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- *Thermal Technology 1224W-M 2000°C Vacuum Brew Annealer Furnace*
- *Harper International NE-10D90-RTA-WC-1050 1050°C Rotary Tube Furnace*
- *Sentro Tech Corp ST-1700C-181818-Nano 1700°C High Temperature Box Furnace*
- *Deltech, Inc DT-31-RS-1824-E3504 1700°C Glass Melt Drop Box Furnace*
- *Fulton PHW-750 Natural Gas Fired Pulse Combustion Boiler Unit*
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- *Brookfield Engineering LVDV-II+P Programmable Viscosity Meter*
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INTRODUCTION

What a difference a day makes (well perhaps not a day - lets say 4 months). While not exactly bad times for the heat treating industry over the past year or so it has also not been the best of times either. Having said that what we now see is that virtually every single captive and commercial heat treater we have spoken to over the past few months whether they be in the USA, Germany, Mexico, China or India tells us the same thing-business is good and getting better. You will see this reflected in this month's issue of "The Monty"-good stuff is happening. We look forward to talking to you about how your business is doing, receiving your press releases and working with you to sell your used furnaces.

Best regards,
Gord

HEAT TREAT NEWS

Mike Mercer Jr. Promotion

“Mercer Technologies and Midwest Vacuum Pumps are proud to announce the promotion of Michael C. Mercer (JR) to the role of President for Midwest Vacuum Pumps, Inc. and Mercer Technologies, Inc. Mike will remain the Chief Executive Officer for both companies as well.

Michael T. Mercer (SR) founded Mercer Technologies and Midwest Vacuum Pumps in Brazil, Indiana in 1994. The companies then moved to their current location in Terre Haute, Indiana, where the family business continues to grow. Michael T. Mercer has been involved in the heat treat industry for over 50 years and he will continue to own and develop both companies.

Mike designed a heating element support and gas cooling nozzle system that is proven in installations today throughout the world. He also created The Mercer Emergency Response Team to accommodate our customer’s needs 24/7. He believes in providing the customer with one stop shopping and began The Mercer Group, which is unity of Mercer Technologies and Midwest Vacuum Pumps, as well as, the Engineering Department and our In-House Machine Shop. Whether the customer needs a leak check, custom parts, a rebuilt hot zone, vessel clean out, or a new vacuum pump or drum of oil...The Mercer Group works cohesively to allow the customer one-stop service...one phone call to take care of all your needs.

Mike is proud of the work his father began and is honored to build on that foundation as he also mentors another generation of Mercer young adults to continue with The Mercer Group in the future. Mike loves his children and grandchildren alike. He enjoys boating, fishing and is an avid Chicago Bears fan.” August 30, 2017



Ipsen Upcoming Events

“CHERRY VALLEY, IL – Fall 2017 is slated to be full of events that focus on heat treatment trends, technology and training. As you prepare to hone your skills and expand your areas of expertise, here are a few items you should add to your calendar:

October 3-5, Ipsen U (with special atmosphere session)

Hosted at Ipsen’s facility in Cherry Valley, Illinois, Ipsen U courses provide attendees with a broad overview of furnace equipment, processes and maintenance, as well as a hands-on

approach to learning. Those that attend the October Ipsen U can extend their training at no extra cost with an additional day dedicated to atmosphere equipment and processes. Register at www.IpsenUSA.com/IpsenU.

October 24-26, Booth #1801, ASM Heat Treat/Gear Expo 2017

For those that want to network, connect with customers and hear about the latest industry research and trends, ASM Heat Treat/Gear Expo 2017 is the event of the year. With three days full of educational sessions, opportunities for hands-on training and a multitude of industry experts, the opportunities for learning never end.

Whether you are interested in vacuum furnace maintenance and the newest developments with augmented reality or the key considerations for upgrading existing equipment, you do not want to miss the following educational sessions:

- **Key Considerations When Planning to Upgrade Existing Vacuum Furnaces**
Tuesday, October 24, 11:20 a.m. (A213-215)
- **Maintenance Tips for Maximizing Your Furnace's Life Span**
Tuesday, October 24, 3 p.m. (Solutions Center, Booth #1631)
- **The Predictive Maintenance Experience: PdMetrics® with Augmented Reality**
Wednesday, October 25, 2 p.m. (show floor)
- **Achieving Production Flexibility with Automated Multicell Systems**
Wednesday, October 25, 2:20 p.m. (A220-222)

In addition to presenting the sessions listed above, Ipsen experts will also be available to discuss any questions you have at Booth #1801. The heat-treating industry is advancing at an accelerated pace. Make the most of ASM Heat Treat/Gear Expo 2017 by taking the time to visit the many booths, attend technical sessions and learn from your peers.

About Ipsen Ipsen designs and manufactures integrated heat treatment solutions for a wide variety of industries, including Aerospace, Automotive, Energy and Medical. With an extensive network of global locations in America, Europe and Asia, we continue to provide expert-driven solutions that strengthen heat treatment throughout the world. Learn more at www.IpsenUSA.com.” August 30, 2017



Time to Buy Alloy?

Most heat treaters are aware that nickel makes up a very significant portion of all high temperature alloy components such as base trays, baskets, fixtures and radiant tubes to name a few. 330 material commonly used in baskets is 34-37% nickel and its cast equivalent HT is roughly the same, making all of these materials which are so crucial to heat treaters very sensitive to price fluctuations in nickel. As you can see in the chart below the price has been reasonably stable for much of 2017 however in the past month we have seen a very significant increase in pricing with the result that some providers of alloy components have raised their prices on average 15% and the ones that haven't yet will certainly be doing so in the very near future (this by the way is why every alloy quote is accompanied by a disclaimer typically "due to the instability in the Nickel Market pricing subject to review and adjustment upon receipt of order"). While predictions are no more than educated guesses the consensus appears to be that nickel will continue to rise in the medium to long term for a variety of reasons one of them being lithium-ion batteries. Lithium-ion batteries commonly used in electric cars and cell phones contain a number of materials including cobalt and nickel. Cobalt has more than doubled in the past year making nickel a cheaper substitute. With electric vehicle demand expected to jump 20 times by 2025 this will put enormous pressure on the price of nickel to remain high and probably go higher. [August 29, 2017](#)



Used Equipment

Please take a look at our most recent used equipment offerings. If you see anything you like don't hesitate to get in touch with us at jordan@themonty.com or 905-271-0033. [August 29, 2017](#)

Item # G201 Ammonia Dissociator 250 SCFH
Item # C329 CI Hayes Atmosphere Belt Furnace
Item # C328 CI Hayes Atmosphere Belt Furnace
Item # VF325 T-M Vacuum Furnace 2 Bar Quenching
Item # VF324 T-M Vacuum Furnace 2 Bar Quenching
Item # G200 Endothermic Generators 1500 CFH (2 available)
Item # G199 Sargeant and Wilbur Ammonia Dissociater



Extended management at AICHELIN

Mödling, Austria. With the continued business success and the ongoing international growth of AICHELIN Group, management workload has been constantly increasing. For this reason, the owners of Berndorf AG and the management board of AICHELIN Group have appointed a new CFO into the executive board of AICHELIN Group. After a thorough selection procedure, Dr. Ronald W. Eibler has been added to the AICHELIN Group, as the new CFO and Managing director of Aichelin Holding GmbH. Dr. Peter Schobesberger, CEO of the Aichelin Group, is looking forward to jointly leading the Aichelin Group on its continued success and growth path. Dr. Eibler held a long international career at Philips Electronics, where he worked the previous 18 years abroad in numerous commercial management positions. His last assignment was CFO and managing director at Philips IT – Infrastructure and Operations in Eindhoven, Netherlands. Mr. Eibler is 50 years old and a Vienna native; he will start his new position in Mödling on 21 August, 2017. Photo; Dr. Schobesberger (left) welcomes Dr. Eibler <http://www.aichelin.com> August 29, 2017



Business Opportunities

Please take a look at our most recent employment offerings. If you see anything you like don't hesitate to get in touch with us at jordan@themonty.com or 905-271-0033. August 29, 2017

Item # 0334 Service Manager

Item # 0333 Electrical Field Service Technician

Item # 0332 Controls Engineer

Item # 0330 Plant Managers

Item # 0329 Sales Engineers

Item # 0328 Process Metallurgist Wanted

Item # 0327 Outside Sales Representative

Item # 0326 Straightener / Quality Inspector / Furnace Operator



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Monday Morning Briefing

Upcoming Auctions. We have run across two auctions coming up which feature heat treating equipment which should be of interest to our readers. The first which is an online auction starts September 12th in Venissieux, France and ends September 20th and features equipment formerly belonging to **Bosch Rexroth**. What will be of most interest are the two 1991 vintage IVA batch IQ furnaces and Ipsen Endothermic generators. At first glance the furnaces look to be a good size and in reasonably good shape. The second auction will be held September 19-20th in **Chandler, Arizona** and features the equipment from an Arizona based green energy company which has changed their process making the equipment redundant. Featured are a Brew vacuum annealer, a Harper rotary tube furnaces, a high temperature box furnace and a few other items all in very good condition. We will have more details about this auction in the very near future.



A recent market study had this to say about the **Global Vacuum Heat Treating Market**; “Research analysts forecast the global vacuum heat treatment market to grow at a CAGR of 5.32% during the period 2017-2021.” To find out all the details we would have had to fork over the \$2,500.00 or so for the whole report which we certainly weren’t prepared



to do because many of these reports are crap. Still if you can believe this it sounds like good times ahead. **3D Printing** or “additive manufacturing” is a fascinating process but what its effect will be on the heat treating industry is totally unknown. However a commercial heat treater in the UK, Alloy Heat Treatment is betting they can make money from it with a mobile heat treating service-interesting idea. “Heat treatment specialist, **Alloy Heat Treatment**, is set to launch a pioneering new process to capitalize on opportunities emerging as part of Industry 4.0. The Dudley firm, the UK’s first and only specialist in the heat treatment of aluminium alloys, has developed an innovative mobile heat treatment service. The firm, a member of manufacturing alliance Made in the Midlands, is targeting the new service in support of the additive layer manufacturing market – especially in the aerospace and motorsport sectors. The additive layer manufacturing market – more commonly

referred to as 3D printing – has undergone rapid development in recent years and is set to have a huge impact on the future of the whole manufacturing industry. Ian Perks, Sales Director at Alloy Heat Treatment, said: “The proposed service is currently being designed to be transported on the back of a fix-bed lorry. “We aim to fill a gap in the additive layer manufacturing market, as we feel that this innovation will provide a great benefit to aerospace, F1 and Moto GP organisations.” With the global metal additive manufacturing

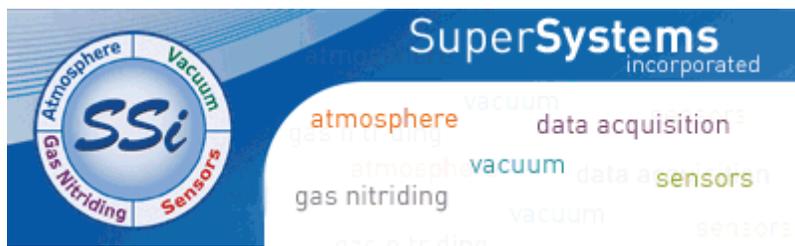
market predicted to be worth more than \$6.6 billion by 2026 , the firm is hopeful the service will attract plenty of interest.”



Specialty Steel Treating Fire. It would appear that one of the largest commercial heat treaters in the USA had a relatively small fire last week; *“A fire left part of Eight Mile closed Wednesday afternoon as fire crews battled a blaze at a Farmington Hills heat treatment facility. Farmington Hills Fire Chief John Unruh said crews got the call just after 1 p.m. Wednesday of a fire at Specialty Steel, 31610 W. Eight Mile. Crews from three of the city’s five fire stations arrived and began working on the fire, which had begun inside the facility and gotten as high up as the ceiling, about 30 feet in the air. “We found a fire inside the building that had extended to the roof,” Unruh said. “Within about 35 minutes, the fire was under control and that’s where we are at right now.” The incident left part of westbound Eight Mile closed Wednesday afternoon while fire crews worked on the fire. Unruh said the department was still investigating what exactly caused the fire, but he did not know at the scene what caused it. “To give you an exact cause would be difficult at this point,” he said. He did rule out any suspicion of arson as the cause. No injuries were reported as a result of the fire, Unruh said.”*



Nate Durham who has been a long long time **Ipsen** Employee recently recieved a promotion and is now **Aftermarket Sales Manager** for Ipsen in Rockford, Illinois. And to round things out **Fine Sinter** in Tiffin, Ohio will be adding sintering capacity as part of this expansion; *“Fine Sinter Co., Ltd., will invest \$20 million in two new production lines at the headquarters of its North American subsidiary, American Fine Sinter (AFS), Tiffin, Ohio, USA. According to Masayuki Yamamoto, AFS President, the expansion is to meet the demand posed by the company’s continued growth. “Our business base is expanding, and we are thankful to have dedicated employees and the backing of the Tiffin community, which allow us to continue to advance,” stated Yamamoto. In addition, the expansion will afford the company the space and equipment to produce mid and torque carriers for the Toyota Highlander, RAV4 and Camry, using Toyota’s new technology, reportedly making its Tiffin plant one of only three facilities to use this technology worldwide.” August 28, 2017*



Vesco-McLaughlin, Inc./East Windsor, CT, USA

If you cast your eyes up towards the top of this page you will see a brand new banner ad from a company by the name of Vesco-McLaughlin based in East Windsor, Connecticut—there is a rather interesting story behind this company. **Vacuum Engineering Services Co., Inc.** was formed in 1983 by Jim Evans to provide support services to the vacuum processing industry. In early 2017 the owner decided it was retirement time and hired a firm to help find a buyer for the company. “The Monty” picked up on the listing and we had a brief mention on the website at the time. This brief mention came to the attention of Mr. Jeff McLaughlin a very ambitious individual who owns McLaughlin Services in Avilla, Indiana. Jeff’s background is a lifetime in the furnace building/rebuilding business which lead to him forming McLaughlin Services back in 2007 to rebuild, service and build new heat treating equipment. Jeff saw the opportunities at Vesco and a deal was quickly

reached. The new acquisition compliments McLaughlin's recent decision to set up a location on the west coast meaning the company now has locations on both the east and west coasts with the central location in Indiana. So if you noticed our mention that Jeff is an ambitious fellow you can now see why; from nothing to three locations servicing the heat treat industry in just 10 years is quite an achievement. **August 25, 2017**



Exactatherm Ltd./Investments

Founded in 1978 by Dr. Peter Lidster, commercial heat treater Exactatherm Ltd., in Mississauga, Canada has always been a leader rather than a follower. Over the years the company has been one of the first in North America to embrace Plasma (Ion) Nitriding, NADCAP certification, advanced coatings and high pressure vacuum heat treating. The company makes our news section today because of the multi-million dollar investments the company has made very recently. In just the past two years Exactatherm has installed a brand new SECO/WARWICK 3,500 pound capacity, vacuum oil quench furnace, a SECO temper furnace, a 15 bar SECO/WARWICK vacuum furnace with working dimensions of 24" X 36" and a Plasma Nitriding furnace made by the company themselves with a load capacity of 20,000 pounds. We at "The Monty" are impressed by all of Exactatherm's achievements but probably most impressed by the fact that the company has the ability to

design, build and run what is a state of the art Plasma Nitriders- few companies have the ability to do this (although Advanced Heat Treat Corp in Iowa is another that comes to mind). Worth mentioning is the fact that this is a family owned business with 4 Lidsters now involved, Peter, Dan, Tim and Amanda. An impressive company that we will be hearing more about in the future. **August 24, 2017**



Dr. Peter Lidster, Gord Montgomery



Dr. Peter Lidster, Dan Lidster



Dr. Peter Lidster, Jordan Montgomery

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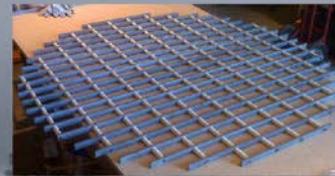
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California Heat Treating Costs

Yesterday we had comments about the heat treating costs in California, today we have these thoughts from **Mr. Derek Dennis** President of **Solar Atmospheres** one of the largest commercial heat treaters in the state. **August 23, 2017**

"I saw your article on the website today and I thought I'd throw my two cents into the mix for what that's worth... It's true that the cost of doing business in California is more expensive. With the electrical costs @ approx. \$0.17kWh (Summer) & \$0.135kWh (Fall, Winter, Spring) and the local regulatory mandates, it can be a little overwhelming. But all this being said, it's just the way it is out here and all the local manufacturers are in the same boat. Very seldom and I mean VERY seldom do we run across a manufacturer that's sending heat treat outside the state because of pricing. Economically and logistically it just doesn't make sense to do this.

Solar opened this facility 1 January 2011 and since then, we have grown at no less than 30% per year. We are currently 10% away from opening our second building that will more than double our internal capacity. Even after this expansion, we are already looking for new ways to increase our capacity because the demand is there. Aerospace is still alive and well in Southern California and this little Inland Empire company is working hard to keep up with the demand and still provide a quality product coupled with the highest level of customer service possible.”

Bill Jones, CEO of the Solar Group of Companies also has some comments to add.



“Before opening our Fontana (Inland Empire) California Heat Treating plant we had a dozen or so manufacturing companies shipping product for Heat Treating or Brazing to both our HT plants in Souderton, Pa. and Hermitage, Pa. This was several years prior to our decision to open Solar Atmospheres of California. The prime decision at that time was poor deliveries, less than desirable quality, price about equal, including our shipping costs, compared to locale competition. Prior to opening the California plant, as this was a major decision, several of our executives, including myself, made separate trips to visit our California customers. All gave us excellent vibes and promised business if we established a plant. Derek Dennis a lifelong Californian was selected as our start up President and he decided on Fontana and together we built a brand new “greenfield plant”. Fontana is 40 miles due East of Los Angeles and selected to avoid down town traffic and an available quality labor pool, preferring a less vigorous commute. William R. Jones, Owner, Solar Atmospheres Inc. Companies.”

