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JUNE ISSUE 2017

THE MONTY

Everything to do with heat treating

HEAT TREAT NEWSLETTER

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INTRODUCTION

Welcome to the June 2017 issue of "**The Monty**" covering the latest news and trends in the heat treating industry, an issue which we would describe as full of optimism. While the past year has not been a bad one for heat treaters it has also not been one that many of us will remember with great joy. That appears to be changing though and we confidently predict that we are all looking and good times ahead. So read on and feel free to provide us with your thoughts and comments.

Best regards,
Gord

the vital link...

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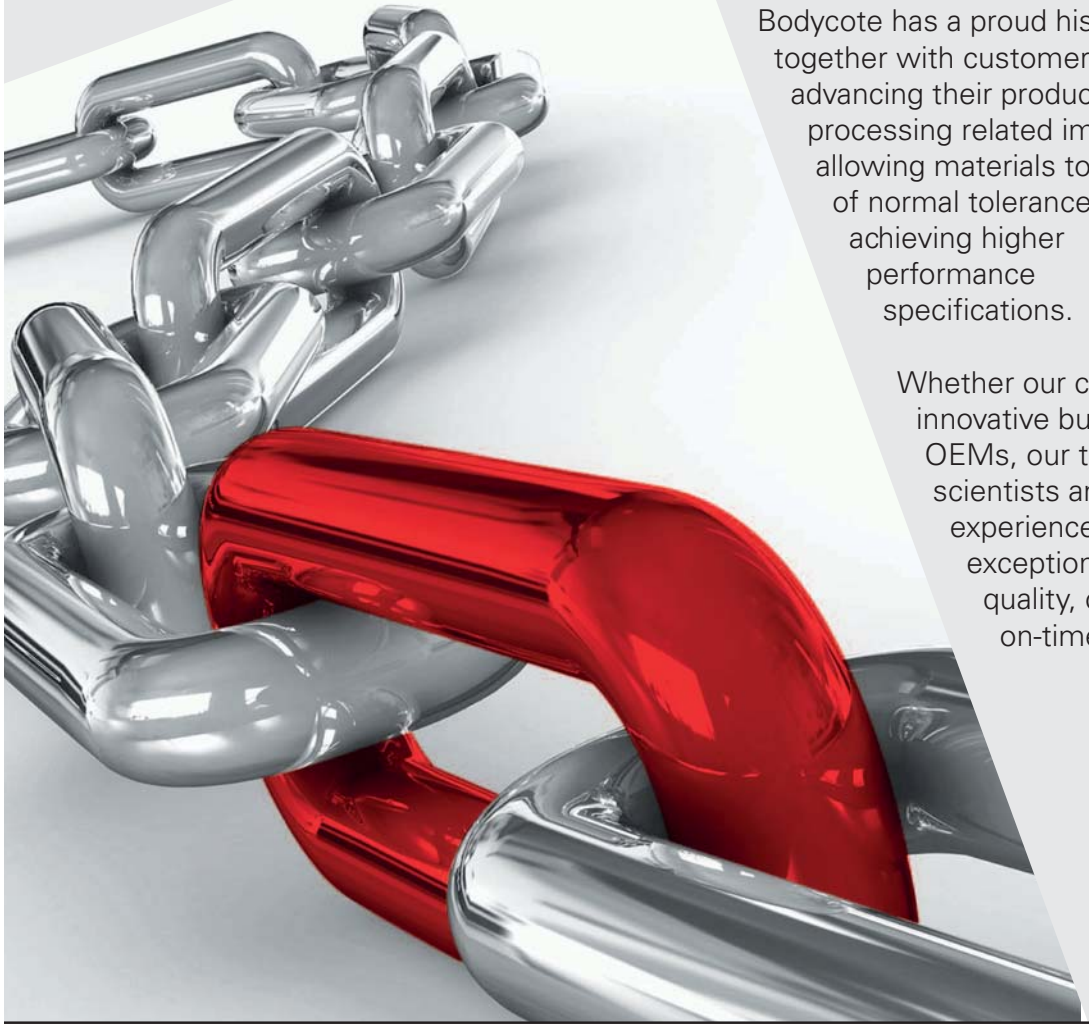

