end rings.

Conversion available to make this unit a Heat and Quench station with variable high frequency independent of the Die Quench.

MACHINE SPECIFICATIONS:

* Output Supply 400kW
* Frequency 1.7-3kHz
* Max Diameter 500 mm
* EFD Power Supply
* Power Requirements 3 x 480V - 60Hz - 570KVA
* Dimensions (L x W x H) 1790mm x 1200mm x 1730mm
* Weight 15500 kg

Customer paid over $1,500,000.00 in 2003

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Item #I106 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 #I158 Induction Power Supply.**

**Item #I153 Raydyne Induction Heating System.**
Input Voltage: 480V/3 Phase/60 Cycles/110 Amps, Output Voltage: 40 kW, 450 kHz, Year Built: 1985, Model of Power Supply: EI-40, Serial Number of Power Supply: 41408901-B. Please note the RF Tube is missing. Includes a dual heat station with quench. Model of Heating/Quench Station: 10228201, Serial Number of Heating/Quench Station: 10228201B. This system is Government Surplus and appears to be fairly clean inside power supply cabinet. The power supply has a “Control Concepts” SCR power controller. Asking $7,500.00 USD.
LAB EQUIPMENT

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 # L4** Behringer Vertical Plate Saw
- **Item # L3** Laser Diffraction Particle Size Analyzer
- **Item # L1** Spectra-Tech 0044-003 Infrared Microscope

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**Item #L8 Clark Micro Hardness Tester.**
Model DMH-2, Serial number 3388. Good operating condition. **Asking $6,500.00 USD.**

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**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:

![Image](Image1.png)

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

![Image](Image2.png)

Item #L4 Behringer Vertical Plate Saw. Model LPS-60-T.
Longitudinal-cutting hydraulic drive vertical plate saw for cutting aluminum, low alloy and high tensile profiles or solid materials with bi-metal or carbide-tipped saws blades. Cutting capacity; Length, 49.6", width 28.3" height 23.6". Saw blade dimensions 17.9" X 1-1/2" X .050". Excellent condition. **Asking $20,000 USD**

![Image](Image3.png)
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 # 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 # M395 Surface Allcase Components**
- **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 # M377 Marley NC Cooling Tower with SPX Cooling Technology**
- **Item # M373 Gibson Tumblast**
- **Item # M372 Pangborn Rotoblast**
- **Item # M371 Dry Coolers Pumping Station**
- **Item # M370 SBS Quench Airs (2 available)**
- **Item # M366 Wheelabrator Rubber Belt Tumblast**
- **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 # M336 Cryogenic Unit. NU-BIT Cryomersion Model 1500**
- **Item # M334 Berg Water Chiller**
- **Item # M314 Holcroft Dunk/Spray Washer**

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**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.**

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**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.


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 #M395 Surface Allcase Components.
NEW Surface Combustion Prolectric® heating elements (4 available), one front and one rear chain guide, two roller rails, spacer bars, washers, nuts and 19 ¼” fan. These parts are for a Surface IQ Model: STD 24-36-24. All items unused. New these items would be $33,000 USD. Asking Price: $16,500 USD.

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 -346°F. 240 Volt with 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.

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Item #M385 Giant Finishing Machine.
Manufactured by “Giant”, Model GB-10 Spiral bowl with Internal Seperation 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”. NEMA 12 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.**

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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 200°F. Good condition. **Asking $12,500 USD.**

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Item #M383 Spray Washer.
Manufactured by Park Thermal. Working dimensions of 30” X 48” X 30”. Gas heated with a maximum temperature of 150°F. 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.**

![Image of Water Cooling System](image1)

**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)**

![Image of Wheelabrator](image2)

**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.**

![Image of Shot Blast System](image3)

**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.**

![Image of Radiant Tube and Supports](image4)
Item #M377 Marley NC Cooling Tower with SPX Cooling Technology:
Two cell unit SPX NC8400 (each cell has 540 Tons of cooling for a total of 1080 Tons of cooling). Marley is the premium brand in the cooling tower industry. Very good condition with only two years of operation, and were sold when the furnaces it was supporting were sold. The Marley Cooling towers are currently ready for immediate delivery. Priced to sell. Sale price for one cell unit: $22,500. Sale price for both units: $40,000

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 Tumblast.
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:
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”.