Paul Polesnak/Franklin Bronze Precision Components

“Paul Polesnak has joined Franklin Bronze Precision Components, LLC (FBPC) as Quality Assurance Manager in Franklin, PA. Paul comes to Franklin Bronze with over 32 years of experience in quality and management systems, continuous improvement, and Lean/Six Sigma activities. He is as a Certified Quality Engineer and held previous roles as a Process and Methods engineer as well as a



Senior Supplier Quality engineer. About Franklin Bronze Precision Components Franklin Bronze Precision Components manufactures investment castings for glass container and many other industrial sectors. Franklin Bronze provides high-quality, consistent products supported by technical expertise, in-house tooling & machining, and automated processing. Effective August 29, 2014 Franklin Bronze & Alloy Company, Inc was acquired by Wall Colmonoy Corporation.” August 23, 2017



California Heat Treating Costs

While California boasts one of the largest economies in the world and is one of the nicest states in the union it is certainly not a cheap area for manufacturing as this article points out. The Inland Empire referred to in this article is an area of southern California. This news item caught our eye because as you can see one manufacturer in the region claims he was forced to outsource his heat treating to Michigan because of the high cost of heat treating in the state due to environmental regulations. We know for a fact that this is to some extent true but whether it raises the cost of heat treating so high that it make sense to ship product 3,000 miles to be heat treated? We have our doubts. Having said that though Aerocraft Heat Treating in CA has struggled over the past number of months due to concerns about harmful emissions, claims which the company vigorously denies. Over the next few weeks we have interviews with two heat treaters in the state coming up, we will have to ask them whether they feel environmental regulations are a real challenge. August 22, 2017

“Manufacturing remains a bright spot in the Inland Empire, where the sector is doing better than in the rest of the state and the nation. For example, manufacturing jobs in San Bernardino County grew by 13 percent from 2009 to 2016 — from 49,000 to 55,500 jobs — according to Robert Kleinhenz, economist for The Center for Economic Forecasting and

Development at UC Riverside. During the same period, the nation saw 3.4 percent growth in manufacturing jobs, and California had just 1.5 percent growth. The Inland Empire Economic Partnership's latest Quarterly Economic Report, released in July, shows that manufacturing employment for the two-county region hit 100,000 in June, up by 1,300 jobs, or 1.3 percent, from June 2016. John Husing, IEEP's chief economist, and Kleinhenz agree that one reason for the growth of Inland Empire manufacturing is that companies are relocating from Los Angeles County because land is cheaper here and they can design new plants that incorporate today's more automated manufacturing processes. That's a double-edged sword, of course. Automation will endanger many of the new jobs in 10 or 15 years, as Husing has noted. The Inland Empire is also attractive to manufacturing companies because they can hire workers for lower pay here than in the coastal counties, Husing said. Employees save time and money by giving up a long commute to L.A. County, so they're willing to settle for somewhat lower pay. And local governments in the two-county region are receptive to manufacturers needs. That's not true of state government. Husing has long complained that state environmental regulations hamstringing manufacturers and the blue-collar workers they employ. That came up on a recent multi-day tour by Rep. Norma Torres, D-Ontario, of Inland Empire manufacturers to hear about the challenges they face. One manufacturer told her his company has to outsource a specialized heat treatment process to Michigan, where it can be done for a fraction of what it would cost here because of California's strict environmental restrictions."



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Can-Eng Press Release

“Can-Eng Furnaces recently completed commissioning an electrically heated furnace line addition to a leading bearing manufacturer’s existing production line. Responsible for producing Planet Shafts and Pump Vane Products, the line now features a compact 1,000 lb/hr atmosphere temper and soluble oil system for rust prevention; designed for minimal impact on floor space. Can-Eng Furnaces’ Mesh Belt Heat Treatment Technology continues to be a stalwart performer of the Global automotive Heat Treatment Industry and an integral element of Can-Eng’s Heat Treating Technologies for the Automotive, Aerospace, and Steel Industries.” August 22, 2017



Monday Morning Briefing

To start off we see that metallurgist **Ehsan Ahi** has made a move from **Linamar Gear** in Guelph, Ontario, Canada to **Bell Helicopter** in Mirabel, Quebec where he will be the corporate metallurgist. Linamar in Guelph has probably the largest batch IQ capacity of any captive heat treater in North America, Bell Helicopter actually does very little heat treating in house preferring to send it out. **Armorworks** in Chandler, AZ still has a few vacuum furnaces available. If you recall we mentioned this company quite some time ago when they

were closing down the manufacturing mainly because they had something like 15 vacuum furnaces available. There are still a few left, we will have more details in the near future. In Michigan, commercial heat treater **Heat Treating Services** (owned and run by the Hynes family and one of the largest in the state which is saying something) is looking to the future by acquiring some adjacent land. Some property once owned by General Motors is being developed but the owners have no need for all the land with the result that the rest has been sold to Heat Treating Services. We have this photo of Steve Hynes, one of the owners of the company. **August 21, 2017**



Cargill Heat Treat out in Oklahoma City, Oklahoma has added some more capacity. The founder and owner Mr. Steve Cargill earlier this year installed a 48" X 48" X 36" Beavermatic batch IQ furnace which has a capacity of 8,000 pounds. According to Steve he is able to keep it full which is impressive, a furnace this size has a very large appetite. We have this press release from **Global Furnace Materials** a supplier of metal products for the heat treating industry. *"Global Furnace Materials believes in supporting and giving back to the communities that have shaped their company. In line with their mission to give back, GFM will be donating 1% of all profits to Warrior 360, a non-profit Veteran support program. **Nick Suchoski**, owner of GFM, a former soldier in the US Army, was introduced to Warrior 360 by his former 1st Sergeant in the 82nd Airborne division. After a couple conversations with the management team at Warrior 360, a decision was made to donate 1% of all profit to Warrior 360. "I believe in giving back to those that made me who I am. My core values were developed through my time in the military, so I feel compelled to give back to the warrior community. My time in the military is the main reason for my successes, both personally and professionally, so this is my way to say thank you, by helping these warriors and their families soften some of the hardships that they have endured."*

Nitrex Metal Inc. Our friends at Nitrex Metal in Montreal have this to tell us today about a system they recently commissioned. “A European manufacturer of hard rock drilling tools has contracted to purchase an NX-820 gas nitrocarburizing (FNC) turnkey installation, complete with furnace, control system and technology, from Nitrex Metal Inc., www.nitrex.com. The customer found in Nitrex a dependable partner who could provide a reliable technology for improving the wear and sliding resistance of its products. The selected



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SECO/VACUUM Technologies; 8 Furnaces; 2 Months: SECO/VACUUM Schedules Open House SECO/VACUUM Technologies, the newest company in the SECO/WARWICK Group of companies, reports a strong initial entry into the North American vacuum heat treating market. To-date, the new company which officially launched in early 2017 has received orders for eight new vacuum furnace systems in its first two months of existence. Mr. Warwick also announced that the company will host an open house in the second quarter of 2018. The open house will mark the opening of the company’s Vacuum Technology Showroom which will house production-scale demonstration equipment with the capability of running sample loads from customers. Exact dates of the open house will be released soon pending the delivery and installation of the company’s keystone product, a VECTOR® vacuum furnace. Backed by the

industry's most extensive R&D program to help validate current processes and push the boundaries of vacuum thermal processing, the company is dedicated to helping customers succeed.

Paulo/Chris Benash. *“Paulo welcomes Chris Benash to our Corporate Engineering team. Chris will be instrumental in working closely with the plants leading continuous improvement projects and sharing of best practices. Chris has over a decade of experience in the commercial heat treating industry. He has maintained and programmed a wide variety of heat treating equipment, implemented lean methods, and enhanced preventative & predictive maintenance programs. Chris’ experience allows him to contribute immediately towards our strategic goals and the creation of our future picture. Chris will report to Project Engineering Manager, Scott Herzing. Scott commented, “I’m excited to have Chris on the team, his experience with equipment, lean implementation, preventive/predictive maintenance, and continuous improvement activities will be a great addition to our team. I look forward to Chris’ leadership of our continuous improvement program.”*



Ipsen Organizational Changes

As Ipsen focuses on supporting the industry, several strategic changes will be made in the company's organizational structure to strengthen their position as the leading global provider of integrated heat treatment solutions. “We are in an exciting period of growth for Ipsen, which has been built on both innovation and exceeding customer expectations. The Ipsen Group focus ensures that we continue to strengthen Ipsen performance in all global markets, delivering the same quality and performance anywhere in the world,” said Geoffrey Somary. As part of this growth, Somary will leave his USA position and focus fully on his Group responsibilities with CEOs at all entities (Europe, USA, China, Japan and India) continuing to



report directly to him. Somary started at Ipsen in 2005, and for the past four years, has held the dual responsibilities of Ipsen USA CEO and Ipsen Group COO. Jake Hamid, who has been with Ipsen since 2007, will also leave his position as Ipsen USA COO and move into the position of Ipsen Group Director of Global Product Development and Manufacturing.

Ipsen USA is pleased to announce that Patrick McKenna is promoted to Ipsen USA President &



CEO, responsible for all entity functions including Sales, Engineering, Operations, Service, Finance and Human Resources. McKenna states, "My focus from day one will be on delivering the highest quality products and services to our customers and ensuring that the established Ipsen performance culture continues far into the future." McKenna has both undergraduate and graduate degrees in engineering and has served on the Metal Treating Institute Board of Directors for 10 years (2016 President). He worked at Ipsen as a Mechanical Engineer for four years before leaving to co-found a successful commercial heat treating and brazing company. He divested his interest in that company in 2015 and returned to Ipsen as Vice President of Sales.

Other promotions include Pete Kerbel to Ipsen USA Vice President of Sales, who takes on responsibility for sales of new equipment, retrofits and parts.

Kerbel started at Ipsen in 2008 and most recently was the Director of Aftermarket Sales, which when combined with service, totals nearly 50% of annual sales for Ipsen USA. With 2017 expected to be the eighth straight year of growth for Ipsen USA, there is a new generation of experienced leaders that have earned their promotions (in addition to those listed above). The expertise and commitment of these individuals, and the entire Ipsen Team, will allow them to continue guiding Ipsen forward down a winning path – a path that always focuses on innovation and ensuring one satisfied customer at a time. **August 18, 2017**

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Pictures From The Past

As you would expect over the almost 20 years that “The Monty” has been around we have accumulated more than our fair share of pictures from the heat treat industry which we share on a regular basis. Here are three from days gone by. If you have a picture from the past you would like to share we are interested. **August 18, 2017**



Gary Berwick on the left (Now Dry Coolers), Dennis Wagen, Jeff Smith on the right (SBS)



Left to Right; Gord Montgomery, Bill Keough (Ex-owner AFC-Holcroft), Bill Disler (CEO AFC-Holcroft)



Tom Wright on the right (Wirco)

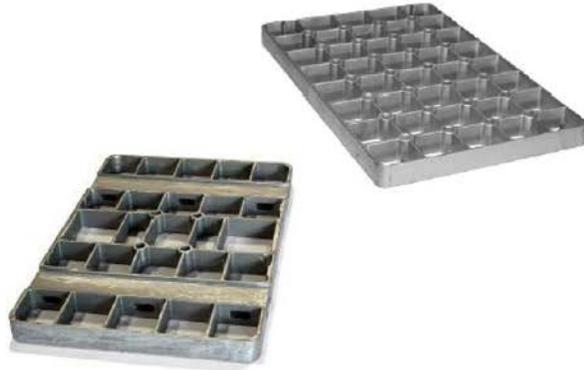
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Tremec Corp./Wixom Michigan

A year ago **Tremec**, an auto parts supplier based in Mexico announce a brand new plant in the Detroit, USA area. Plans have come to fruition and the new location is on the brink of opening. A burning question in our mind is whether this location will have heat treating in house. The new plant is over 100,000 square feet which is certainly large enough to house a respectable heat treated and the Tremec location in Queretaro, Mexico which we have visited in the past certainly boasts a very large in house heat treat department which includes batch IQ furnaces and pushers. We honestly don't know whether this location currently has heat treating or will in the future but when we find out you will be the first to know. **August 17, 2017**

*“A Mexico City-based automotive supplier will invest \$54 million to establish a manufacturing facility in Wixom, a move that will create 133 jobs, the **Michigan Economic Development Corp.** announced Thursday. **Tremec Corp.**, a wholly-owned business unit of **Kuo Group**, plans to lease and equip a new building at 46643 Ryan Ct. to serve as the company's U.S. headquarters, sales and technical center, as well as an advanced automotive transmission*

production operation, according to the MEDC. The project represents the company's first major manufacturing operation in the U.S. Tremec, founded in 1964, established operations in Michigan in 1975 and today has 27 employees at its technical and sales office in Plymouth Township. The 1,450-employee company produces transmissions, torque components and powertrain products for high-performance vehicles, including passenger, commercial and heavy duty vehicles. The new facility will allow Tremec to make investments and create jobs related to the design, development and manufacture of transmission and other powertrain products for the North American automotive and heavy equipment sectors, according to the MEDC."



Different media for quenching metal explained

Commercial Heat Treater Paulo from time to time sends out interesting summaries about various aspects of heat treating-this is one. [August 17, 2017](#)

“Quenching metal parts is a critical step in heat treating, and it’s only gotten more complicated over the years as an increasing variety of specified material properties drives the development of the differing techniques that deliver them. Here, we discuss the popular media in use in the industry and explain how metallurgists choose which one is best suited for certain parts.

Different media for quenching metal explained; Quenching is one of the critical stages in the heat treatment because it’s during that process that added hardness is locked into metal parts. The concept is relatively simple: Heat a metal and then rapidly cool it to make it harder. But in terms of the chemistry involved, *the process is complex* and trade-offs abound as metallurgists must decide which quenching medium and method will achieve the specified finished qualities.

Severity of quenchant; The severity of a quench refers to how quickly heat can be drawn out of a part. Different quenching media have different degrees of severity. Caustics are the

most severe quenchants, followed by oils, then salts and, finally, gases. The makeup of metal parts, the parts' cross sections and the specified hardness to be achieved dictate which quenching medium is used. Generally, low-hardenability parts made from carbon steel and low-alloy steel require more severe quenches to achieve a specified hardness. High-alloy steels, which are much more hardenable, are best quenched in less severe media.

Caustics; The most severe quenches are executed with water, brines and caustic sodas. While these quenchants can pull heat out of parts more quickly than other quenching media, faster isn't always better. Quenching in caustics dissipates heat so quickly that metal parts are at risk of cracking and warping due to the drastic variation in temperature between the part's surface and its core. In addition, workers must take special precautions when using caustic materials because they're harmful when inhaled or exposed to skin and eyes.



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Oils; Quenching metal in oil is the most popular method because it is relatively severe but with a diminished risk of cracking and warping. In addition, a wide range of parts quench well in oils because the temperature and blend of quenching oils can be adjusted to suit desired end results.

For example, if a part's cross section and hardenability mean it's best suited for fast quenches, "fast" oils are used. These oils are formulated to extend the amount of time during which the highest rate of cooling takes place. Quenching in fast oils is best suited for low-carbon steels and low-alloy parts. As the method's name indicates, these quenches do not take long. Conversely, sometimes cooling needs to be slowed. Hot oils—which are kept at higher temperatures—cool metal surfaces, but not so quickly that a part's core temperature and surface temperature differ too widely. High-alloy parts with intricate designs quench well in hot oils, as the method reduces the risk of warping and cracking associated with differences in surface and core temperatures. Quenching in hot oil is a slower process compared to quenching in fast oil. Because oil is flammable, workers must know the flashpoint of the oil in use as well as the load weight and surface area of the products in the workload to avoid fires during quenching.

Molten salt; Quenching metal parts in molten salt (also called salt baths) comes with a further reduced risk of distortion or cracking of parts because they're hotter than hot oils.

This means cooling is more controlled and uniform compared to colder, faster and more severe quenches. The hotter the quenchant, the less severe the quench. The less severe the quench, the lower the risk of distortion. Different mixtures of salts have different melting points and working ranges, offering added versatility as a quenching option. On the other end of the spectrum, some salt mixtures have high melting points and working ranges and can be used to heat parts. Salt baths are a long-lasting heat treating and quenching solution as long as they're properly maintained. This includes ensuring oxides are regularly removed from high-heat salts and sledging out high-heat salts that contaminate quench salts on salt-to-salt lines.

***Gas; Quenching metal via gas** in vacuum furnaces has become more popular for parts that require high hardness and specific finishes with significantly reduced risk of distortion. In gas quenching, parts are sealed in a vacuum chamber before being blasted with gases. The rate of cooling of a part can be precisely controlled by adjusting the pressure and speed at which the gas is delivered. Additionally, since gas quenches occur in vacuum chambers, parts emerge significantly cleaner compared to other quenching media. Nitrogen is the most popular gas quenchant due to its relatively low atomic mass, wide availability and low cost. Helium and argon are also used in gas quenching. Specified material properties dictate which gas quenchants are to be used. High-alloy tool steels and jet engine turbines are common examples of parts often quenched in gas.”*



ThermoFusion Adds Austempering and Marquenching Capability

“ThermoFusion, the pre-eminent supplier of brazing and heattreating services in Northern California, has announced the expansion of their heattreating services. ThermoFusion now offers marquenching and austempering, in addition to their annealing, hardening, vacuum and hydrogen services. Marquenching and austempering use a less aggressive quenchant, reducing the cooling rate slightly, and reducing distortion caused by rapid temperature change (thermal shock). In high carbon material, these alternative processes allow for the

formation of bainite instead of martensite, which allows spring steels to remain “springy” as they get hard. “Marquenching and austempering are not readily available from California heat treaters, due to their complex process parameters. We’re proud that we’re able to offer these expanded capabilities to our customers.”, said Glen Ottinger, President of ThermoFusion. For more information, contact Nils Kjell, Director of Sales & Marketing, at 510-782-7755 x225 or nkjell@thermo-fusion.com. Visit ThermoFusion on the web at thermo-fusion.com.” August 16, 2017



Where Are They Now? Jeff Bell

We had several dealings with Jeff Bell over the years, during his times with Hinderliter, Lindberg and subsequently Bodycote. We always found him to be a friendly, competent guy which was why over his 38 years in the industry he held positions such as Regional Manager for Hinderliter (now Bodycote), Integration Manager for the acquisitions of Brasimet in Brazil by Bodycote and subsequently Group Operations Director for Bodycote Oklahoma, Texas and California. We lost track of him some time ago but just ran across him in a completely different industry. Apparently after he left Bodycote Jeff completely left the heat treating industry for the retail business, namely Home Brewind and Grilling. Now that is quite a change of direction. **August 16, 2017** _

Unitrat Tratamento Termico, Brazil

Boasting one of the ten largest economies in the world Brazil has long had a large heat treating industry both captive and commercial. The past few years have not been kind to the heat treating industry in the country and while things are improving Brazil has always had it’s own special challenges. For instance Bodycote invested heavily in their plants in Brazil but at the end of the day they never proved to be a profitable as hoped

for (profitable at all might be the question) and the company exited the Brazilian market some time back. We at “The Monty” have always had a fascination with the country so we were interested to learn recently that some ex Bodycote employees have been hard at work growing one of the local heat treaters. Marcio Magalhaes, who was the GM at the Bodycote, Jundiai Plant and Cassiano Horta who was the GM at the Campinas plant bought a small, struggling heat treat by the name of Unitrat Tratamento Termico and have turned it into a growing shop concentrating on continuous furnace. We look forward to some more details about the company but we leave you with these photos from the Bodycote era in Brazil. **August 15, 2017**



P.H. Heat Treatment/South Africa.