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HEAT TREAT NEWS

William Gordon Montgomery 1934-2017

It is with great regret that we announce the passing of William (Bill) Gordon Montgomery on May 31 2017. Bill was born in Pittsburgh, PA and graduated with a degree in mechanical engineering from McGill University in Montreal, Quebec. Following a career with Union Carbide Bill started a manufacturers rep firm under the name William G. Montgomery Ltd., in 1969, which was followed by "The Monty" in 1999. Over a period of time the rep business eventually focused entirely on the heat treating industry. Amongst the first companies which WG Montgomery Ltd., represented were Pifco (now part of AFC-Holcroft), Marathon Monitors, SBS and Alloy Engineering. While Bill retired a few years ago he maintained a keen interest in the heat treating industry when he was not traveling or spending time at his cottage on the Canadian Great Lakes. The photo below was taken just 2 months ago and shows Bill with his only great grandchild Alexander Montgomery Parkes. His experience and love of the industry will be missed. May 31, 2017

Vacuum Engineering Services Co., Inc., Sold

Vaccum Engineering Services Co., Inc (VESCo) located in East Windsor CT, USA was formed in 1983 to provide support services to the vacuum processing industry. Since that time, VESCo has specialized in the repair, modification, and reconditioning of vacuum heat treating equipment and along the line built up a good little business in the process. With the owner getting older and looking forward to retirement the company went on the market a few months back and as a result of a mention on "The Monty" the company has found a new owner, an owner which we will mention within the next week or so. The new owner has some ambitious plans so we believe we will be hearing a lot more about the company in the future. May 31, 2017

Solar Atmospheres

Solar Atmospheres of Western PA announces that it has been awarded Nadcap 24-month merit status. Susan Generalovich, Quality Manager says: "Teamwork! I am so proud of our entire Solar team. The only way to achieve high quality standards is to have every member pulling in the same direction. That is what we have here at Solar Atmospheres of Western PA. From top management to the guys on the floor, everyone is focused on quality. We know this from our visitors and our customers. They appreciate the care they see used on their products and on our facility."

"Congratulations to Solar Atmospheres on successfully passing what may be the aerospace industry's most stringent process capability assessment audit," said Joe Pinto, Executive Vice President and Chief Operating Officer at the Performance Review Institute. "Nadcap audit criteria are widely acknowledged to be hard to meet and companies like Solar Atmospheres who succeed at doing so, rightfully deserve recognition." For additional information about Solar Atmospheres of Western PA, contact Mike Johnson at 866.982.0660, ext. 2223, or mike@solarwpa.com, and visit www.solaratm.com.

About Nadcap. Administered by the Performance Review Institute, Nadcap is an industry-managed approach to conformity assessment that brings together technical experts from both Industry and Government to establish requirements for accreditation, accredit Suppliers and define operational program requirements. This results in a standardized approach to quality assurance and a reduction in redundant auditing throughout the aerospace industry.

PRI is a global provider of customer-focused solutions designed to improve process and product quality by adding value, reducing total cost and promoting collaboration among stakeholders in industries where safety and quality are shared goals. PRI works closely with industry to understand their emerging needs and offers customized solutions in response. Learn more at www.p-r-i.org or contact PRI at PRI@p-r-i.org May 31, 2017

Monday Morning Briefing

Case hardening basics: Nitrocarburizing vs. carbonitriding. Rob Simons a Metallurgical Engineer with Paulo one of the largest commercial heat treaters in North America is sharing with us the differences between Nitrocarburizing and carbonitriding. May 30, 2017

Case hardening basics: Nitrocarburizing vs. carbonitriding; Confusion surrounding the case hardening techniques of nitrocarburizing and carbonitriding prove the point that it's easy to get lost in the nomenclature behind heat treating processes. That comes with the territory. Metallurgy is complicated. But there's value to explaining the differences between these techniques and the benefits that result from their use, including cutting down on the confusion to help manufacturers better understand what goes on in the heat

treater's furnaces.

Case hardening; Case hardening refers to the "case" that develops around a part that is subjected to a hardening treatment. Nitrocarburizing and carbonitriding both make a workpiece surface harder by imparting carbon, or carbon and nitrogen, to its surface. Material, part specs and intended uses dictate whether nitrocarburizing or carbonitriding is the best case hardening method.