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.**
Item # S001 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.
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 # 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 # VF310 Abar Ipsen HR 46 X 72 Vacuum Furnace
- 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 # VF291 Small Top Load Vacuum 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 # VF280 AVS Vacuum Annealing 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 # VF253 Vacuum Induction Furnace
- Item # VF243 35" Diffusion Pump
- Item # VF242 35" Diffusion Pump
Item # VF315 AVS Vacuum Furnace (Rebuilt)

Item # VF314 Ipsen Bottom Load Vacuum Furnace

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)
Item # VF310 Abar Ipsen HR 46 X 72 Vacuum Furnace
Abar Ipsen HR 46 X 72 Vacuum Furnace. Model HR 46 X 72, Serial # BM392. Completely rebuilt in 2015, excellent condition. Hot zone dimensions of 24” X 24” X 72” deep, moly construction new in June of 2015. Moly elements. Ipsen control panel new in June 2015. Operating temperature of 2400F. 32” Varian Diffusion Pump (new in 2015). Current configuration has a 4-5’ deep pit for the diffusion pump. Stokes 212 mechanical pump was rebuilt in early 2016. Welch 1398 holding pump was rebuilt in 2015. Stokes 615 blower recently rebuilt. Spare Rebuilt Stokes 212 mechanical pump and Welch 1398 holding pump available. Current footprint: 21’ Wide (+ water surge tank which could be relocated 4'x10'x6'H). 24’ Deep (+10’ deep loader). 12’ High. 5’x9’x5’ deep pit for diffusion pump. 480 Volts, 3 Phase, 60 Hz. Loader Included, 10’ Long x approx. 3.5’ Wide. 2-Tier TZM Moly Grid Fixture, 24” Wide x 72” Long x approx. 18” Tall. Cold Trap: Liquid N2 fed Cold Trap Status: Furnace was in production until January 1st, 2017. Asking price $350,000 USD but offers will be considered. Flexible vacuum hose included.

Item # VF309 Abar Ipsen Vacuum Furnace

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 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.

Item # VF306 Edwards Stokes 1722-J Skid.

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.

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.

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 in 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,
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. X90" effective working length. The operating temperature was developed for a maximum operating temp of 1200° F. The vacuum nominal level (continuous) duty was developed as 1 X 10^-6 Torr. Maximum vacuum level to operate in continuous duty is 5 X 10^-8 Torr. The unit was designed to use N2 gas. The unit was an R & D unit that was built in 1998, but has had little to no use. Excellent condition. New this was $90,000 USD. **Asking Price: $29,000.00 USD.**
Item # VF291 Small Top Load Vacuum Furnace.
Asking Price: $10,000

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.**

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**Item # VF281 Surface Combustion Vacuum Furnace.**
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.

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Item #VF267 SEMI-CONTINUOUS Titanium Diffusion Bonding Hot Press.
System consists of: Load Chamber. Rated for 2720 kg load Moly Pin walking system rated for 2720 kg load 44”w x 54”d x 6.5” high product size in semi continuous mode Stokes 612/300 pump/blower Mounted on roll out frame for easy maintenance

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

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

**Cooling Chamber.** 20” diffusion pump. Stokes 612/300 pump/blower Moly Pin walking system rated for 2720 kg load 44” w x 54” d x 6.5” high product size in semi continuous mode Fast Cool 60°F / min argon. 1750°F to 1200°F. 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 rebuilder’s 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 # VF253 Vacuum Induction Furnace.
Built by GH Induction Atmospheres in 2008. Model VF-40. Working dimensions of 12” diameter X 17” high. Overall dimensions of 86” wide X 86” long X 96” high. S/N 018/VF-40/173. 2100F, 400-480 Volts, 200 amps., 3 phase, 50/60 HZ. Honeywell UDC Digital temperature control, hi-limit control and strip chart recorder along with GE Fanuc Quick panel and Televac vacuum gauge. SS vessel mounted vertically above load platform. Interior of vessel has induction coil, 15” diameter. Ceramic sleeve and 14” diameter graphite susceptor. Parts to be heated are loaded on the work platform and raised (hydraulically) into hot zone. Needs new power supply. Vacuum pump is a Pfeiffer Model DUO35 21 CFM (36 cubic metres/hour). At completion of heat cycle furnace is back filled with Argon and cooled by external blower and heat exchanger. Water chiller is available and will be quoted upon request. Excellent condition. Asking $49,500 USD.

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.)
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.

**NEW EQUIPMENT**

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.
At "The Moly Store" we offer extremely competitive pricing on all your molybdenum requirements including wire, round bar, nuts, washers, studs, all thread, sheet, plate even designed and assembled grids! This is combined with unsurpassed quality and a large inventory in the USA available for immediate delivery. The links below will take you to our current inventory all of which can be shipped almost immediately. Bob and Ben Grammer welcome the opportunity to help with your requirements Sales@gvtinc.com Phone: 208 765-6854.
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

- HEAT TREATMENT METALLURGIST WANTED, NEW ZEALAND
- PRODUCTION MANAGER
- SALES ENGINEERS
- SALES REP WANTED

Item #0315 Heat Treatment Metallurgist
Heat Treatment Metallurgist Wanted, New Zealand. This position is responsible for the metallurgical integrity of products heat treated in our commercial works. Support of the operation through process control & improvement initiatives, and establishing & maintaining customer relationships are part of the role. We are a commercial Heat Treater and a specialised metal part Manufacturer. Our heat treating includes batch Vacuum, Integral quench, and Gaseous nitriding processing, Induction hardening, Cryogenic treatment, as well as various non-ferrous processing equipment and laboratory services. Applicants will have:

- a recognised qualification in Materials Science or Metallurgical Engineering
- a minimum of 5 years heat treating metallurgical experience; preferably in a commercial heat treating works.
- excellent written and spoken English
- good mechanical aptitude and skills to provide hands-on technical plant maintenance and product support.
- good people and teamwork experience, to support and coach our heat treating processing team.
- the ability to relate and build rapport with our broad range of manufacturing and engineering related customers.
- familiarity with Quality standards and Health & Safety regulations applicable in a heat treat works.
- the preparedness and ability to apply to legally work in New Zealand

If interested in discussing this opportunity please contact me on fergus@heat-treat.co.nz
**Item #0314 Production Manager**

Wanted- Kansas City, MO. Paulo Kansas City division is looking to add an experienced Production Manager to the team. The Production Manager plans, organizes, and directs all production activities in the plant. Coordinate production activities that require cooperation between departments and shifts to ensure effective communication and efficient workflow. Ensure that production quality, productivity, and customer satisfaction requirements are met. Ensure that all production activities are conducted in a safe manner. What's in it for you? Great work environment -- we understand the importance of investing in the right people, infrastructure, and culture. We take pride in fostering a positive employee environment with employee growth and development a priority. Work/life balance -- we are committed to helping you balance work with the other commitments in your life, and we'll make sure your workload is realistic. At the same time, we'll look to you to remain flexible when the situation calls for it as we grow. Excellent compensation -- in order to attract and retain top talent, we're proud to offer competitive pay and generous benefits.

**Requirements:**

- High School Diploma or equivalent required.
- Minimum 2 years of experience in a similar or related position.
- Knowledge of practical heat treating and heat treating equipment.
- Knowledge of basic mechanical and electrical concepts.
- Excellent supervisory and organizational skills. To learn more about this opportunity please visit: [http://www.paulo.com/careers-jobs/production-manager/](http://www.paulo.com/careers-jobs/production-manager/)

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**Item #0313 Sales Engineers.**

Induction Ajax TOCCO Magnethermic is seeking experienced regional field Sales Engineers for our Capital Equipment and Aftermarket sales team in the Midwest USA. Multiple positions are available to join the Ajax TOCCO team. The successful candidate will preferably have direct experience in one or a combination of the following fields: • Induction Heating or Melt-ing • Heat Treatment, Forging, Foundry • Thermal processing or metallurgy • Repair and maintenance of capital equipment A Engineering / technical degree or relevant experience is preferred. To learn more about this position visit www.ajaxtocco.com or send resume to HR@ajaxtocco.com.
**Item #O301 Sales Rep Wanted.**

Summary: Represents location in the capacity of a sales representative. Scope is finding and selling thermal processing (heat treat) work for the Kitchener Plant located in Kitchener, ON. This position will report to the plant General Manager and will be responsible for locating customers and generating new sales for the plant. The position is open for discussion as either contract or full-time.

**Requirements (Qualifications & Skills):**

Education: BS degree or a combination of extensive training and experience with sales is required. A great personality and attitude is a must. Experience in the heat treat industry is a plus. This position will be required to travel within Canada in order to identify new customer and sales opportunities. Experience: Requires a proven, successful track record of marketing skills, sales techniques, and general business practices. High level people and communication skills is a must. Language Skills: Requires effective communication skills for interfacing with management, shop supervisors and customers. Physical Demands: Must have a current driver’s license, maintain in good standing and be able to sit and drive for long periods to customers’ facilities and other required travel. Environment: May be exposed to heat, fumes, humidity and noise. Must possess knowledge of plant and equipment capabilities in order to provide desired service to customers. Must possess ability to maintain a high level credibility while portraying a positive company image. Must be self-motivated and work within priorities established by the General Manager in order to accomplish plant goals. Knowledge and hands on experience of computer applications is required. Must be capable of pricing jobs by working with the General Manager in this effort. Must have the ability to report for work on time, follow directions, interact effectively with coworkers, understand and follow rules and procedures and accept constructive criticism.

**Essential Job Functions (Duties & Responsibilities):**

Responsible for follow up calls on budgeted accounts while maintaining acceptable levels of communication and business relationships. Prospects new customers using the established guidelines, including updating database. Review appropriate technical information through trade journals and industry reports to remain informed on current market intelligence. Perform daily sales calls to customer locations averaging 20 calls per week, including prospects and secured customers. Conduct seminar presentations to develop and inform new and existing sales accounts. Interfaces closely with Metallurgist, Customer Service Manager and Q.C. Manager during quotation process regarding facilities and capabilities. Coordinate sales effort with production, metallurgical and customer service departments. Submit detailed weekly sales call reports, monthly budget forecast and pipeline, quarterly budget variances, and yearly forecast. Attend sales meetings, submit reports on activities, competition, process, service, quality, new accounts, etc. Assists General Manager in obtaining settlement of customer claims. Please send your resumes to: cooten@bluewaterthermal.com.
INDIVIDUALS SEEKING EMPLOYMENT

- DEGREED METALLURGIST

**Item # E131 Degreed Metallurgist**
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.
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

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Email:  gord@themonty.com