The article below from commercial heat treater **P.H. Heat Treatment** in South Africa (one of the largest in the country) caught our eye as in just 3 short weeks “The Monty” will be visiting this plant along with several others in South Africa and reporting on the heat treating industry in that country. “Since it obtained its licence from heat treating and manufacturingservices company Nitrex, in Canada, heat treatment specialist P.H. Heat Treatment provides the automotive industry with controlled nitriding and ferritic nitrocarburising processes for automotive components, which form part of the Nitreg® range. “The difference between these processes and conventional gas and salt bath nitriding is

the ability to control the nitride (white) layer hardness and thickness, overall case depth and hardness, resulting in excellent quality and repeatability. Further, each Nitreg® treatment is tailored to the requirements of each type of component,” says P.H. Heat Treatment managing member **Cecil B Zlotnick**. He adds that these processes are all carried out at low temperatures between 450 °C and 600 °C, compared with conventional case hardening. The Nitreg® processes result in hard-wearing, anti-seizure and corrosion resisting surfaces.

Zlotnick says that all **automotive components** are subject to stringent quality **testing** after heat treatment, supported by a fully equipped metallographic laboratory. “Here **components** or test pieces accompanying them are checked for case depth, microhardness and microstructure.” He notes that the Nitreg® process is applied to **automotive components** such as actuator housings, **bearings** and needles, brake pistons, camshafts, crankshafts, clutch hubs, engine **valves**, gears, piston rings, rocker arms, fuel injectors, seat tracks, wiper shafts and shock absorbers. P.H. Heat Treatment received the licence from **Nitrexin** 2004 and has been providing high-quality heat treatment on **automotive components** since then. Zlotnick further points out that, if manufacturers wish to extend or **initiate high technology component manufacturing** currently not produced in the country, P.H. Heat Treatment is able to support them with its **expertise** in a range of heat treatment. The company has also provided conventional processes for various industries, including **automotive**, such as neutral hardening, atmosphere normalising, carbon restoration, various case hardening treatments (**gas** carburised and carbonitrided), annealing and tempering, as well as subzero treatment.” August 15, 2017



Alcoa Commissions 3 “Hot Box” Systems

“Alcoa, Warrick IN, a major producer of sheet aluminum for ring pull cans, etc. have recently commissioned three Phoenix™ ‘hot box’ systems for monitoring the temperature profile of aluminum slabs through their pusher preheat furnaces. Each system is embedded into a slab

and gathers temperature data from thermocouples set deep within the product to ensure all parts of the slab have reached the specified rolling temperature, maximizing efficiency of the preheat operation and avoiding excessive roll wear. A 10 channel data logger with two way RF capability transmits the temperature data out of the furnace to a PC running Phoenix™ 'Thermal View' software, allowing complete analysis of the process. As these processes are long duration and high temperature, the thermal barriers supplied used evaporative technology (evaporating water) to protect the data logger. Because the aluminum slabs rotate through 180° as they enter and exit the pusher furnace, the Phoenix™ systems were engineered to retain the evaporating water during the rotation, maximizing the thermal performance. The systems were designed to fit within the boundaries of the aluminum slab, and allowed easy access to the data logger when loading and unloading from the hot slab. For more information visit www.phoenixtm.com" August 15, 2017



Monday Morning Briefing

We start off in the UK with the Contract Heat Treat Association (The MTI Equivalent in the UK) with this announcement; *"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 Engineering & Heat Treatment Industry Conference/Exhibition"** on 13 October 2017. Staged in England's historic Kenilworth, initial information about the event can be found at www.sea.org.uk/events/index.htm/surface-engineering-heat-treatment-industry-conference-2017. Offers of presentations on advances in industrial heat treatment processing will be welcomed by CHTA's Alan J Hick at mail@chta.co.uk."*

Commercial heat treater **Paulo** in the US has these two mentions; *"**Dustin Lawhon** joined Paulo July 31st. As our [Nashville plant grows](#) so does the customer base. Dustin is tasked with*

strengthening our partnerships with existing Nashville customers and supporting them as they grow. Dustin will be based at the Nashville plant and reports to William Rassieur, Vice President Sales. Paulo is happy to announce **Emily Rassieur** is joining us effective July 31st. Her role, HR Management Associate, is a new one which is designed to provide exposure to a variety of HR disciplines and provide management training and experience. She will be based in St. Louis at Paulo Corporate Headquarters.” Commercial heat treater **Byron Products** in Fairfield, Ohio is adding some more mesh belt processing capacity in the form of an Abbott furnace.



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If you are in the market for furnaces for processing aluminum wheels there is an auction coming up which includes a number of aluminum ovens all made by **Major Engineering** in Australia. The only catch is that the auction is in Australia which is not going to be of interest to most people. Now here is a scary sight, heat treat rep **Marty Keylon** in CA assembling flow meters! Now that we have had our fun at Marty’s expense this is what he has to say; “I spent a week in Milwaukee “Wauke

Engineering” and Cincinnati “UPC United Process Controls” doing some rep training. I learned all about Instruments “well I knew a little” UPC’s many different models and all the Oxygen Probe’s they have. Spent some time in the factory building probes and looking at all the different processes they do to calibrate and test the probes and instruments.”

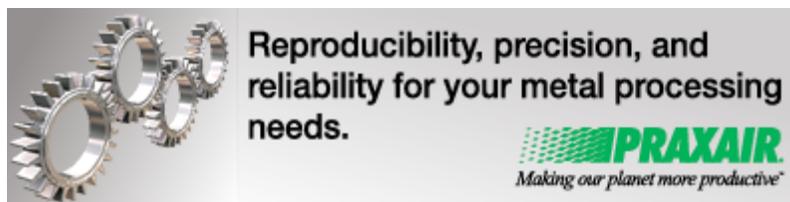


Induction company **Ajax TOCCO Magnethermic** has a new manager for Tubular Products; “Ajax TOCCO Magnethermic (ATM) announces the promotion of **Donald Gibeaut** to “Manager Tubular Products.” Don has worked in the induction industry for over

36 years and has achieved great success in the pipe and tube markets. In his new position, Don will work with all ATM brands to promote and increase market share in the tubular industry including Heat Treat, Quench and Temper lines, Emmedi welders, coating systems and all other associated tubular processing products. Don has a background in Electrical Engineering from Ohio State University and has participated as FIA Instructor, Tenaris University Instructor and presented many papers for AMM, FIA and Brazil Senafor Conference.”



“Solar Manufacturing Receives Vacuum Furnace Hot Zone Improvement Patent; A new U.S. Patent, No. 9,702,627 B2, was awarded on July 11, 2017 to Solar Manufacturing, Inc. for an innovation in vacuum furnace hot zone design. This hot zone improvement centers on the configuration of heating element supports, providing for simpler, streamlined manufacture of the support assembly. The new design further provides for easy assembly and disassembly of heating elements, a significant improvement over prior designs. Inventors are Robert Wilson, Solar Manufacturing’s VP of Engineering, and Mark Hughes, Senior Design Engineer. Copies of U.S. Patent No. 9,702,627 B2 may be obtained by visiting www.uspto.gov. For additional information about Solar Manufacturing, visit www.solarmfg.com, or call Keith Reim, Corporate Marketing Manager, at (215) 721-1502.” August 14, 2017

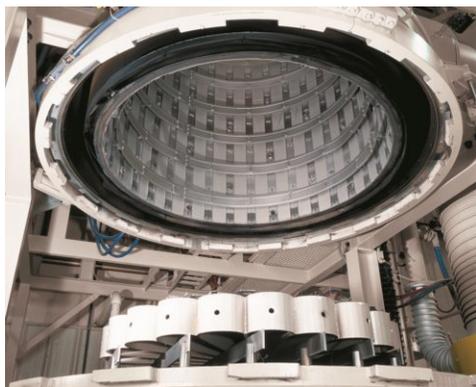


Ipsen Press Release

Shipping 15 atmosphere and vacuum furnaces last quarter, Ipsen USA continues to provide diverse, effective heat-treating solutions to customers around the world. This equipment was sent to China, Hong Kong, India, Japan, Saudi Arabia and the United States – all in support of the Aerospace, Commercial Heat Treating and MIM industries. The shipments included:

- Two large, vertical (bottom-loading) MetalMaster® vacuum furnaces, each with a 120" (3 m) diameter work zone and 10,000-pound (4,500 kg) load capacity.
- Five standard TITAN® vacuum furnaces complete with PdMetrics® (Ipsen's cloud-based predictive maintenance platform that provides real-time diagnostics, text alerts and peace of mind).
- Debind and sinter vacuum furnaces for the MIM industry.
- ATLAS integral quench atmosphere furnace, which was delivered six weeks after order placement.
- Several sophisticated, custom-built vacuum furnaces that will process parts for the Aerospace industry.

Several customers also took advantage of the ICS (Ipsen Customer Service) Team's aftermarket support offerings, ordering spare parts kits to help keep the furnace running smoothly. Ipsen's global ICS Team provides comprehensive, ongoing support throughout the equipment's life span for any brand of furnace. This includes facilitating system

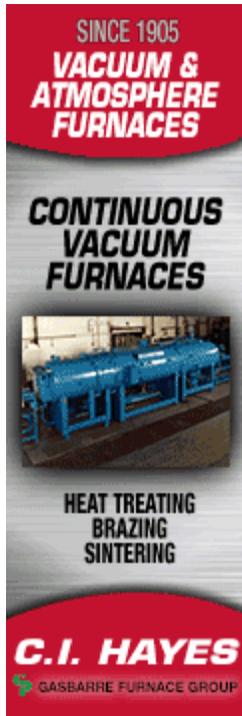


installations, as well as providing startup assistance, expert training, spare parts and maintenance programs. You can learn more about the extensive support and training they offer at www.IpsenUSA.com/ICS. For immediate technical support, to order parts, schedule service and more, call the Aftermarket Support Helpline at 1-844-Go-Ipsen (1-844-464-7736). **August 11, 2017**

Why nitriding steel is growing in popularity/Paulo

Summary; Nitriding has continued to evolve from its roots of accidental discovery in early 20th century metallurgy. Today, the process is becoming chosen for a broadening variety of parts and applications across industries due to its relatively low temperature and precision.

Why nitriding steel is growing in popularity; A case-hardening technique in use since the early 20th century, nitriding steel has been an effective lower-temperature heat treatment for workpieces since even before engineers and metallurgists fully understood it. Its appeal lies in the ability to harden a part by dissolving nitrogen into its surface without austenitizing, thus all but eliminating the risk of distortion. That opened the door for improving an ever-widening variety of parts. Its popularity grows as the industry realizes the technique is effective across a broad variety of parts and applications.



Origin of nitriding steel; Metallurgist Adolph Machlet developed nitriding by accident in 1906. That year, he applied for a patent that called for replacing atmosphere air in a furnace with ammonia to avoid oxidation of steel parts. Shortly after he sent the patent application off, he noticed that treating parts in an ammonia atmosphere at elevated temperatures caused a “skin, casing, shell or coating” to develop around a piece that was extremely difficult to corrode or tarnish.

Also in 1906, German metallurgist Adolph Fry led a research program during which he made the same discoveries Machlet made. He also noticed that adding alloying elements to iron heavily influenced the results of nitriding. Machlet’s patents for nitriding in the U.S. were approved in 1913 and 1914; Fry received patents in Germany for his process in 1924.

How it works; The process of nitriding steel begins by heating parts in a furnace to a relatively low temperature (between 950 and 1,100 degrees Fahrenheit, depending on a part’s intended use) compared to other heat treatment methods. At these low temperatures, the iron remains ferritic—that is, the phase changes that alter the structure of the iron do not occur. But the temperature is high enough for ammonia molecules injected into the furnace to break apart once they contact the workpiece. That breakup releases nitrogen atoms, which dissolve in the steel and form the desired diffusion zone. A minimal intermetallic compound layer also forms. One benefit of nitriding steel as opposed to using other heat treatments is that modern

nitriding equipment allows for computer-controlled injection of ammonia to achieve varying case depths. Another is that parts are slow cooled rather than cooled rapidly via quenching, a process that further limits the risk of distortion. The precision of the process is such that parts' intended qualities are achieved in a single step; they do not need to be softened down to specifications via tempering.

Increasing popularity; *Because nitriding steel workpieces offers superior surface qualities with minimal risk of distortion, the process has become a mainstay treatment of parts across a variety of industries:*

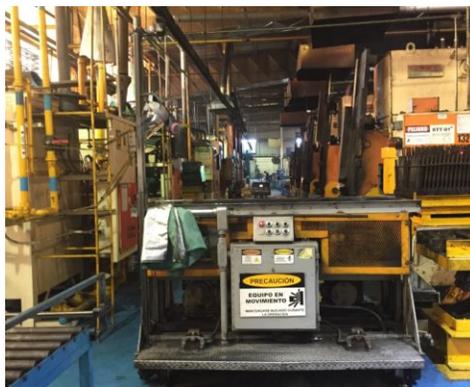
- Manufacturers of automotive parts choose to nitride gears, crankshafts and valve parts because the process imparts hard diffusion layers to the part surface. The increased fatigue strength resists the formation of surface and subsurface cracks.*
- Nitriding has become an attractive heat treatment option for makers of tool steels and forging dies because it imparts added surface hardness without the risk of distortion and resists tempering on forging dies and soldering on aluminum casting dies.*
- Makers of firearms nitride components such as gun barrels and slides because the process decreases friction coefficients, increases wear resistance and fatigue strength and imparts moderate corrosion control.*

Expect to see the popularity of nitriding to continue to increase. The techniques and technologies in play will only get better; the process will only become more precise. If engineers haven't considered new material and design possibilities that can arise from specifying nitriding, now is a good time to start. August 11, 2017



Linamar De Mexico, S.A.

Auto parts giant Linamar has just closed the heat treating department at their facility in Ramos Arizpe, Mexico. This location was founded in 1998 and has always included a fairly large captive heat treating department consisting of a number of Lindberg batch IQ furnaces, a picture of which can be seen here. The heat treat department was always a well run asset for this location however with a change in the material the heat treating department became redundant. The furnaces have all been sold and are going to another company in Mexico. **August 10, 2017**



AMG Financial Results

Not familiar with the name **Advanced Metallurgical Group**? Perhaps heat treaters will be more familiar with ALD and ALD Thermal Treatment of which AMG is the parent company. The group just announced their second quarter financial results a summary of which can be found here. **ALD Thermal Treatment** operates three commercial heat treating facilities, one in Germany, one in Mexico and one in the US which is also the single largest commercial heat treat in the US. **ALD** the furnace company offers vacuum carburizing systems, vacuum nitriders, and vacuum furnaces amongst other offerings. **August 10, 2017**

“AMG Advanced Metallurgical Group N.V, Amsterdam, the Netherlands, has reported fiscal results for its second quarter 2017. According to the company’s report, it recorded a total revenue of \$262 million for Q2 2017, up 6% from \$248.3 million in the same period 2016. EBITDA for the second quarter 2017 was \$31.9 million, a 22% increase from \$26.0 million in the second quarter 2016. Net income attributable to shareholders slightly decreased to \$13.1 million in the second quarter 2017 from \$13.4 million in the second quarter 2016. Dr Heinz Schimmelbusch, Chairman of AMG’s Management Board and CEO, commented, “We are very pleased that AMG’s strong cash flow generation for the first six months of 2017 enabled the company to end the quarter with net debt in line with the prior year end, despite substantial capital investments in the first half of 2017 in AMG’s lithium project in Brazil, and titanium aluminide expansion in Germany.” **AMG Engineering;** AMG Engineering designs, engineers, and produces advanced vacuum furnace systems and operates vacuum heat treatment facilities, primarily for the transportation and energy industries. The segment reportedly signed \$76.9 million in new orders during the second quarter 2017. According to AMG, the Engineering segment continues to experience strong demand for turbine blade coating, Powder Metallurgy and plasma remelting furnaces for the aerospace market and heat treatment furnaces for the automotive market. *“The strong results in AMG Engineering reflect our efforts to diversify our product offerings in recent years, including the introduction of powder metallurgy and SyncroTherm in-line heat treatment furnaces,”* stated Schimmelbusch.”

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Metal Treating & Research Company Fire

Commercial heat treater Metal Treating & Research Company in Denver, Colorado suffered a very serious fire recently, the details such as they are, are below. Metal Treating & Research is one of the few commercial heat treaters and certainly the largest in Colorado, a beautiful state but not known for manufacturing.