Carbonitriding; During carbonitriding, parts are heated in a sealed chamber well into the austenitic range—around 1600 degrees Fahrenheit—before nitrogen and carbon are added. Because the part is heated into the austenitic range, a phase change in the steel's crystal structure occurs that allows carbon and nitrogen atoms to diffuse into the part. Nitrogen is added to low-carbon, low-alloy steels because they don't harden well without the boost the nitrogen provides. The nitrogen comes in the form of ammonia gas molecules that crack apart on the surface of the part to provide nitrogen that diffuses into the steel. Adding nitrogen also helps a part maintain hardness during use in high-temperature operational conditions. Carbonitriding typically achieves greater case depths compared to nitrocarburizing. There's no theoretical limit to how deep a case can be achieved in either process, but a practical limit is the time and resources one is willing to spend to achieve certain case depths. The carbonitriding process takes from a few hours up to a day or more to achieve the desired results: a part with high surface hardness but with a relatively ductile core. The process concludes with a quench. Carbonitriding is used to harden surfaces of parts made of relatively less expensive and easily-machined steels, like stamped automotive parts or wood screws. The process makes parts more resistant to wear and increases fatigue strength.

Nitrocarburizing; Nitrocarburizing also entails the dissolution of carbon and nitrogen into a workpiece, but, compared to carbonitriding, more nitrogen is used in nitrocarburizing. There are two forms of nitrocarburizing: austenitic and ferritic. Austenitic nitrocarburizing refers to the temperature of the nitrogen-enriched zone at the surface of a part. A phase change occurs in that zone, allowing the nitrogen to diffuse. Ferritic nitrocarburizing is conducted at a lower temperature where no phase change occurs. Case depths as a result of nitrocarburizing are typically more shallow compared to carbonitriding. Ferritic nitrocarburizing is unique in that it offers case hardening without the need to heat metal parts into a phase change (it's done at between 975 and 1,125 degrees Fahrenheit). Within that temperature range, nitrogen atoms are soluble in iron but the risk of distortion is decreased. Due to their shape and size, carbon atoms cannot diffuse into the part in this low-temperature process. Workpieces improved by nitrocarburizing include drive train components in automobiles and heavy equipment, firearm components like barrels and slides and dies for manufacturing processes. Nitrocarburizing decreases the potential for corrosion in parts and enhances their appearance. The process generally takes only a few hours.

Knowledge is power; The nitrocarburizing and carbonitriding processes can be complicated, but they're also critical to ensuring parts can stand up to the environments in which they'll be used. By learning more about these and other heat treating processes, you're taking a big step toward more productive future discussions and a stronger relationship with your heat treatment partner.

Business Opportunities

Please take a look at our most recent employment offerings. If you see anything you like don't hesitate to get in touch with us at website@themonty.com or 905-271-0033. May 30, 2017

Item # O326 Straightener / Quality Inspector / Furnace Operator
Item # O325 Maintenance Technician/Supervisor
Item # O324 Sales Rep
Item # O323 Heat Treat Plant Manager
Item # O322 Metallurgist / Materials Engineer
Item # O321 Heat Treating Manager/Metallurgist/Materials Engineer Wanted
Item # SE 2 Direct Hire for Sales

Modern Metals India

We welcome our most recent advertiser, Modern Metals India one of the larger commercial heat treaters in India. The company offers a number of processes ranging from vacuum hardening to plasma nitriding to Induction hardening and cryogenic processing. We will have more details about the company in the near future but for the time being we can say that Modern Metals India is part of the rapidly growing heat treating industry in India. May 30, 2017

Monday Morning Briefing

Jones Metal Products company in West Lafayette, Ohio was just honored by Lockheed Martin as a top small business supplier for products and serviced to its Missiles and Fire Control business. In Jones Metal's case it was exemplary work by the company's aluminum heat treating services. Jones Metal seems to offer a variety of services including aluminum heat treating and vacuum heat treating. Out on the west coast of the US manufacturers rep **Marty Keylon** (an ex Bodycote guy) has added a couple of lines to the ones he currently has. The new lines included **United Process Control (UPC)** who offers pretty much everything to do with furnace controls and **Dibalog** an energy optimization company based in Germany. We have a great deal of experience with Dibalog and can say they have a good product with several installations in Canada and the US but for reasons unknown to us it has never become a very common product for heat treaters-a shame as it does a good job. Furnace company **Abbott** is having their third annual continuous furnace training symposium November 7-9 in Monterrey, Mexico. This being the third event we have to assume that it has been a success in years past. When we think of Abbott we think sintering furnaces more than anything else.

Seems to be a lot of events in Mexico these days, here is another one which happened recently. We will let Swiss furnace builder **Codere** tells us about it; *"Codere want to inform readers of a very successful Open House organised with our recent customer* **Termitec** *in Puebla. In the past Termitec concentrated on Tenifer treatment with management researching the market where they see growth in the future for a local market in Puebla dominated by tooling & automobile industries. At the event below was leading local and international companies along with local government officials interested to learn more about our modular System 250. There was 75 participants at this event from over 40 companies all with an interest in learning about an area Codere has seen significant recent growth. Codere's team presented the various construction, environmental, process and technical advantages of their patented System 250 over more conventional designs for market leaders in the bearing, aerospace and automobile industries. The general consensus was that certain heat treaters today are looking for alternatives that allow quenching of the load into molten salt to obtain martensitic or bainitic structures without temperature losses and without contact with air during transfer. Salt quenching also offers considerable advantages over oil in terms of reduced distortion available at Termitec. In the photo below are the people involved in this workshop with David Howard Sales Manager and Jean-Marie Hertzog Metallurgist from Codere SA along with Termitec management. Further information on Termitec can be viewed on http://www.termitec.com.mx Further information on our products can be found at www.codere.ch"*

In the UK we have this news; *"The heat treatment division at* **Keighley Laboratories Limited** *has achieved the Nadcap (heat treating) accreditation for its Nitriding process, adding to the firm's growing list of accreditations and prime approvals. This achievement demonstrates the firm's commitment to delivering the highest standards of heat treating to the aerospace industry. "Congratulations to Keighley Laboratories on successfully passing what may be the aerospace industry's most stringent process capability assessment audit," said Joe Pinto, executive vice president and chief operating officer at the Performance Review Institute. In addition, the heat treatment division has recently undergone a successful annual BSI reassessment. Managing director, Debbie Mellor said: "The range and number of accreditations held by Keighley Laboratories builds the support and confidence of our customers. "They highlight the company's achievements and strengths, particularly important in our competitive market."*

Want to know about the largest furnace in Australia? This one was built by **Furnace Engineering** near Melbourne. *"This big beauty (26 m long x 7m wide x 7m high) is configured to provide normalising and stress relieving of welded steel pressure vessels. After loading of the vessel by overhead crane, our furnace "walks" over the vessel and lowers itself onto the hearth; the door is positioned and then the heat treatment cycle is run. It is powered by pulsing gas burners and runs to a maximum temperature of 1000˚C, and all with close temperature uniformity throughout the cycle."*

Rohde, Hanau, Germany has this to say; *"The expert committee 3 for nitriding and nitrocarburizing met for its 59th meeting on May 4th 2017 in Hanau at Rohde GmbH in their new factory which offers enough space to welcome all participants 45 participants from Germany and Austria attended the meeting. Originally the meeting has always taken place in Hanau at Degussa. Hanau is centrally located and can be easily reached from every part of Germany. The next expert meeting in December will also take place in Hanau at Rohde GmbH."* May 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 website@themonty.com or 905-271-0033. May 29, 2017

Item # C327 AGF Rotary Retort Line Model 280
Item # M405 Used Transformers For Sale
Item # B431 Air Atmosphere Box Furnace 2000F
Item # B430 Ipsen Box Furnace 38" high x 43" wide x 48"
Item # B429 Lindberg Batch IQ Installation

Aerocraft Heat Treating, Paramount, CA

One of the largest commercial heat treaters on the west coast of the US is Aerocraft Heat Treating Company located in Paramount, CA http://www.aerocraft-ht.com/ Their name has been in the news quite often recently as the city of Paramount has found elevated levels of hexavalent chromium which they blame of several local companies including Aerocraft. Aerocraft disputes this and is suggesting that different testing methods be used. The information below comes from the city of Paramount. May 26, 2017