“ADAMS COUNTY – A metal treatment facility was evacuated Wednesday afternoon as crews from multiple agencies worked to put out a fire. Adams County Fire tweeted about the blaze at around 1:30 p.m. As of 3:30 p.m., firefighters said the blaze was mostly out, but crews are still working on hot spots. One firefighter is being evaluated for minor injuries. Smoke was seen billowing from the building, and at least one wall suffered heavy damage.” August 9, 2017



Mainstream Engineering/Rockledge, Florida

“A controlled atmosphere aluminum brazing (CAB) system has been installed by Mainstream Engineering. This system will be used in the manufacturing of advanced heat exchangers and cold plates for military, government and commercial applications. This system allows Mainstream to braze a wide assortment of very large cold plates and heat exchangers using a variety of aluminum alloys. On a selective basis, Mainstream will also be offering tours of their

CAB facility to those with an active interest in aluminum brazing. According to Mainstream Engineering's Technology Leader for Thermal Control, Dr. Josh Sole, "We're pleased to expand our research and production capabilities with the addition of a new system that enables us to process a wide variety of products quickly and efficiently." SECO/WARWICK Corp. Managing Director Jonathan Markley remarked, "SECO/WARWICK is committed to delivering brazing technology that provides our customers with the flexibility they need to meet the ongoing challenge of adapting to new alloys and customer requirements."

Based in Rockledge, FL, Mainstream Engineering is a solution-oriented business specializing in manufacturing, and research and development. They have been manufacturing equipment and performing R&D for most U.S. government agencies as well as many government prime contractors for over 30 years. They are new to the CAB industry and just purchased their first CAB furnace to produce heat exchangers and electronic cold plates that will integrate with their high-heat-flux active thermal control systems. Bringing the CAB system in-house improves quality by providing process control of all variables, ensures confidentiality with sensitive military solutions, and lowers costs and lead times.

SECO/WARWICK's Universal Batch CAB line is a standard CAB product offering. This line offers versatility through its ability to braze products in both horizontal and vertical orientations. It provides tight temperature uniformity, atmosphere integrity, and can be used as a batch R&D line for periodic production or as a production line working 24/7. It also has faster heat-up rate abilities which will allow braze temperatures for trials to be prepared within hours instead of full shifts." **August 9, 2017**



ECM USA Vacuum Furnaces

ECM USA Vacuum Furnaces, have recently purchased a PhoenixTM through furnace temperature monitoring system for their new 'Synergy Center' R + D plant in Pleasant Prairie, Wisconsin. The system will be used in their NANO furnace for developing heat treatment recipes for customer products, furnace development, TUS surveys, and commissioning at customer plants. The PhoenixTM system will operate in low pressure carburizing and carbonitriding environments using a PTM12 series 20 channel data logger to store and transmit (via RF) data directly from inside the furnace. The RF telemetry used in this system is capable of two way transmission, allowing reset and data 'catch up' when required. The PhoenixTM system is particularly suitable for temperature profiling in LP carburizing furnaces where trailing thermocouples are time consuming and difficult to use, as it can be charged and discharged to the furnace as a normal load. August 8, 2017

Related technical paper: <http://www.phoenixtm.com/assets/Uploads/industry-application/Challenges-and-Benefits-of-Temperature-Profiling-in-the-Heat-Treatment-Industry.pdf> For more information visit www.phoenixtm.com



PhoenixTM TS02-130-1 'hot box' system with 20 channel data logger)

Systems for furnace surveying (AMS2750 & CQI-9)



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PhoenixTM
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Automotive Corporation's Bearing Division Bolsters Production

A global automotive corporation's American based bearing division placed an order with Can-Eng Furnaces International for a mesh belt furnace system for heat treating thrust races, retainer/cages, and washers. The new, CQI-9 compliant production line features built-in flexibility that allows for both neutral hardening and carburizing. Included with the system is: An atmosphere controlled hardening furnace, salt quench, two-stage post-quench washing system, salt reclamation unit, temper furnace salt holding tank and CAN-ENG's Level 2 SCADA system – PET™. The electrically heated system utilizes unique loading combinations on its belt to meet production requirements while achieving the customer's required low residence times for the system's hardener and quench. Additionally, through the integration of CAN-ENG's PET™ System, the automotive supplier gains access to vital tracking of products' status, detailed process data for continuous process improvements, comprehensive equipment diagnostics, cost analysis, & inventory management. August 8, 2017



Canadian Civic Holiday.

Due to the national Canadian Civic Holiday we will be resuming regular updates on Tuesday August 8, 2017. August 7, 2017

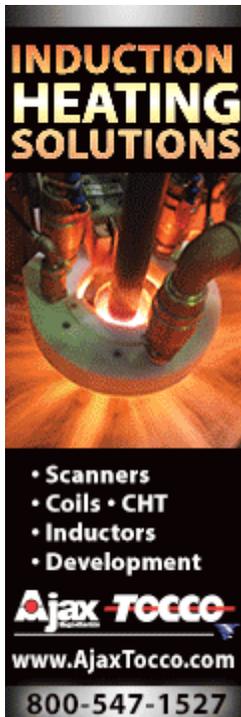
Press Release from Waukesha WI

To this brief press release we will also say that Therm-Tech is one of the largest commercial heat treaters in the US Midwest with over 100 employees. August 4, 2017

“Therm-Tech of Waukesha successfully completed the API Q1 audit from the American Petroleum Institute. The API Q1 quality standard is developed and published by the American Petroleum Institute. API Q1 certification is intended for organizations that supply products and services to the oil and natural gas industries. API Q1 is related to the ISO 9001 standard and places a heavy emphasis on Risk assessment, risk management, management of change and contingency planning. Therm-Tech is one of the only commercial heat treating companies in the US to achieve this certification.”

Bloom Engineering Press Release

“In an effort to allow for better focus on key industry sectors of aluminum and steel, Bloom Engineering has reorganized its sales team into two industry focused teams. Don Whipple and Scott Brown will head the aluminum and steel teams respectively. Each team will focus



on its own area of expertise, and will be able to provide better support to existing industry customers. Furthermore, it will be easier to coordinate efforts to capture more market share and to bring in new customers. Mr. Whipple has spent his entire career in combustion with a particular focus on the aluminum industry, and has designed, commissioned and fixed countless systems for all facets of aluminum production. Mr. Brown comes to Bloom from a furnace OEM, bringing a depth of knowledge and experience of steel making, with a particular focus on processing lines such as galvanizing and annealing. Michael Black, Vice President of Sales is excited about the possibilities. “Scott and Don bring a tremendous wealth of experience in their respective segments of steel and aluminum; [the new sales structure] should help us spread their specific application knowledge within the group, and more importantly to our customers.”

Matt Valancius has been promoted to Director of Marketing and Aftersales Support, including all spare parts sales and service support. Mr. Valancius earned a Bachelors and an MBA from University of Pittsburgh, and has held various positions in Bloom over the past twelve years. He ably led the marketing group immediately prior to the promotion; his expanded role will allow for a cohesive approach to aftermarket activities for a smoother customer experience.” August 4, 2017

Where Are They Now? Chris Bixler

After many years with Applied Process in Livonia, Michigan most recently as Manager of Engineering, Quality and Information Systems Chris recently became Plant Manager of Metlab in Wyndmoor, PA. Applied Process has two locations in the US with the second in Oshkosh, WI. We have always considered the term “recognized industry leader” to be a very overused phrase but in this case we have to say that when it comes to salt quenching and particularly the ADI process it does apply to Applied Process. Metlab is a long established commercial heat treater who has some of the largest pit carburizing furnaces in North America. [August 3, 2017](#)

Are Things Picking Up in Texas?

It's been tough times in Texas over the past few years due entirely to the oil and gas industry slow down but are things picking up? The general consensus is that the future is looking up and at least one heat treater has decided that more capacity is in order. Texas Heat Treating Inc., based in Round Rock and with a location in Fort Worth has just added more capacity in the form of a Surface Combustion 36" X 72" batch IQ furnace bringing the total between the two locations to 15 not counting their Super 30 line or pit furnaces. Granted this was a furnace which was actually bought new a couple of years back but the fact that Texas Heat Treating is now bringing it on line tells you they see business growing. By the way both of their labs are now 17025 accredited which they are pretty proud of. [August 3, 2017](#)



Hauck Heat Treatment/Dzierżoniów, Poland

From Hauck, one of the larger commercial heat treaters in the world we have this press release about a new wash system the company has just installed in their facility in Poland. We had the opportunity to visit this plant when it was brand new and it is a beauty as you can see in the one photo below. The new wash systems compliments an already impeccable facility. "In June 2017, due to the continuous development of Hauck Heat Treatment Dzierżoniów and our desire to improve process quality, we installed a new EMO Oberflächentechnik cleaning and degreasing machine (model VAIOS S), with a batch size of 1220mm x 910mm x 760mm." **August 3, 2017**



Metals India earns Aerospace accreditation, bags govt. contracts

For years now one of the largest readership areas for "The Monty" has been India and their growing heat treating market. As a consequence we received this press release from Metal India one of the largest commercial heat treaters in the country and one whose banner ad can be found on this page. **August 2, 2017**

"Metals India, North India's largest heat treatment services (for automotive industry) provider, is pleased to announce that it has earned AS9100C quality management

certification for aerospace industry following a recent audit. Metals India has long served India's automotive manufacturers. The certification is a part of the company's ongoing expansion strategy to foray into the aviation sector. Aerospace companies, right from small component manufacturers to aerospace primes, can now avail highest quality heat treatment services at competitive prices.



www.secowarwick.com

The 38-year-old firm has also bagged prestigious government contracts in the aviation industry. Metals India recently also joined hands with the country's first private small arms manufacturing plant to provide heat treatment services to components of small weapons like X95 carbine and assault rifle, Galil sniper rifle, Tavor assault rifle and Negev Light Machine Gun (LMG). This is a part of India's first JV with the Israel Weapon Industries (IWI) under the "Make in India" campaign. About Metals India: Metals India specializes in providing heat treatment services for the complete manufacturing industries, including Defense, Railway, Aerospace, Automobile, Surgical, plastic molds, tools & Dies etc. The company has acquired an enviable position in the Indian industry since last 3 decades as a commercial heat treater. The Indian company brought about a revolution in heat treatment space with latest technology in

Vacuum Furnaces, Plasma Nitriding and Induction Hardening. It has been widely recognized for high standards, quality and service. Metals India, under the leadership of Chairman Mr. Rakesh Gupta, also heads ASM's North India Chapter and is instrumental in building trade synergies among materials professionals and organizations."

Ajax TOCCO Press Release

"Ajax TOCCO Magnethermic has completed the installation of a twin bead weld preheat system for SAW (submerged arc weld) process at a manufacturer of high capacity heavy duty fork / lift trucks. This is the second installation at this facility for Ajax TOCCO. The first install was single bead preheat system. The new twin bead floating inductor weld preheat system simultaneously heats two corners of a 30-foot long, 5-ton weldment at a rate of 28 inches per minute to 250 degrees F. The sections of the weldment that are joined are 1-inch thick.

Preheat time has been reduced from 2 hours down to 10 seconds. Over 700,000 BTU's worth of natural gas-fired infrared heaters have been replaced with a single Ajax TOCCO 35 kW TOCCOtron AC induction heating power source. Total fabrication time was reduced by over 60%, allowing the manufacturer to produce one weldment per shift versus one weldment every 2.5 shifts. For more information; Ajax TOCCO Magnethermic Corporation, sales@ajaxtocco.comwww.ajaxtocco.com" August 2, 2017



Ion/Gas Nitriding Comparison

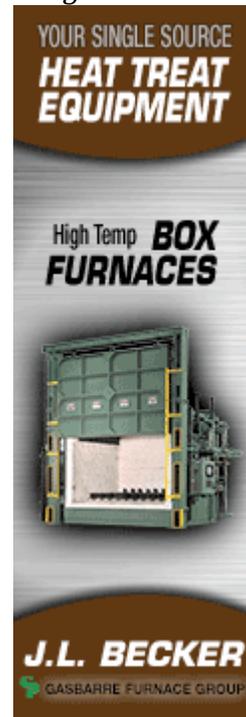
From Michel Korwin, founder of Nitrex we have these very interesting thoughts about Ion Nitriding as opposed to Gas Nitriding. [August 1, 2017](#)

"A few weeks ago, I read an interesting article written by Edward Rolinski, in which he presented in a very accessible and professional manner the basic differences between Gas and Plasma (Ion) nitriding technologies. As you certainly know, Nitrex has been specializing in Gas nitriding/nitrocarburizing technologies for over 30 years. In fact, I built our first Gas nitriding furnace in 1984, with fully automatic controls based on PLC and a PC running an early DOS operating system, and it ran successfully for 15 years. Over the years we installed close to 500 nitriding systems in more than 70 countries and also spent over \$15M on R&D developing nitriding technologies together with furnace hardware and supporting software and controls. Today, Nitrex is more than a supplier of turn-key nitriding installations; it also operates a large international network of commercial heat treating plants. We not only offer the largest Gas nitriding capacity in the US, but also a significant amount of Ion nitriding services as well. Based on our accumulated experience with both technologies over the years, I thought it would be interesting to elaborate on the differences between these two. Ion or Gas nitriding

each have their own ideal applications, but neither of them is a universal solution for all applications. For instance, Ion nitriding is the only choice for nitriding powder metallurgy parts with low density and it is also very efficient for parts with very large masking surfaces, while Gas nitriding is unbeatable with low and medium carbon steel as well as cast iron.

In Mr. Rolinski's article, details about emission control have been overlooked and I believe it's important to clarify a misconception on the subject. Even though Gas nitriding uses ammonia in the process atmosphere, there are high efficiency neutralizers like the Nitrex IN Series that eliminate the effluent gas problem and thus make the process compliant to the most stringent international emission standards. In the case of Ion nitriding, it needs to be mentioned that although it does not use ammonia in the process, it uses nitrogen and hydrogen, which by reverse reaction produce ammonia at the exhaust end of the furnace. When comparing the two technologies it is also important to note the following;

- the requirements of batch washing is very similar for both technologies*
- the preparation of a batch is much simpler for a gas process and therefore the preparation costs in most cases are lower*
- Rolinski writes that a traditional Gas nitriding furnace, even with automatic control, can consume up to 100 times more than an Ion one. This, however is incorrect with respect to advanced Nitrex technology. Our furnace consumes a very similar amount of gas to what an Ion one does for a comparable batch.*
- The common marketing argument used by Ion manufacturers is the shorter processing time for Ion. This also is incorrect when comparing it with an advanced Nitrex system for which process times from floor to floor are shorter.*
- An important element for users is CAPEX and ROI. The initial investment cost for an Ion installation and a very good quality Gas Nitriding System like Nitrex, is very similar. The difference in ROI is 2-3 times faster in advanced Gas than in an Ion system with the assumption that the selling price is the same per part treated. This is due to the ability of 2-3 times the density of the Gas vs. Ion charge with the ability of obtaining the highest homogeneity and repeatability.*



- *Due to the lack of basic elements of thermochemical control, which perhaps does not constitute a major obstacle for repetitive loads, but is definitely a major difficulty for varying charges, Ion nitriding requires operators with very high qualifications. With Nitrex Gas nitriding, on the contrary, the operator is not involved in any technological decisions and his qualifications not relevant.*

Both technologies have greatly improved over the years and surmounted many of the problems encountered in the past. Today they are complementary in many ways; however, neither is necessarily the best solution for everything. One still has to weigh the benefits and shortcomings before using either method. Finally, I hope that these comments have further shed some light on the subject of nitriding and will instigate even more interest in these technologies.” Best regards, Michel J. Korwin

Monday Morning Briefing

Just last week global commercial heat treater **Bodycote** announced their Interim results for the six months ended 30 June 2017, a very brief summary of which can



be found here with the complete report available at <http://www.bodycote.com/en>

The markets loved the results by the way with the share price either at record highs or pretty close to it; *“Bodycote achieved strong revenue growth in the first half, with good momentum in virtually all parts of the Group. Notably, the General Industrial business, which represents almost 40% of Group revenues, experienced a broad based recovery after over three years of decline. Automotive and Aerospace also moved ahead. Bodycote revenues grew 18.8% to £345.7m in the first half (2016: £291.0m) corresponding to a growth of 8.3% at constant exchange rates. The five sites acquired in 2016 provided 3.5% of the constant currency growth such that organic constant currency growth was 4.8%. The contribution of recent greenfield investments made up 2.0% of the growth at constant exchange rates. The remaining 2.8% of the constant currency growth stems primarily from the*

macro-economic tailwind the Group has seen since the second half of 2016. Oil & gas remains a drag on growth although now much less pronounced than in previous periods. The onshore

business in North America did register strong growth in the second quarter but subsea continued to decline.” **Diamond Heat Treat** in Rockford, Illinois, USA recently announced that they had purchased a new Ipsen “Titan” vacuum furnace, we now have a photo of the unit installed. Diamond if you recall was purchased earlier this year by a venture capital firm by the name of Calvert Street.



Centre for Heat Treating Excellence Award. “Columbus resident and **Cummins Inc.** employee **Steve Ferdon** received the Distinguished Service Award from the Center for Heat Treating Excellence at Worcester Polytechnic Institute. The award is presented to an individual who has made a significant, commendable and long-standing contributions to the promotion of CHTE as well as the heat treating industry. Ferdon is the director of Global Engineering Technology in the Fuel Systems business unit as Cummins. He has been a member of CHTE since 2010 and has served as chair of its board of directors since 2012. CHTE is an academic-industry partnership headquartered on the campus of WPI in Worcester, Massachusetts.” **Precision Heat Treat** out in Surrey, British Columbia, Canada has been sold. Precision is a reasonably small commercial heat treater (which reflects the amount of manufacturing in BC) which has been owned and run for the past 20 years by Helen and John Davidson. They have been looking for a buyer for some time and we are pleased that it finally worked out for them. **John Levensky** has been in the heat treating industry for many years, typically in a sales position for companies such as **Bodycote**, **Solar Atmospheres** and until recently **Accurate Steel Treating** in Southgate, California. John very recently made a move and is now Business Development Manager for **Delta Heat Treating** in Huntington Beach, CA.