"Following the South Coast Air Quality Management District's (SCAQMD) March 16 hearing to consider potential modifications to Aerocraft Heat Treating Company's stipulated order for abatement, Aerocraft approached the City regarding the construction of new scaffolding in order to install its own air quality monitor above the height of a newly constructed wall. During the hearing, the company had argued that the monitors owned and operated by SCAQMD could not reliably collect readings of hexavalent chromium due to the way that they are manufactured. The company has been placed in curtailment four times to date; the curtailments stem from SCAQMD monitors showing a three-day average that exceeds the agreed-upon 1 nanogram per cubic meter (ng/m3) threshold. In order to prevent future curtailments and ensure that its emissions are correctly registered, Aerocraft has requested permission to build a temporary scaffold structure in the public right-of -way on the outside of its facility. This scaffolding will provide a space for both Aerocraft's own air quality monitor as well as a monitor from SCAQMD, allowing the results for the two samplers to be better compared with each other. The City of Paramount has followed this issue closely and is working with the facility in the implementation of its new project. Currently, all metal-related businesses are under the effect of a moratorium that prevents any new businesses from applying for City licenses and permits. Additionally, under the moratorium, existing businesses are prohibited from any expansion. However, due to Aerocraft's scaf-¯folding being built for the end-purpose of mitigating emissions, the City plans to expedite the permitting process. City staff are currently reviewing the company's submitted application for an encroachment permit; Aerocraft has requested permission to construct scaffolding at a greater height than what it had originally submitted. Though the company has cooperated fully with the City, the City's review of the application may take another one to two weeks. This will help to ensure that the safety of the public nearby is maintained while the temporary scaffolding is erected."

Death of the “Super 30” Batch IQ Furnace?

“Super 30” is actually a trade name for a batch IQ furnace made by Surface Combustion of Maumee, Ohio, USA. Surface Combustion was founded in 1915 and the Super 30 batch IQ furnace with working dimensions of 30” wide X 48” deep and varying heights was introduced in the 1940’s or 50’s. Over the years it has become the most common furnace in North America with literally thousands being built but the world keeps changing and in recent years the “Super 30” size furnace has been replaced by the 36” X 48” sized furnace as the most common new size of furnace. It is a testament to the number of units built that the name has become a generic one-in many cases any make of furnace with these working dimensions is referred to as a “Super 30”. The furnace is of course not going anywhere and many will remain in service for years to come but the demand for new ones has certainly declined and in the future they will be relegated to areas with smaller volumes or captive heat treaters with relatively small runs. May 25, 2017

Hauck Cheltenham Adds Vacuum Furnace

Hauck Heat Treatment in Cheltenham, UK has just added a brand new Ipsen vacuum furnace. Hauck is part of the Aalberts Group of the Netherlands and is one of the largest commercial heat treaters in the world with plants throughout Europe and the US. It was formerly known at TTI until the Hauck name was adapted over a year ago. May 25, 2017

“Cheltenham is pleased to announce that May saw the arrival of our new Ipsen Turbo2 Treater “M” size Vacuum Furnace. Thanks to the commitment and support of our skilled workforce and engineering team, with support from our nominated contractors, VAS, Fabwell & Hicksons, the installation and commissioning is expected to be very fast and we should be processing our first loads in a little over one week. The new furnace is a replacement, but this furnace will be compliant for Aerospace heat treatment so further expands our capable capacity within that key market sector. The furnace is also installed with “PD Metrics”, a system that intelligently monitors aspects of the furnace, reports back and anticipates problems before they occur, making it our most advanced and up-to-date piece of Vacuum technology within our UK group.”

Briggs & Stratton Fire

Captive heat treater **Briggs & Stratton** had a small fire in the heat treating department at their plant in Wauwatosa, MN, USA. The fire started in a duct above a furnace which we are speculating was probably coated with quench oil which leads us to ask does anybody clean ducts of oil buildup? We are not being facetious with our question it is just that this is such a common occurrence that it makes us wonder if any companies clean ducts as part of regular maintenance or if a fire in a duct is a sign that they need to be cleaned. May 24, 2017

"A fire that broke out Monday morning, May 22 in a ceiling at Briggs and Stratton was quickly extinguished by firefighters. The Wauwatosa Fire Department responded to a 10:21 a.m. call and crews were dispatched to the building at 3300 N. 124th St. Arriving crews located the fire in an overhead duct that was perched above some heat-treating equipment, according to a news release from the Tosa Fire Department. Tosa firefighters were able to put out the blaze in about 40 minutes with help from the Milwaukee and West Allis fire departments. The release said Tosa firefighters were in the area training and noticed a large amount of thick, black smoke in the air. "Our crews began to respond just as our dispatch center received the 911 call from Briggs and Stratton," the release said. The building was evacuated while fire crews did their work. Control of the building was turned back to Briggs and Stratton at approximately 11:45 a.m. The release said the exact cause of the fire is undetermined but appears to have started in or near the exhaust ducts located above the heat-treating equipment. The fire does not appear to be suspicious and the investigation has been closed by the Fire Prevention Bureau, the release said. No injuries occurred as a result of the fire and initial damage estimates are pending."