Wallwork Press Release. *“Wallwork Group are at Offshore Europe 2017 on Stand 3C147. Many manufacturers in the oil, gas and energy industries rely on the company’s services to ensure that their engineered components meet the stringent quality standards needed in such harsh environments. The company is Schlumberger approved and operates to ISO9100 and ISO9001. As a major supplier of heat treatment services to the aerospace industry, they also enjoy main tier manufacturer approvals. Wallwork use their own fleet of vehicles from three locations and provide a nationwide 24/7 operation to ensure fast order turn-around. Hardening and tempering imparts optimum hardness, strength and toughness. Sometimes this can help component designers save weight and material by avoiding unnecessary over-engineering. Another advantage is a potential to eliminate additional final finishing processes – saving both time and money. Plasma and gas nitriding has many benefits for the oil and gas industry manufacturers. Particularly, increasing wear and anti-galling properties significantly improves finished part performance. Tufftride and Quench-Polish-Quench services produce parts that are exceptionally hard wearing and resist fatigue whilst ensuring there is minimal or no dimensional change. Also, surfaces begin to exhibit a self-lubricating behaviour.”*



Commercial heat treater **Paulo** has been making some very large investments in their Nashville, TN, USA facility over the past couple of years; *“The past two years Paulo has significantly invested in the Nashville Division. The facility was expanded, adding 30,000 sq ft. from an adjacent building which was connected to the existing facility. Updates to the vacuum department include a SECO vacuum furnace capable of low pressure carburizing and the installation of a GM (60”x36”x36”) vacuum furnace with 15 bar quench and an 8000lb capacity. Also added were two deep freeze units and 8 Paulo designed tempers. The atmosphere department has also grown. The integral quench line has been expanded by purchasing and installing two new AFC 36X48X36 furnaces. The furnaces are fully equipped*

to provide conventional heat treat processes as carburize, carbonitride, neutral hardening but has been expanded to include hot oil quenching and ferritic nitrocarburizing. Three Paulo built tempers were added to support the increase in capacity. A pass-thru washer has been purchased and will be installed in the 3rd Quarter of 2017. As far as the future goes Paulo has this to say; "The final vacuum furnace is being installed and will be released for production in August of 2017. Coming soon are new office spaces including plant management offices, conference rooms, customer experience center, and a remodeled quality laboratory. Our Nashville team has grown with the plant, from 46 employees at the end of 2015 to over 60 today." July 31, 2017



USED EQUIPMENT

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Quick Jump To Items:

- Item # B433 Car Bottom 74" x 84" x 84"
- Item # B432 Atmosphere Box Furnace 36" X 48" X 24"
- Item # B431 Air Atmosphere Box Furnace 2,000 F
- Item # B430 Ipsen Recirculating Box Furnace
- Item # B428 Carbottom Furnace 1800 F
- Item # B427 SOLO Swiss Line 202-30/30/60
- Item # B426 Plasma Nitriding Unit 1000 kg Capacity
- Item # B425 Box Furnace 2000 F
- Item # B424 Atmosphere Box Furnace 80" x 96" x 60"
- Item # B422 Ipsen Sealed Quench Line TQF-7-EM
- Item # B421 Surface Combustion "Super 36" Allcase
- Item # B418 Lindberg High Temperature Oven 36" Cubed
- Item # B417 Fluidized Bed Furnace Line
- Item # B414 Ipsen Batch IQ Installation Immaculate
- Item # B402 Holcroft Batch IQ 36" x 48" x 30"
- Item # B401 Car Bottom Furnace 30' x 40' x 15'
- Item # B400 Surface Combustion Super 30 Allcase
- Item # B399 Car Bottom Furnace 10' x 12' x 8'
- Item # B398 Sauder Batch IQ Line 24" x 24" x 36"
- Item # B397 "Lift-Off" Atmosphere Box Furnaces (2)
- Item # B391 Ipsen T-11 Batch IQ Furnace
- Item # B388 Hydrogen Atmosphere Furnace 8" x 8" x 8"
- Item # B386 High Temperature Tube Atmosphere Furnace
- Item # B374 Atmosphere Box Furnace 2100 F

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

Item # B367 Atmosphere Box Furnace 166" x 32" x 120"

Item # B352 Pacific Scientific Box Furnace

ITEM # B433

CAR BOTTOM 74" X 84" X 84"

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

Asking Price: 8,250 USD



ITEM # B432

ATMOSPHERE BOX FURNACE 36" X 48" X 24"

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

Asking \$49,500 USD.



ITEM # B431

AIR ATMOSPHERE BOX FURNACE 2,000 F

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

Asking \$65,000 USD.



ITEM # B430

IPSEN RECIRCULATING BOX FURNACE

Ipsen Recirculating Box Furnace 38" high x 43" wide x 48" deep. Gas fired, 1,000,000 BTU/hr with a max temperature: 1400 deg.F. Model Number: DL-3036. Serial Number: 60459. Updated controls, Honeywell indicating controller and overtemp. High temperature tempering furnace. Vertical lift air operated door with overhead air cylinder. Fiber board insulation. Alloy roller rail hearth. Rear located combustion chamber with high velocity roof mounted circulating fan. Top mounted package burner. Complete combustion controls and safeties. 460/3/60 power. Test fired prior to shipment.

Asking Price: \$39,500.00



ITEM # B428

CARBOTTOM FURNACE

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

Asking \$150,000 USD or best offer.



ITEM # B427

SOLO SWISS HEAT TREATMENT LINE 202-30/30/60

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

Price on request .



ITEM # B426

PLASMA NITRIDING UNIT 1000 KG CAPACITY

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

Asking 98.000 Euro. Located in Turkey.



ITEM # B425

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

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

Asking \$85,000 USD.



ITEM # B424

ATMOSPHERE BOX FURNACE

Atmosphere Box Furnace. Manufactured by Williams Industrial Services. Natural gas, 1.8 MBTU's. Working dimensions of 80" wide x 96" high x 60" deep. Radiant Tube Box Furnace. S/N 18932. Maximum temperature of 1750F. Voltage 480/3/60. Controls; Mounted & wired in a free standing enclosure includes a Honeywell digital controller/recorder, Eurotherm high limit. Mounted in the same enclosure includes "Fireye" flame safety. All necessary pushbuttons, signal lights, relays, motor starters etc. are included. Standard front loading box furnace with vertical lift air operated door. A water cooled roof mounted fan circulates the heated air for good temperature uniformity. There are twelve (12) vertical radiant tubes in this furnace, six (6) on each side. Each burner has spark ignition and there is a flame safety system for flame curtain. There is a Endo flowmeter to control atmosphere. Furnace also has a water cooled breast plate & a stationary powered loader for charging the furnace. Excellent condition.

Asking \$125,000 USD.



ITEM # B422

IPSEN SEALED QUENCH LINE

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

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

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

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

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

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

Asking Price £95,000.00



ITEM # B421

SURFACE COMBUSTION "SUPER 36" ALLCASE

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

Asking Price: \$353,825 USD.

ITEM # B418

LINDBERG HIGH TEMPERATURE OVEN

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

Asking \$21,000 USD for both.



ITEM # B417

FLUIDIZED BED FURNACE LINE

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

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

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

Asking price is USD \$180,000.00



ITEM # B414

IPSEN BATCH IQ INSTALLATION

Ipsen Batch IQ Installation. This 5 year old installation consists of 2 Ipsen carburizing furnaces with working dimensions of 36" X 48" X 36", both gas fired. Four (4) gas fired Ipsen tempers 36" X 48" X 36" capable of 1400F, an Ipsen dunk/spray washer and 2 charge cars. Carburizing furnaces are a "flow through design" using endothermic atmosphere. Atmosphere control is through an oxygen probe/Siemens 3 gas IR system. The entire installation is designed for "lights out operation" meaning it is completely automated. Included is over \$100,000 worth of spare parts along with 15 base trays and baskets. The equipment has just been removed and is in immaculate condition. New the system was \$3.5 million USD,

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



ITEM # B402

HOLCROFT BATCH IQ FURNACE

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

Asking \$55,000 USD.



ITEM # B400

SURFACE COMBUSTION SUPER 30 ALLCASE

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/60cycle. Operating temperature 1350F to 1750F. Newer style with dual quench cylinders and top cool. Controls are in a free standing panel with Eurotherm digital controllers and over-temp. Multi-pro data logging and carbon control. Includes charge car. Good condition.

Asking \$60,000 USD.



ITEM # B399

CAR BOTTOM FURNACE

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

Asking \$85,000 USD.



ITEM # B398

SAUDER BATCH IQ LINE

Sauder Batch IQ Line. Serial Number 881978-83. Electrically heated 480/3/60/150kW total load. Maximum operating temperature of 1850F. Working dimensions of 24" Wide X 24" high X 36" long. Controls; Mounted and wired in an enclosure attached to the right hand side of the furnace includes a Marathon 10 Pro digital temperature controller, Marathon Carbpro digital carbon controller, Barber Colman analog high limit and a Honeywell digital strip chart recorder. Three power meters are face mounted to the same enclosure which monitor power in each zone of the furnace. A Halmar "SCR" power controller controls power to the heating elements. Two (2) Allen Bradley PLC controllers are mounted in the same enclosure. Standard In/Out Integral Quench Furnace w/Top Cool. This line consists of IQ furnace with top cool, heated quench tank, charge car, dunk & spray washer, temper furnace, SBS oil cooler, scissors table, atmosphere flow panel and several spare parts. Very good condition. Asking \$125,000 USD for the complete line. Shipping

Dimensions:

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

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

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

Quench: 106" x 10'H x 72"

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

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

Misc. skids, flow panel, SBS, spare parts

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



ITEM # B397

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

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

Asking \$325,000 USD each.



ITEM # B391

IPSEN T-11 BATCH IQ FURNACE

Ipsen T-11 Batch IQ Furnace. Model T-11 gas fired batch IQ furnace with an operating temperature of 2000F. Working dimensions of 36"W x 24"H x 48". Voltage 460/3/60. External dimensions of 9'W x 14'7"H (Assembled) x 22'L - Approx. Standard T-11 Ipsen batch type atmosphere furnace with integral hot oil quench. Furnace has "Waukee" flow meters for Ammonia, Endo, Air and Natural Gas. There are a total of twelve (12) Eclipse (SER) single ended recuperative burners with Kanthal APM (Advanced Powdered Metallurgical) vertical radiant tubes. Controls mounted and wired in an enclosure attached to the right hand side of the furnace includes the following a Yokogawa digital temperature control, Yokogawa digital over temp control, Yokogawa digital oil temp control, Yokogawa digital over temp (oil) control, three (3) A.C. Amp meters, one for each quench agitator and

all necessary pushbuttons, signal lights, etc. Quench tank is gas fired with an Eclipse burner package. This furnace includes a stationary loader, gas fired Dunk & Spray washer, manuals & drawings. Good condition, just moved to indoor heated storage.

Asking \$75,000 USD.



ITEM # B388

HYDROGEN ATMOSPHERE FURNACE

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

Price: \$5,000 USD



ITEM # B386

HIGH TEMPERATURE TUBE ATMOSPHERE FURNACE

High Temperature Tube Atmosphere Furnace. Manufacturer: Blue-M. Type: Atmosphere Vertical Tube Furnace. Max. Temperature: 2500°F. Work Zone Size: 2"

Diameter x 12" High. Heating: Electric, Globar elements. Tube: Ceramic. Atmosphere: Air or Any Suitable Purge Gas. Last Use: Thermocouple Calibration.

Price: \$2,500 USD.



ITEM # B374

ATMOSPHERE BOX FURNACE

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

Asking Price: \$18,000.00 USD.



ITEM # B371

SAUDER "AUTO-TILT" CAR BOTTOM FURNACE

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

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



ITEM # B367

ATMOSPHERE BOX FURNACE

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

Asking \$165,000 USD.



ITEM # B352

PACIFIC SCIENTIFIC BOX FURNACE

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

Asking \$70,000 USD.



ITEM # B349

BEAVERMATIC ATMOSPHERE INTEGRAL QUENCH FURNACE

Beavermatic Atmosphere Integral Quench Furnace. 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 in operation and can be demonstrated on your parts. Available for inspection in Pacific Northwestern U.S. Immediate Availability.

Asking Price: \$25,000 USD.



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Quick Jump To Items:

Item # C329 CI Hayes Atmosphere Belt Furnace

Item # C328 CI Hayes Atmosphere Belt Furnace

Item # C327 Rogers Engineering Continuous Brazing Furnace

Item # C326 SOLO Swiss Mesh Belt Furnace

Item # C325 Sinterite Mesh Belt Furnace 1180 C

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

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

Item # C322 Surface Combustion Rotary Hearth Line

Item # C321 Austempering System 500 lbs/hr

Item # C319 CI Hayes High Temperature Pusher Furnace

Item # C317 CI Hayes High Temperature Pusher Furnace

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

Item # C312 Surface Combustion Roller Hearth Line

Item # C311 Ipsen Pusher Line P-12

Item # C308 AFC Mesh Belt Furnace 54" Wide Belt

Item # C302 Mesh Belt Austemper Lines 30" Wide Belt

Item # C301 Cast Link Belt Line 4000 lbs/hr

Item # C296 C.I. Hayes High Temperature Tube Furnace

Item # C283 Rotary Hearth Furnace System

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

Item # C265 Sunbeam Pusher Carburizer 3000 lbs

Item # C219 Abbott Furnace

ITEM # C329

CI HAYES ATMOSPHERE BELT FURNACE

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

Asking Price \$15,000 USD



ITEM # C328

CI HAYES ATMOSPHERE BELT FURNACE

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

Asking Price \$15,000 USD



ITEM # C327

ROGERS ENGINEERING CONTINUOUS BRAZING FURNACE

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

Asking \$250,000 USD.



ITEM # C326

SOLO SWISS MESH BELT FURNACE

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

Price on request.



ITEM # C325

SINTERITE MESH BELT CONVEYOR FURNACE

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

Asking \$70,000.00 USD or best offer.



ITEM # C324

C.I. HAYES MESH BELT FURNACE

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



ITEM # C323

AICHELIN CAST LINK FURNACE LINE

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

Best offer.



ITEM # C322

SURFACE COMBUSTION ROTARY HEARTH FURNACE LINE

Surface Combustion Rotary Hearth Furnace Line. This system was designed for heat treating and straightening crankshafts and consists of a rotary hearth furnace, 2 Gleason straightening presses and a robot for loading/unloading. The furnace is S/N CC11590-1 with an outside diameter of 17' 3", inside 15', inside height of 2' 11" with an overall height of 8" 6". Built August 1979. Gas fired with 8 trident tubes. Atmosphere is Endo/Natural gas. Nominal tray size is 5" X 21", number of tray positions 60, tray

loader/unloader length 10' 6". Hearth has ceramic tray support and guide tiles and embedded in 12" thick insulating firebrick. Sidewalls consist of 9" of insulating firebrick backed with 4 1/2" of insulating block. Alloy and brickwork are both excellent. System is complete, installed but not in operation.

Asking \$50,000 USD.



ITEM # C321

AUSTEMPERING SYSTEM

Austempering System. Ipsen Model SG500, S/N52822. Shaker hearth style hardening furnace is capable of 500 pounds/hour, 1850F operating temperature, gas fired 800,000 BTU's/hour with an 18" wide tray. Temper has an operating temperature of 800F and a heat input of 300,000 BTU's. Controls on both are Honeywell UDC units. Entire system consists of a magnetic conveyor loading system, Ipsen shaker-feeder-hopper. Mitsubishi variable speed AC drive on salt conveyors, 900 gallon wash tank with 30" conveyor and 280 gallon rust inhibitor tank with 32" conveyor. Currently installed but not in production. System is in reasonable condition but has not been used for some time.

Asking \$20,000 USD or best offer.

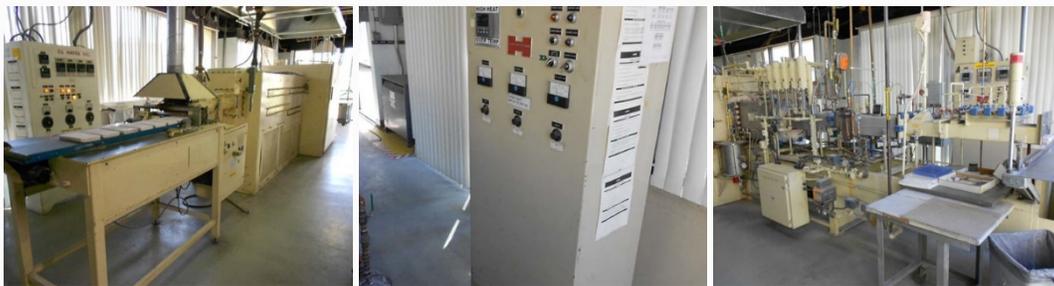


ITEM # C319

CI HAYES HIGH TEMPERATURE PUSHER FURNACE

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

Asking \$100,000 USD.



ITEM # C317

CI HAYES HIGH TEMPERATURE PUSHER FURNACE

CI Hayes High Temperature Pusher Furnace. Model MY-040848-94PH. 4" opening above furnace hearth. 8" tray width. Maximum temperature of the pre-heat is 1100C, maximum temperature of the high heat is 1700C. 94" preheat, 1 control instrument/1 zone, 30KW@440/3/60, metallic heating elements. 48" high heat, 3 instruments, 3 control zone, 45KW @ 440/3/60, moly heating elements. 48" metallic front tunnel with nitrogen curtains and burn off. 3 cooling sections each 36" long, 1 section is insulated and all are water jacketed. Rear tunnel with nitrogen curtains and burn off. Multiple atmosphere inlets for hydrogen/dissociated ammonia with nitrogen purging. Pusher screw drive. Atmosphere bubbler. Return conveyor system. High heat chamber recently rebuilt. Overall dimensions 6' high X 7.5' wide X 39' long (approximate). Excellent condition. Furnace was used for co-firing, can be converted for sintering with preheat muffle.

Asking \$110,000 USD.



ITEM # C314

ROLLER HEARTH FURNACE (ATMOSPHERE)

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

Asking \$225,000 USD.



ITEM # C312

SURFACE COMBUSTION (PIFCO) ROLLER HEARTH LINE

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 waulkeetronic flow meters. Must be removed within the next few months.

Asking Price: \$450,000 USD. All Offers Considered.



ITEM # C311

IPSEN PUSHER LINE P-12

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. Must be removed within the next few months

Asking Price \$250, 000 USD. All Offers Considered.



ITEM # C308

AFC MESH BELT HARDENING FURNACE

AFC Mesh Belt Hardening Furnace. Manufactured by Atmosphere Furnace Company this furnace has working dimensions of 6" high x 54" wide x 12' long (heated section). Gas fired with radiant tubes. Operating temperature of 1800F. S/N 6948. Temperature Controls: Free standing enclosed panel. Honeywell solid state digital readout indicating controllers, L&N overtemps. L&N strip chart temperature & carbon recorder. Marathon Monitors Carb-

Pro carbon control. Description & Features: Fiber lined. Heated by (9)North American 4724-2-E burners firing into recuperated U-tubes. Two zones of control. Rear zone has a roof mounted recirculating fan. Cold belt return. Furnace has a flame curtain and complete combustion controls and safeties. Includes quench tank and conveyer.

Asking \$75,000 USD.



ITEM # C302

MESH BELT AUSTEMPER LINES

Mesh Belt Austemper Line. Built by AFC-Holcroft this is a mesh belt, gas fired austemper line. 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. Furnace was in operation until March 2015. New in 1989. Complete, in very good condition and currently in storage.

Asking \$75,000 USD.



ITEM # C301

CAST LINK BELT QUENCH AND TEMPER LINE

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

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

The sequence of this furnace is as follows:

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

Includes:

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

Very good condition, available immediately.

Asking \$650,000 USD.



ITEM # C296

C.I. HAYES HIGH TEMPERATURE TUBE FURNACE

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

Asking Price \$21,000 USD / OBO.



ITEM # C283

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

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

Asking price: \$29,000 USD.



ITEM # C269

CI HAYES MESH BELT FURNACE

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

Asking \$39,000 USD.



ITEM # C265

SUNBEAM PUSHER CARBURIZER

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

Asking \$40,000 USD.



ITEM # C219

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

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

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



DRAW/TEMPER FOR SALE

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

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Quick Jump To Items:

Item # T345 Surface Combustion Temper Furnaces (4 Available)

Item # T344 Batch Oven 72"H X 48"W X 48"D

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

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

Item # T341 Temper Furnace

Item # T340 Safed/Borel Annealing Furnace

Item # T339 Box Tempering Oven

Item # T336 Mesh Belt Temper Furnace 48" Wide

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

Item # T333 Composite Curing Oven / Heat Treat Oven

Item # T329 Guspro Heat Cleaning Oven

Item # T325 3-Station Despatch Temper Furnace

Item # T321 Grieve Conveyor Oven

Item # T320 Pifco Conveyor Oven

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

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

ITEM # T345

SURFACE COMBUSTION TEMPER FURNACES (4 AVAILABLE)

Surface Combustion Temper Furnaces (4 available). Manufactured by Surface Combustion, Model HFC-36-54. All are gas fired units with an operating temperature of 1250F. Standard Guillotine style door. Working dimensions of 36" wide X 48" deep X 30" high. Alloy and brickwork in good condition.

Asking \$29,500 USD Each.

ITEM # T344

BATCH OVEN 72"H X 48"W X 48"D

Grieve Recirculating Oven. Working dimensions of 72" high X 48" deep X 48" wide. Electrically heated 460/3/60, 40KW, 50 amps. Operating temperature of 650F. Model Number: WTH-446-650, Serial number 411938. Temperature Controls: Indicating controller and overtemp. Optional circular chart recorder. Description & Features: Standard Grieve truck oven. Double swing open doors. Heating elements and fan are located in top chamber. Horizontal air flow. Insulated floor with truck wheel guide tracks. Air flow switch. 2 HP fan motor. Will be rebuilt and fully operational. Test fired prior to shipment. Two ovens available. 2011 vintage. Very good condition.

Asking \$14,500.00 USD.



ITEM # T343

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

Batch Temper 36"W X 36"H X 96"L. Manufactured by Wisconsin Oven, Model SDB-6616-10G, S/N 033899307. Natural gas fired, 1 MBTU's/hour. Maximum temperature rating

1000F. Voltage 480/3/60/16 amps. External dimensions of 96" wide X 13' 4" high assembled (10'6"H shipping) x 11'L. Controls; Mounted and wired in an enclosure with fused disconnect attached to the side of the furnace. Temperature controls consist of a digital Barber Colman 560 digital for temperature and a Barber Colman digital "Limitrol" 75L high limit. ATC process timer to control heating cycle. Allen Bradley switches for control power, circulation fan, ignition and gas valve reset. Signal lights for control power, air flow, high/low gas pressure, purge, etc. Eclipse package burner with Honeywell flame safety, UV scanner and spark ignition.

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

Asking \$49,900.00 USD.



ITEM # T342

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

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

Asking \$16,500 USD.



ITEM # T341

TEMPER FURNACE

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

Asking \$91,000 USD.



ITEM # T340

SAFED/BOREL ANNEALING FURNACE

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

Price on request.



ITEM # T339

BOX TEMPERING OVEN

Box Tempering Oven. Manufactured by Eisenmann in 2002. Model HN-FNC-006. Working dimensions of 108" Wide x 96" Deep x 64" High. Natural Gas (3,200,000 BTU/HR). Operating temperature of 1200F. Stainless Steel Lined Recirculating Box Tempering Oven complete with Top-Mounted Alloy Recirculating Fan (20 HP – 13,000 CFM), Rear-Mounted Heater Box with Eclipse Burner System, Alloy Skid Hearth, Forced Cool Down Fan System (7,333 CFM), Vertical Rising Motor Driven Front Door, and Stationary Loading Table. Free Standing Control Panel with Eurotherm Digital Set Point Programmable Temperature Controller, High Limit, Chessel Strip Chart Recorder, and Honeywell Flame Safety System. Overall dimensions of 13'2" Wide x 23' Long x 17'8" High (includes Door Structure). Approximate weight of 32,000 pounds. Excellent condition.

Asking price is \$55,000 USD.



ITEM # T336

MESH BELT TEMPER FURNACE 48" WIDE

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

Asking \$29,500 USD.



ITEM # T335

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

Batch Oven 37"H X 37"W X 25"D. Batch type recirculating oven manufactured by Despatch, Model V-29-STD. Inside dimensions of 37" high X 37" wide X 25" deep. Electrically heated 480/3/60, 12 KW. Serial number 126552. Temperature Controls: Partlow indicating controller and Honeywell overtemp, timer. Double swing open doors. Side mounted recirculating fan. Adjustable horizontal air flow. Provisions for 12 shelves, 4 shelves included. Powered exhaust blower. Oven has been checked out and test fired and is ready for immediate shipment. Excellent condition.

Asking \$8,000.00 USD.



ITEM # T333

COMPOSITE CURING OVEN / HEAT TREAT OVEN

Composite Curing Oven / Heat Treat Oven. Manufactured by Epcor 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 # T329

GUSPRO HEAT CLEANING OVEN

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

\$2,000 or best offer.



ITEM # T325

STATION DESPATCH TEMPER FURNACE

3-Station Despatch Temper Furnace. Manufactured in 1980 by Despatch Industries, Inc. 3 Independently loaded and operated furnace stations with shared panel. Tops elevate off bases for loading and unloading. Work Zone: 22"W x 40"L x 25"H Each. Hearth Height: Estimated at 36-40" (Can measure for you). Max. Temperature: 850°F with a Uniformity of

+/- 25°F (Center area of 12"W x 20"L x 10"H meets +/-10°F). Electrically heated with a power of 490V/3Ph/60Hz. 3 West 4400 Temperature Contrl. & West 6700 Hi-Limit. (We can quote upgrade to new Super Systems, Inc. controls, if desired.). Just rebuilt. New heating elements, new hearth ceramics, New stainless steel side panels, new paint.

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

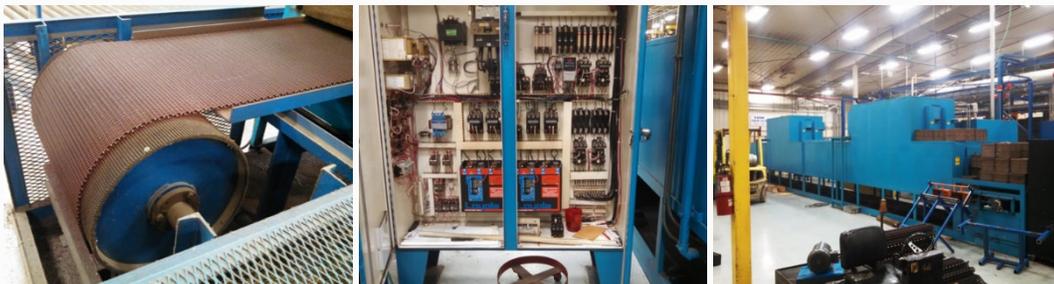


ITEM # T321

GRIEVE CONVEYOR OVEN

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

Asking Price: \$42, 000 USD.



ITEM # T320

PIFCO CONVEYOR OVEN

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

Asking Price: \$59,000 USD.



ITEM # T318

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

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

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

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

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

Asking Price: \$72,500 USD each.



ITEM # T312

RECIRCULATING WALK-IN OVEN

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

Asking Price: \$13,500.00 USD.



ITEM # T303

PIFCO TEMPER FURNACE

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

Asking Price: \$38,000 USD.



ITEM # T301

LUCIFER FURNACE

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: \$9,950.00 USD as is, where is.



ITEM # T290

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

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

Please call for pricing.



ITEM # T286

LINDBERG BOX TEMPER

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

Asking Price: \$65,000 USD



GENERATORS FOR SALE

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

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Quick Jump To Items:

- Item # G201** Ammonia Dissociator 250 SCFH
- Item # G200** Endothermic Generators 1500 CFH (2 available)
- Item # G199** Sargeant and Wilbur Ammonia Dissociater
- Item # G198** Endothermic Generator 3000 CFH
- Item # G197** Ammonia Dissociator 1000 CFH
- Item # G196** Surface Combustion 5000 CFH Endo Generator
- Item # G193** Pacific Scientific Endothermic Gas Generator 3000 CFH
- Item # G189** Surface Combustion 2400 CFH Endo Generator
- Item # G178** Ammonia Dissociators 3000 CFH
- Item # G176** Surface "Multi-Bottle" Endo Generators
- Item # G173** Lindberg Endo Generator 4500 CFH
- Item # G169** Gasbarre Endo Generator 3000 CFH

ITEM # G201

AMMONIA DISSOCIATOR 250 SCFH

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

Please Call For Pricing



ITEM # G200

ENDOTHERMIC GENERATORS 1500 CFH (2 AVAILABLE)

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

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



ITEM # G199

SARGEANT AND WILBUR AMMONIA DISSOCIATER

Sargeant and Wilbur Ammonia Dissociater. Model No. GAD500-E Electrically Heated Ammonia Dissociater with 500 CFH capacity, over temperature cutout and alarm system, under temperature control system. 230V, 3 phase, 60 Hz, operating temperature of 1750 F. New in 2011. Retort replaced very recently. Like new condition.

Asking \$17,000 USD.



ITEM # G198

3,000 CFH ENDOTHERMIC GENERATOR

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

Asking \$22,500.00 USD.



ITEM # G197

AMMONIA DISSOCIATOR

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

Asking Price \$11,500.00 USD.

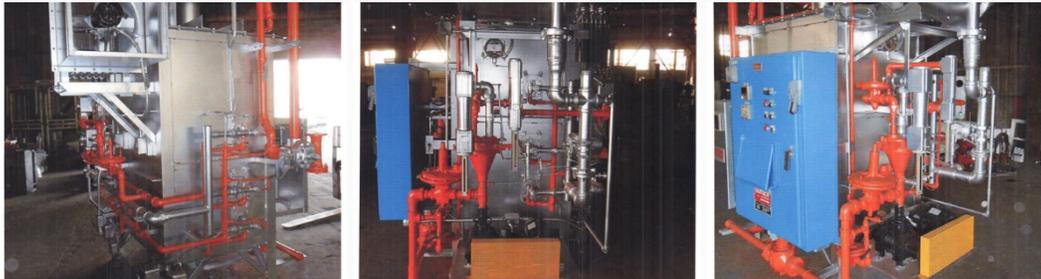


ITEM # G196

SURFACE COMBUSTION 5000 CFH ENDO GENERATOR

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

Asking \$31,500.00 USD.



ITEM # G193

PACIFIC SCIENTIFIC ENDOTHERMIC GAS GENERATOR

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 immediadely and in very good condition FOB East Chicago, IN.

Please call for pricing.



ITEM # G189

SURFACE COMBUSTION 2400 CFH ENDO GENERATOR

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

Asking \$59,000 USD.



ITEM # G178

AMMONIA DISSOCIATORS (4 AVAILABLE)

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

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

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

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

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

Asking \$29,500.00 USD each.



ITEM # G176

SURFACE "MULTI-BOTTLE" ENDO GENERATORS

Surface "Multi-Bottle" Endo Generators. Manufactured by Surface Combustion. Natural gas heated 675 CFH/HR. Model # RX 35-75-3V. Maximum temperature 1950F. 7500 CFH capacity. Controls are complete, water cooled. SSi atmosphere controls and Atmosphere Engineering "Endo Injector". Very good condition, ready to go.

Asking \$75,000 USD.



ITEM # G173

LINDBERG ENDO GENERATOR

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

Asking \$17,500.00 USD.



ITEM # G169

GASBARRE/SINTERITE FURNACE DIVISION ENDO GENERATOR

Gasbarre/Sinterite Furnace Division Endo Generator. 3000 CFH, electrically heated 460/3/60/63 Amps/50kW. New in 2006. External dimensions of 106" wide x 75" deep x 116" high. Controls are enclosed in a panel attached to the side of the generator. Honeywell UDC 3200 digital temperature controller and Honeywell UDC 2500 digital high limit safety. Control switches with indicating lights are flush mounted in the enclosure. Flange mounted fused disconnect switch for control power. Separate non fused disconnect for the main power. Waukee flow meters are manifold mounted for incoming and outgoing gases. Flow meters include: Natural Gas 0-1000 CFH, Air 0- 2500 CFH, (3) Mixed Gas 0-1500 CFH and Endo 0- 3500 CFH. Step down transformer for reduced voltage to the heating elements. Electrically heated 3 retort generator. Refractory lined shell with vertically mounted retorts. Total of twelve (12) silicon carbide heating elements, 6 on each side are mounted through the chamber for good uniform heating of the alloy retorts. The natural gas and air pass through a Waukee "mixor" valve then into the Waukee gas pump. Mixed gas enters the 3 "mixed gas" flow meters, through the Selas fire checks and enters the top of the retorts. The gas travels through the catalyst filled heated retorts and exits at the bottom. The exiting Endothermic gas passes through water cooled chambers then finned cooled air heat exchangers then through the Endothermic flow meter. A pressure regulator is supplied on the exiting gas piping. Good condition.

Asking \$29,500.00 USD.



INDUCTION FOR SALE

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Quick Jump To Items:

Item # I170 Inductoheat Induction Power Supply

Item # I164 Ajax Tocco Induction Power Supply Unused

Item # I160 Ajax Tocco Power Supply Unused

Item # I158 Induction Power Supply 335 kW

Item # I153 Raydyne Induction Heating System 40 kW

ITEM # I170

INDUCTOHEAT INDUCTION POWER SUPPLY

Inductoheat Induction Power Supply. This is a Lelap/ 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). This is an "HS-3" Heat Station with 3 capacitors and a Jackson Transformer with ratio's of 5-3 to 17-3. The Inductoheat SP5 has been a proven reliable power supply for heating and heat treating for many years. It can be used for short heat times as it has fast and consistent ramp up to set power.

It appears in excellent condition and is available for \$9,500 or "Best Offer". There is no warranty but it is sold with the assurance it is in good working order. Power testing, Start up and Training service is available at extra cost by an experienced induction heating service engineer. We can also offer repairs and servicing for Lelap/Inductoheat Power Supplies. A number of other Lelap/Inductoheat SP-11 units are available in the range of 30 to 60 kW, 200 kHz.

Asking \$9,500.00 USD Or Best Offer

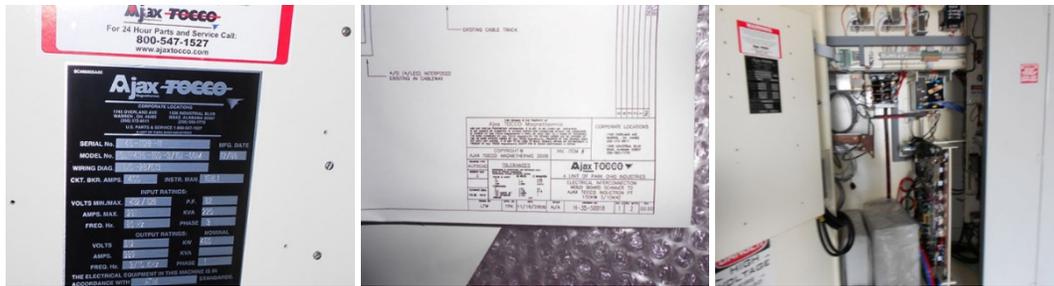


ITEM # I164

AJAX TOCCO INDUCTION POWER SUPPLY

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

Asking \$33,000 USD.



ITEM # I160

AJAX TOCCO POWER SUPPLY (UN-USED)

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

Asking \$39,000.00 USD.



ITEM # I158

INDUCTION POWER SUPPLY

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

Asking \$39,500.00 USD.

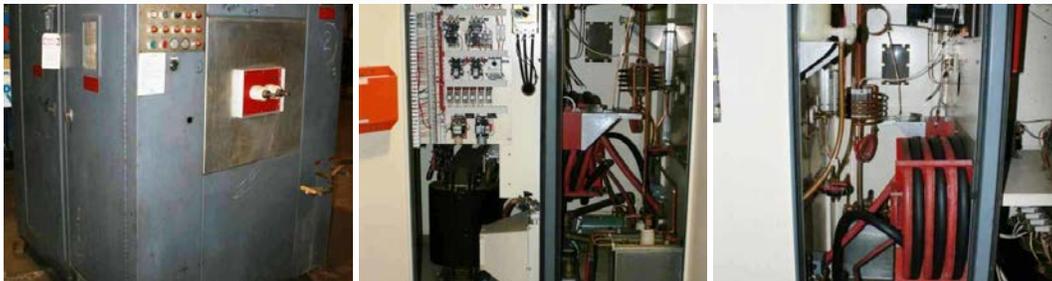


ITEM # I153

RAYDYNE INDUCTION HEATING SYSTEM

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

Asking \$7,500.00 USD.



LAB EQUIPMENT FOR SALE

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

[Contact Us](#)

Quick Jump To Items:

Item # L8 Clark Micro Hardness Tester

Item # L7 Leco Micro Hardness Tester

Item # L3 Laser Diffraction Particle Size Analyzer

Item # L1 Detroit Testing Brinell Hardness Tester

ITEM #L8

CLARK MICRO HARDNESS TESTER

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

Asking \$6,500.00 USD.



ITEM #L7

LECO MICRO HARDNESS TESTER

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

Asking \$7,000.00 USD.



ITEM #L3

LASER DIFFRACTION PARTICLE SIZE ANALYZER

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

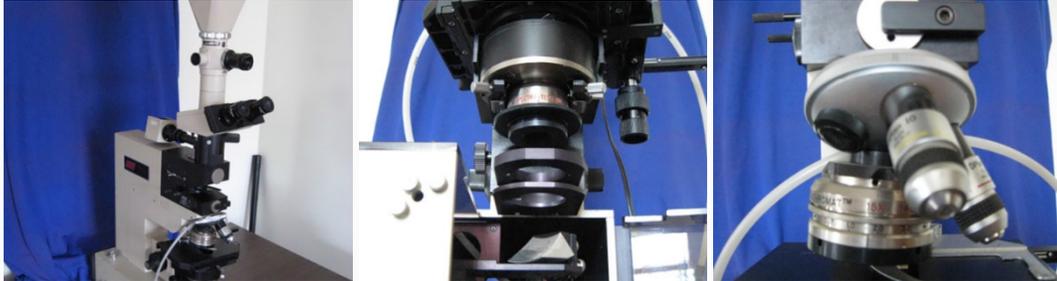
Asking \$20,000 for complete system.



ITEM # L1

SPECTRA-TECH 0044-003 INFRARED MICROSCOPE

Spectra-Tech 0044-003 Infrared Microscope. Model WHK 10X 201, Reflected & Transmitted light, multiple objectives, Polaroid 4×5 attachment.
\$6,500.00 USD.



MISCELLANEOUS FOR SALE

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

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Quick Jump To Items:

- Item #M406 Surface Combustion Parts Washer
 - Item #M405 Used Transformers For Sale
 - Item #M403 Houghton Aqua Quench 3699 Polymer (4)
 - Item #M402 Closed Loop Water Cooling System 15 GPM
 - Item #M400 Nitrogen Generating System 99.999 Purity
 - Item #M399 Eclipse Burners, Recuperators, Spark Igniters
 - Item #M396 Surplus Cast Link Belt HT Material
 - Item #M394 Hi Tech Weighing System
 - Item #M385 Giant Finishing Machine
 - Item #M381 Water Cooling System
 - Item #M380 Bronco Wheelabrator 36" Meshbelt
 - Item #M378 1 Surface Combustion Radiant Tube
 - Item #M370 SBS Quench Airs 3 Fan Units
 - Item #M366 Wheelabrator Rubber Belt Tumblast
 - Item #M365 Dual Lane Conveyor Washer
 - Item #M363 SBS Large 3 Fan Unit
 - Item #M348 Ipsen Dunk/Spray Washer 36" x 48" x 24"
 - Item #M346 SBS Quench Air Single Fan Unit
 - Item #M341 AFC Charge Car 36" x 48" Tray
 - Item #M334 Berg Water Chiller Nearly New
 - Item #M314 Holcroft Dunk/Spray Washer 24" x 24" x 36"
-

ITEM #M406

SURFACE COMBUSTION PARTS WASHER

Surface Combustion Parts Washer. Manufactured by Surface Combustion this is a Spray washer with working dimensions of 30" wide X 48" deep X 30" high. Gas fired with an operating temperature of 200F. Good overall condition. **Asking price of \$12,500 USD**

ITEM #M405

USED TRANSFORMERS FOR SALE

Allis Chalmers Substation Transformer (1). Remanufactured by Jordan Transformer LLC, August 2009, Job No. 4569. 69,000 Volts. Vendor has PCB test analysis, < 1 ppm. 6.49% KVA @ 12,000 KVA

- Limited usage last 4 years
- Serial # 26311018921
- All windings are copper & circular design
- 3 Phase 60 hertz substation transformer
- 12/16/20 MVA OA/FA/FA @ 55 Deg. C
- Original Manufacturer Allis Chalmers 4/1961

Best Offer



ITEM #M403

HOUGHTON AQUA QUENCH 3699 POLYMER (4)

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

Asking Price is \$2,500.00.

ITEM #M402

CLOSED LOOP WATER COOLING SYSTEM

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 #M400

NITROGEN GENERATING SYSTEM

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

Asking \$82,500.00 USD.



ITEM #M399

ECLIPSE BURNERS, RECUPERATORS AND SPARK IGNITERS

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

Asking \$1840 USD each.

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

\$695 USD each.

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

\$100 USD each.



ITEM #M396

SURPLUS CAST LINK BELT

Surplus Cast Link Belt. Used Omega HT Cast Link belt with HR 120 connecting rods. 4” pitch, 78” wide X 130’ long. Weight 26,741 pounds. Also available is a porcupine drive roll, 11’ long, 700 pounds. A tail roll 11’ long X 11” diameter, 700 pounds, entry and exit hearth

rolls 10.5' long X 6" diameter and a return roll 10.5' long X 14.4" diameter. Good condition. Buyer can inspect condition upon request.

Please call for pricing – Gord: 905.271.0033



ITEM #M394

HI TECH WEIGHING SYSTEM

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

Asking \$6,000 USD.



ITEM #M385

GIANT FINISHING MACHINE

Giant Finishing Machine. Manufactured by "Giant", Model GB-10 Spiral bowl with Internal Separation Vibratory Deburring and Finishing Machine. 10 cubic foot process capacity with 5 hp motor. Maximum load capacity 2,000 pounds. Bowl diameter 65", unload height 39".

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.



ITEM #M381

WATER COOLING SYSTEM

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

Asking \$7,500.00 USD.



ITEM #M380

WHEELABRATOR - BRONCO

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

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



ITEM #M378

1 SURFACE COMBUSTION RADIANT TUBE AND 4 SUPPORTS

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

Asking \$3,000 USD.



ITEM #M370

SBS QUENCH AIRS (2 AVAILABLE)

SBS Quench 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

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

DUAL LANE CONVEYOR WASHER

Dual Lane Conveyor Washer. Heated: Natural Gas. Dual Lane Washer Serial Number: 08-010 (2008). Max Temperature: N/A. Voltage: 480/3/60. Work Area: 11"W x 7"H. Each Lane External Dimensions: 8'W x 10'6H x 30'L – approx. Controls: Mounted and wired in an enclosure attached to the washer. Includes an Allen Bradley MicroLogix 1200 PLC and an

Allen Bradley "Powerflex 4" VFD to control conveyor belt speed. Description: This washer has three (3) stages, wash/rinse/blow-off. This washer is gas fired using Eclipse burner and gas train with a Honeywell UDC digital temperature control. Spray nozzles are located on top, both sides and bottom. Condition: Very Good.

Asking: \$39,500.00 USD.



ITEM #M363

SBS UNIT

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

Price: \$15,500.00.



ITEM #M348

IPSEN AUTOMATIC DUNK/SPRAY WASHER

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

submerged oscillation, overhead spray rinse. Overall dimensions of 7' 5" wide X 5' 4" long X 11' 8" high. Rebuilt,

Excellent condition asking \$35,000 USD.



ITEM #M346

SBS "QUENCHAIR"

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

Asking \$5,500.00 USD.



ITEM #M341

AFC CHARGE CAR

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

Asking \$28,500.00 USD.



ITEM #M334

BERG WATER CHILLER

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

Asking \$5,500.00.



ITEM #M314

HOLCROFT DUNK/SPRAY WASHER

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

and includes all necessary pushbuttons and signal lights. There is a dunk cycle timer and spray cycle timer. A Honeywell UDC 2000 digital temperature controller controls wash temperature. Good condition.

Asking \$18,500.00 USD.



SALT FOR SALE

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

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ITEM # S001 MESH BELT AUSTEMPER LINES (2 AVAILABLE)

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

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



VACUUMS FURNACES FOR SALE

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

[Contact Us](#)

Quick Jump To Items:

- Item # VF325 T-M Vacuum Furnace 2 Bar Quenching
- Item # VF324 T-M Vacuum Furnace 2 Bar Quenching
- Item # VF323 150 Ton Vacuum Hot Press (2 Available)
- Item # VF322 Vacuum Sintering Furnace, 2,000 C
- Item # VF321 Ipsen Vacuum Furnace
- Item # VF320 High Temperature Vacuum Furnace
- Item # VF319 Vacuum Induction Melting System
- Item # VF317 Twin High Temperature Vacuum HT Sintering Furnaces
- Item # VF316 AVS Vacuum Furnace 24" x 24" x 48"
- Item # VF315 AVS Vacuum Furnace (Rebuilt)
- Item # VF314 Ipsen Bottom Load Furnace 60" x 96"
- Item # VF313 Top Loading Vacuum Furnaces 2100 C
- Item # VF312 Vacuum Furnace 2400 C
- Item # VF311 Vacuum Furnace 6 Bar Quenching
- Item # VF307 Bottom Loading Vacuum Furnace 48" x 60"
- Item # VF305 Vacuum Hot Press
- Item # VF303 Surface Combustion Vacuum Temper Shell
- Item # VF301 Vac Aero 2 Bar Vacuum Furnace
- Item # VF300 Stokes Microvac Pump
- Item # VF299 Sunbeam Vacuum Furnace 36" x 120"
- Item # VF294 Vacuum Annealing Furnace 8" x 90"
- Item # VF289 Ipsen Vacuum Temper 12" x 16" x 24"
- Item # VF285 20" Right Angle Poppet Valves (4 available)
- Item # VF282 AVS Vacuum Debinding/Sintering Furnace
- Item # VF281 Surface Combustion Vacuum Furnace
- Item # VF271 Sintering/De-Wax Furnace 1400 C

Item # VF267 Semi-Continuous Titanium Diffusion Bonding Hot Press

Item # VF266 Kinney 75 CFM Vacuum Pump

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

Item # VF255 Roots Gas Blower

Item # VF254 MD Blower, 350 CFM

Item # VF243 35" Diffusion Pump

Item # VF242 35" Diffusion Pump

ITEM # VF325

T-M VACUUM FURNACE 2 BAR QUENCHING

T-M Vacuum Furnace. Built in 2009 this T-M Vacuum Furnace has a Work Zone: 12" wide x 24" long x 12" high with All Metal Hot Zone (less than 5 years old). Temperature uniformity: 1000F – 2400F +/- 10F with 3 zones of control for the hot zone. 10" Diffusion Pump with a TeleVac MM200 vacuum gauge. 2Bar Gas Quench. (Argon or Nitrogen gas) with an Overall Dimension of the furnace being: 82" wide x 72" long x 96" high. Great working condition and the Ability to see the furnace and run sample parts.

Price to sell: \$67,500

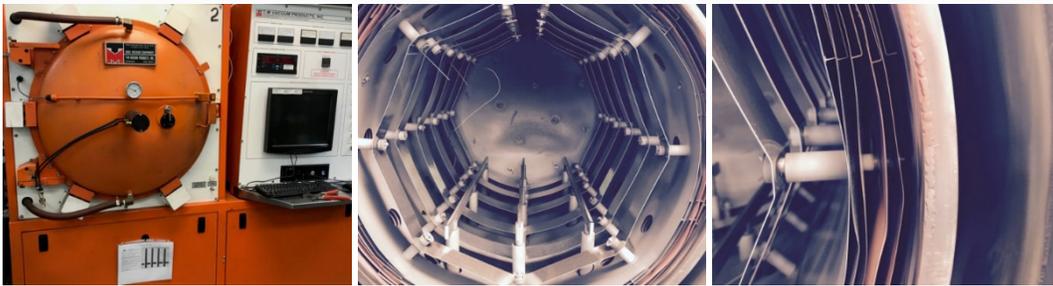


ITEM # VF324

T-M VACUUM FURNACE 2 BAR QUENCHING

T-M Vacuum Furnace. Built in 2009 this T-M Vacuum Furnace has a Work Zone: 12" wide x 24" long x 12" high with All Metal Hot Zone (less than 5 years old). Temperature uniformity: 1000F – 2400F +/- 10F with 3 zones of control for the hot zone. 10" Diffusion Pump with a TeleVac MM200 vacuum gauge. 2Bar Gas Quench. (Argon or Nitrogen gas) with an Overall Dimension of the furnace being: 82" wide x 72" long x 96" high. Great working condition and the Ability to see the furnace and run sample parts.

Price to sell: \$57,500



ITEM # VF323

150 TON VACUUM HOT PRESS (2 AVAILABLE)

(2) 150-Ton Vacuum Hot Presses

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

consist of a Yokogawa UP750 two-loop programmable temperature/pressure controller with 300 programs and 3,000 segments. The UP750 will control the temperature and the pressure on the hydraulic ram on the same timeline. • Mechanical vacuum pump.

Asking \$450,000 USD Each



ITEM # VF322

VACUUM SINTERING FURNACE, 2,000 C

Vacuum Sintering Furnace, 2,000 C. Horizontal Vacuum Sintering Furnace System for processing graphite and ceramics. Manufactured by AVS, Model HGF-22-21-62-2000. Work zone is 22" wide x 21" high x 62" deep. 12 cubic feet, maximum load of 350 kgs.

Temperature: 2000 °C maximum operating temperature. Temperatures above 1700 °C require partial pressure or positive pressure. Maximum heat rate is 10 °C/min ramp rate for room temperature to 1600 °C, ± 10 °C uniformity @ up to 1600 °C in vacuum. Rotary piston roughing pump. Evacuates chamber to 20 micron in 10-15 minutes, empty (5×10^{-3} Torr Ultimate vacuum) 5 μ /hr. leak rate. Process Gasses – Argon, Nitrogen, 1% Methane in Nitrogen. Controls Fully automatic operation with ACE™ control/ Data Acquisition System.

Chamber; HORIZONTAL JACKETED CHAMBER – nominal 56" diameter x 82" long flanged, on legs. All stainless-steel chamber, interior jacket and flange water-cooled. Two door containing hinges and manual door clamps. The chamber includes a 4" flanged bottom port designed for future applications and flexibility. Two site ports are included and set up with gas purged pyrometer sight port assemblies. Two load carts with battery operated hydraulic lift and roller top are provided with the furnace for use with the two hearths that are provided for the hot zone.

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

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

Asking \$180,000 USD.



ITEM # VF321

IPSEN VACUUM FURNACE

Ipsen Vacuum Furnace:

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

Price: \$58,000 USD.



ITEM # VF320

HIGH TEMPERATURE VACUUM FURNACE

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

Asking \$100,000 USD for everything.



ITEM # VF319

VACUUM INDUCTION MELTING SYSTEM

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

Asking \$285,000 USD.



ITEM # VF317

TWIN HIGH TEMPERATURE VACUUM HT & SINTERING FURNACES

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

Asking \$275,000 USD for Both.



ITEM # VF316

AVS VACUUM FURNACE

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

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



ITEM # VF315

AVS VACUUM FURNACE (REBUILT)

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

Asking \$195,000 USD.



ITEM # VF314

IPSEN BOTTOM LOAD VACUUM FURNACE

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

Asking Price: \$325,000 USD.



ITEM # VF313

TOP LOADING VACUUM FURNACES (6 AVAILABLE)

Top Loading Vacuum Furnaces (6 available). Manufactured by GT Technologies, Model # AMPF-4836HP – 2015. Working dimensions of 1200mm diameter x 900mm High. Operating temperature of 2100C. Controls by Loy Instruments (Honeywell graphic touchscreen). This unique ultra high temperature furnace is high vacuum, has resistance heating with all graphite hot zone and graphite felt insulation for high efficiency operation. 480 volt 3PH 50/60 HZ, 160 KVA. Maximum load 1,000 KG. Double Wall Stainless Steel Vessel construction. Platform with Stairs included. Halogen Gas Purge equipped, Dry

Vacuum Pumping System with Blower. Graphite Purity levels to less than 5ppm. Cycle time 72 – 84 hours. 10 – 3 Torr vacuum level achievable. Options: Exhaust Scrubber System, Overhead Crane. Very good condition.

Asking \$175,000 USD each.



ITEM # VF312

2400C VACUUM FURNACE

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

Asking \$149,000 USD.



ITEM # VF311

VACUUM FURNACE 6 BAR QUENCHING

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

Asking 155.000 Euro.



ITEM # VF307

BOTTOM LOADING VACUUM FURNACE

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

Please call for pricing.



ITEM # VF303

SURFACE COMBUSTION VACUUM TEMPER

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

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.

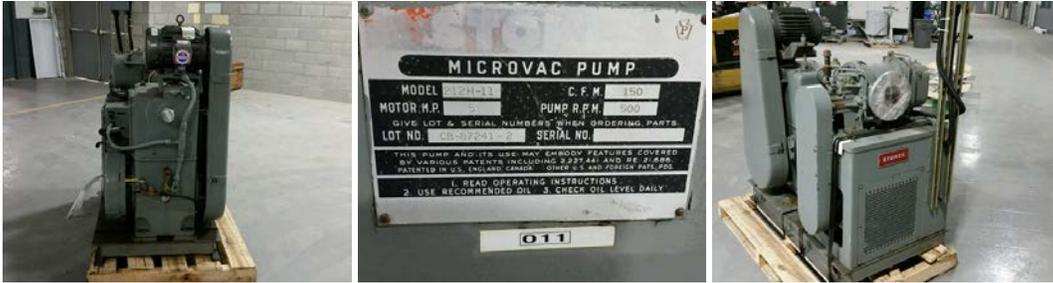


ITEM # VF300

STOKES MICROVAC PUMP

Stokes Microvac Pump. Model #212H-11 150 CFM 5HP motor. Roots Rotary Lobe Booster Pump. ID #839 697 020. Designation #38-RGS. Skid Mounted 1896 lbs.

Asking Price: \$6600 USD or best reasonable offer.



ITEM # VF299

SUNBEAM VACUUM FURNACE

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

Asking Price: \$95,000 USD.



ITEM # VF294

VACUUM ANNEALING FURNACE

Vacuum Annealing Furnace. Manufactured by Thermionics this is a custom designed vacuum annealing furnace designed to heat treat wire up to 210 cm long. The vacuum chamber has an 8" Dia. X 90" effective working length. The operating temperature was developed for a maximum operating temp of 1200° F, The vacuum nominal level (continuous) duty was developed as 1×10^{-6} Torr. Maximum vacuum level to operate in continuous duty is 5×10^{-8} Torr. The unit was designed to use N₂ gas. The unit was an R & D unit that was built in 1998, but has had little to no use. Excellent condition. New this was \$90,000 USD.

Asking Price: \$29,000.00 USD.



ITEM # VF291

SMALL TOP LOAD VACUUM FURNACE

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

Asking Price: \$10,000 USD



ITEM # VF289

IPSEN VACUUM TEMPER FURNACE

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

Asking Price: \$59,500 USD.



ITEM # VF285

20" RIGHT ANGLE POPPET VALVES (4 AVAILABLE)

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

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.

Price: \$ 1,800 USD (working, but no warranty, 30 Day Return). Std.



ITEM # VF282

AVS VACUUM DEBINDING/SINTERING FURNACE

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

Asking Price: \$169,000 USD.



ITEM # VF281

SURFACE COMBUSTION VACUUM FURNACE

Surface Combustion Vacuum Furnace. Model: IHVP-364830-2, S/N: VC-42202-1. Work Zone Size: 42"W x 60"L x 30"H. Hot Zone: All graphite, including hearth and elements. Vacuum System: Requires Stokes 1722 Skid (412H mechanical pump and Stokes 615-1 vacuum blower. Both are missing), 16" Port for diffusion pump, but no pump. Power Supply: 250 kW 460V/3Ph/60Hz. Max. Temp.: 2400F. Max. Load: 3000 lb at 1900F. Cooling Gases: Nitrogen, Argon, Helium. Gas Quench Capability: +12 PSI positive pressure. Cooling Fan: Top mounted. Controls: Honeywell DCP-7700 Temp. Controller. Eclipse EMC-560 Hi-Limit. Honeywell Strip Chart Recorder. Philips Model 316 Vacuum Controller. Control Thermocouple: Ni/Ni-Mo. Fair condition. Location: Southern California.

Asking Price: \$29,000 USD.



ITEM # VF271

SINTERING / DE-WAXING FURNACE

Sintering / De-Waxing Furnace. Horizontal sintering furnace with wax condenser 1470°C operating temperature. Water cooled 304 stainless steel chamber with mild steel flanges. Graphite hot zone – 24" wide x 18" high x 36" deep, with hearth rails. Graphite retort – 4 to 5 cubic foot work space, shelves, graphite rollers, de-wax tube and -cooling. 5 HP recirculation cooling fan system – cooling flaps in insulation and retort. Wax condenser assembly with hot water circulation system and removable wax receiver pot. Power supply – transformer-type, low voltage secondary, nominal 250 kW. Vacuum pumps – Stokes 212-H, 150 cfm rough pump, Roots 615, 1600 cfm booster. Dynamic partial pressure gas system. Unit can be seen in operation and is available for immediate delivery.

Asking Price: \$299,000 USD.

ITEM # VF267

SEMI-CONTINUOUS TITANIUM DIFFUSION BONDING HOT PRESS

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

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

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

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

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

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

As is \$890,000.00 USD



ITEM # VF266

KINNEY 75 CFM VACUUM PUMP

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

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



ITEM # VF265

STOKES 149H-11 80 CFM VACUUM PUMP

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

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

MD Blower, 350 CFM. Rebuilt (per owner) M.D. Pneumatics 350 CFM gas blower, Model 11-3210, S/N 1735R A23, on skid but needs motor. Location: Pacific North-western U.S.

Asking Price: \$3,000.00 USD. 30 Day Right of Return, if unhappy.



ITEM # VF243

35" DIFFUSION PUMP

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

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



ITEM # VF242

35" DIFFUSION PUMP

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

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

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



NEW EQUIPMENT

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



AFC-Holcroft of Wixom,

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



ALD Vacuum Systems of Wixom,

Michigan provides 'The Solution' to your high volume, vacuum based heat-treating equipment requirements.

We provide process capabilities such as Low Pressure Carburizing (LPC) and high pressure gas quenching (HPGQ) as well as vacuum oil quenching, neutral hardening and on and on. Automated processing of heat treat is the most economical means to gaining the most from your capital investment.



Custom Electric Manufacturing

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



Dry Coolers Inc. of Oxford,

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



Super Systems Inc.

Develops and manufactures products for the thermal processing industry. Our products include probes, analyzers, controllers, software solutions, flow control and

engineered systems. We have extensive experience in addressing industry demands with technology to help our customers be more efficient and produce better quality products. Our state-of-the-art manufacturing facility in Cincinnati, Ohio, and offices around the globe give us the resources to address the instrumentation, software and technical needs of the industry.



South-Tek.

Manufactures a variety of Nitrogen Generators, from those designed to output a few liters per minute of Nitrogen flow rate for table top laboratory applications, to designs capable

of producing 75,000 cubic feet per hour to meet the demands of some of the largest industrial plants. Our systems are capable of producing Nitrogen purities of up to 99.9995% (5 PPM and lower). Whether you are using nitrogen for vacuum quenching, inerting atmosphere furnaces or for required safety purge South-Tek Systems has your solution.

HEAT TREAT CENTRAL

- High Quality Low Cost Base Trays
- **Investment cast only**
- Fast Delivery for in-stock trays¹
- **Surface Combustion Allcase Tray**
- UBQ Furnace Tray
- **Site-specific custom trays**
- Based on existing castings
- **No setup or pattern fees²**
- Industrial alloy grades available
- **HU, HT, Super NA22H, ...**

Please send your enquiries to:

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

¹While supplies last

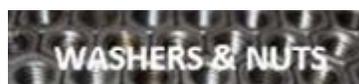
²Applies to standard design trays only. Some restrictions apply.

©Heat Treat Central

Moly

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

Bob and Ben Grammer welcome the opportunity to help with your requirements Sales@gvtinc.com Phone: 208 765-6854



EMPLOYMENT OPPORTUNITIES ADVERTISING

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

Employment Opportunities

Quick Jump To Items:

- Item # 0334 Service Manager
- Item # 0333 Electrical Field Service Technician
- Item # 0332 Controls Engineer
- Item # 0331 Process Metallurgist
- Item # 0330 Plant Manager
- Item # 0329 Sales Engineer
- Item # 0328 Process Metallurgist
- Item # 0325 Maintenance Technician/Supervisor
- Item # 0324 Sales Rep
- Item # 0323 Heat Treating Plant Manager

ITEM # 0334

SERVICE MANAGER

G-M Enterprises is located in Corona, CA and is a world leader in supplying industrial furnaces for heat processing and aerospace industries throughout the world. We are seeking a Service Manager.

REQUIREMENTS:

- Bachelor's degree in Engineering.
- Ten (10) years of Supervisory, technical experience.
- Experience running Field Service Team.
- Experience in quoting customers inquiries.
- Strong Heat Treat, Vacuum Furnace, Aerospace or Automotive knowledge, with hands on skill.
- Interface with Engineering , Manufacturing Purchasing and Marketing Departments.
- Able to interact with customers at all levels.
- Develop, solicit and open new accounts.
- Good communications skills. (Verbal and written)
- Computer proficiency. (MS-Office)
- Work with Manufacturing and Vendors to determine timing required to fulfill orders/service.
- Ability to read and understand mechanical blueprints.
- Over ten years of manufacturing experience.
- Team player that helps achieve company goals and objectives.
- Strong problem solving skills – troubleshoot and solve.
- High energy level and ability to multi-task in fast paced environment.
- Willing to give that extra effort.
- Customer Service oriented.
- Attentive to detail.

E-mail Resume to: sjhawar@gmenterprises.com

ITEM # 0333

ELECTRICAL FIELD SERVICE TECHNICIAN

DESCRIPTION: G-M ENTERPRISES, headquartered in Corona, CA, supplier of high performance Heat Treating Vacuum Furnaces, Atmospheric Furnaces, Maintenance, Service and Parts is seeking Service Technicians.

REQUIREMENTS: Position is primarily responsible for providing installation, start up and technical support to worldwide service operations and providing field service support. Travel is about 50%.

Vacuum Products:

Minimum, 10 years of heat treat vacuum equipment and leak detection experience.

Minimum, 10 years of electrical field service experience.
Vacuum and Temperature Instrumentation and Controls experience.
GE & Allen-Bradley PLC temperature surveys.
Over-all troubleshooting, repair and maintenance experience.
Problem solver with a project ownership attitude.
Positive attitude, self starter, good communication skills, good decision making. Flexibility to quickly adapt to changing project and schedule priorities.

LOCATION: Various

E-mail Resume to: sjhawar@gmenterprises.com

ITEM # 0332 CONTROLS ENGINEER

Controls Engineer. ProTech Thermal Services, in Norco, Cal, provides a wide range of solutions for many makes and models of industrial heat treating equipment. ProTech manufactures Vacuum, Atmosphere and Retort Furnaces, as well as Rebuilt and Replacement Hot Zones, to meet our customer's needs. We are looking for an energetic self-driven individual to add to our electrical engineering staff. Requirements for the position of Controls Engineer:

*2 years minimum of programming and troubleshooting experience in: Vacuum furnaces used for Industrial Heat Treating (combustion furnace exp. a plus)

*HMI: Wonderware InTouch

*PLC Programming: HC900 and GE Preferred (experience with Allen Bradley and Siemens also a plus)

*Experience with Microsoft Office, Networking, and computers

*Familiar with National Electrical Code

*Travel: approx 25-30% of the year, rest of time either local travel or shop work

Send all resumes and desired salary to: Lisa Grier, lgrier@protechthermal.com

ITEM # 0331

PROCESS METALLURGIST WANTED

Process Heat Treat Metallurgist Wanted. Oerlikon Fairfield has an opening for a process metallurgist in our Lafayette, IN facility.

Oerlikon Drive Systems, with its brands Oerlikon Graziano and Oerlikon Fairfield, is a leading provider of gear, drive and shifting solutions. We are a global manufacturer with 10 manufacturing locations in Italy, China, US and India, and over 5000 employees. Oerlikon Drive Systems' products are used in a wide range of applications to operate machinery and equipment for agriculture, construction, energy and mining, and transportation. Our product portfolio includes solutions from 4,000,000 Nm output drives used with self-elevating marine platforms to the latest technology with dual clutch and continuously variable transmissions. Excellent manufacturing, engineering and innovative expertise have made both the brands the "Global drive systems supplier of high-tech solutions in all mobility markets," for over 90 years.

Position responsibilities include:

- Manage, lead and train heat treat pyro group
- Initiate and lead projects such as furnace improvements, customer requirements including TPG certification, and capital projects.
- Help create and maintain process recipes.
- Evaluate final heat treat results.

Qualifications include:

- Degree in Metallurgy/Materials or Mechanical Engineering
- History of working with atmosphere furnaces (3-5+ years preferred)
 - Knowledge of carburizing, nitriding, and neutral hardening processes
- Willingness to work flexible hours

If interested, please submit resume to:

<https://oerlikon.clearcompany.com/careers/jobs/18be536b-5390-9c7a-2e46-4dfe033f8ae6/apply?source=571636-CS-25789>



ITEM # 0328

PROCESS METALLURGIST WANTED

Process Metallurgist Wanted. Do you get fired up about heat treating and metals? Advanced Heat Treat Corp. has an opening for a Process Metallurgist for our Monroe facility in Monroe, MI. Our primary services for this location include ion and gas-nitriding for heat treatment, a surface hardening process, for a wide variety of markets. Advanced Heat Treat's vision is Exceeding Customer Expectations with UltraGlowing Results. With our 35+ years of heat treat experience and 20+ services, we've helped solve part problems that have affected the Jaws of Life, military weapons, agricultural equipment, prosthetics, commercial airplanes and MUCH MORE! From the jobs of a small machine shop to a multi-million dollar aerospace project – we find solutions. AHT has four strategically located facilities, 2 in Waterloo, IA, 1 in Monroe, MI and 1 in Cullman, AL. We offer the highest standards of quality-ISO/TS16949 and NADCAP certified. AHT offers its ULTRAGLOW surface treatment process for engineered steel, cast iron, stainless steel and titanium parts. Qualifications include a degree in Metallurgy/Materials Engineering, or related field, as well as experience in a heat treat environment. Position responsibilities include:

- Manage and lead large projects such as new customer onboarding, changes in customer requirements, and new equipment purchases.
- Calculate process variable necessary to achieve specifications by using historical run data and charts, case depth, as well as other appropriate information related to heat treatment.
- Authors process instructions by determining process parameters and techniques required to achieve customer requirements.
- Supervises Laboratory Technicians.
- Willingness to travel between AHT facilities as needed for training and consultation.
- Check out further job responsibility for this position at www.ahtweb.com.

Please submit resume to: hr@ion-nitriding.com or complete company application at www.ahtweb.com(careers).

ITEM # 0325

MAINTENANCE TECHNICIAN/SUPERVISOR – CHICAGO, IL

Maintenance Technician/Supervisor – Chicago, IL.

Position Summary:

- Performs all aspects of preventative and corrective maintenance on heat treat related systems including, but not limited to: furnaces, quenching equipment, material handling equipment, electrical instruments, and control panels.
- Provide instruction and assistance to other technicians as needed.
- The heat treat maintenance technician/supervisor must have the ability to identify and correct any safety-related issues and perform independent equipment evaluations to identify potential equipment failures.

Responsibilities:

- Troubleshoot and repair heat treat equipment.
- Perform electrical troubleshooting and repairs.
- Perform repairs on fork lift equipment, cranes, and hoists.
- Troubleshoot and repair pumps, piping, hoses, seals, valves, bearings, and gearboxes.

Please forward resume to: applyforheattreatchicago@gmail.com

**ITEM # 0324
SALES REP**

Sales Rep. Vacuum heat treat company Solar Atmospheres, located in Hermitage, PA is currently seeking a Sales Representative in the Texas and Oklahoma area. Solar is interested in working with a well-experienced Representative that has strong ties, but not limited to, the ever growing Aerospace and Energy markets. A successful candidate would be familiar and experienced in the following areas;

- vacuum heat treating and brazing
- vacuum hardening, annealing, age hardening, stress relieving and other related thermal processing services.
- nickel base alloys
- titanium alloys
- austenitic stainless steels
- PH grade stainless steels

Please forward resumes to mikep@solarwpa.com



**ITEM # 0323
HEAT TREATING PLANT MANAGER**

Heat Treating Plant Manager. The Heat Treat Production Manager is responsible for general supervision of all phases of production heat treating including: production, quality, maintenance, receiving and shipping in our Eastern Pennsylvania Facility. Responsibilities

also include recruiting, hiring and training personnel and facility/physical plant up-keep among other things. Principal Duties and Responsibilities:

1. Manages, supervises and coordinates activities of workers engaged in hardening, tempering, annealing, and other Vacuum heat-treating processes to condition metal work pieces and products, applying knowledge of heat-treating processes and properties and structure of materials.
2. Maintain and expand outside customer base for Heat Treating and Brazing services. Build and maintain rapport with key customers.
3. Schedule Furnace cycles according to customer demand.
4. Communicate with Customers regarding contract, technical and delivery requirements.
5. Perform contract review and enter new orders into database to generate shop travelers used in production.
6. Encourage and promote operating in a continuous improvement environment. Remove waste and constraints from the production processes to improve efficiencies, enhance productivity and to attain established goals.
7. Ensure all members of the manufacturing team are aware of safety policies to provide a safe workplace for our employees.
8. Work closely with shop foremen and maintenance personnel.
9. Work closely with quality personnel to review product consistency, customer requirements and determine areas of improvement.

Knowledge, Skills and Abilities Required:

1. Bachelor of Science in Metallurgy, Metallurgy Engineering or Material Science and Engineering discipline or Equivalent Manufacturing experience required. A minimum of 5 plus years of experience in heat treating.
 2. Previous experience/best practices implementing and using continuous improvement tools such as; Six Sigma, 5-S, Lean Manufacturing, etc. to drive improvement.
 3. Experience with Aerospace and Nadcap requirements a plus.
 4. Previous experience/broad understanding of safety systems and enforcement of safety rules and policies.
 5. Excellent planning and organizational skills, with the ability to balance production and maintenance needs.
 6. Demonstrated ability to motivate people, assess and develop employee skills.
 7. Motivated self starter and proactive problem solver a must
- Equal Opportunity Employer, including disabled and veterans.

Salary Commensurate with Experience. 401k, Paid Vacation & Sick time, Health Benefits. Please send resume's to; heattreatquality@yahoo.com.

SEEKING EMPLOYMENT ADVERTISING

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

In Parting

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

Gord Montgomery,

W.G. Montgomery Limited

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