Forge USA Auction/Houston, Texas

If you were planning on attending the Forge USA auction in Houston, Texas Wednesday, May 24th you can now cancel your plans. This forging facility has a large heat treating department which consists of a whole "whack" of furnaces including melting furnaces, large box ovens and re-heating furnaces all ranging from good condition to pretty basic. As it turns out the auction has been cancelled as the whole plant has been taken over by a company by the name of Forged Components Inc. which will keep the plant in operation. A very good ending in our opinion. May 24, 2017

SSI Seminar, Mississauga, Canada

We have a correction to make about an upcoming **SSI Heat Treating Seminar** taking place in Mississauga, Ontario which we mentioned just yesterday. The correct date for this is June 22 2017 and we apologize for any confusion. The seminar will feature topics such as these and registration can be done at http://www.supersystems.com/heat-treat-seminar/ May 24, 2017

CQI-9, Automotive Heat Treating Requirements.
Furnace and endothermic generator troubleshooting.
Carbon Probe Troubleshooting.
Industry specification for gas flow control.
How to produce a quality gas composition in an atmosphere furnace.
Managing electronic data and what it means to go paperless.
Using infrared technology to measure gas composition.
PID control and PID parameters.

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[1] While supplies last.
[2] Applies to standard design trays only. Some restrictions apply.

Tuesday Morning Briefing

Due to the Canadian Victoria Day holiday our Monday Morning Briefing has become our Tuesday Morning Briefing. We start off with a new name to the industry **Heat Treat Central (HTC)** whose banner ad can be found on this page. Heat Treat Central is a relatively new company based in Michigan who in the years ahead will be rolling out a number of very cost effective products starting with base trays for batch and continuous furnaces. The base trays are investment cast in HU material and have been running very successfully at several locations in the US for quite some time now. With a price at least 10% under other suppliers we have no doubt but that you will be hearing a lot more about HTC in the future. Remember we told you fairly recently that we ran across a murder mystery set in the heat treating industry? The book written by long time heat treater **Clayton Pinkos** who currently runs the heat treat department at **Baldor Electric** in Tennessee has to be a first-a murder mystery with a heat treating theme? Anyway if you want to see a short "trailer" about the book we have this link for you https://www.youtube.com/watch?v=LC0RoKxMkkM

Braddock Metallurgical which has seven locations in the US Southeast (and one in Puerto Rico which always fascinates us) recently made a large investment in gas nitriding equipment. We understand that their location in Atlanta, Georgia has added 2 **Nitrex** gas nitriding systems. We will not ever say that nitriding is the fastest growing heat treating technology around these days.

Furnace company **CIEFFE**, the largest furnace builder in Italy has had their ups and downs over the past couple of years but it would appear that this is all behind them with a new owner and ambitious plans for the future. The photo below the press release shows an IQ furnace the company recently shipped. Press release Cieffe Group; *"In September 2016 Cieffe International AG fully acquired Cieffe group out of the troubled AccuHolding AG. The new owner started to introduce an extensive restructuring and reorganization measure by December 2016 consequently. Regardless of some time delays due to challenging local circumstances in Italy a landmark decision with the competent court of Treviso could be signed. According to this agreement Cieffe Thermal Systems S.R.L. (CTS) has taken over full operational control by April 1 2017 from Cieffe Forni and Cieffe Engineering. Since this date CTS can project, consult, sign and process client orders and request unrestrictedly. With the support of some strategic clients the new company in enjoying strong demand already in its early launch period. Cieffe Service which was never part of the financial restructuring due to its strong balance sheet will be more integrated into the new Cieffe groups to address clients needs in its entirety under one united roof. Sincerely Peter Schweighofer*

Are things improving in the heat treat industry? Our answer is an unqualified, definite YES. You ask how we can be so sure? In the past month we have added several new "help wanted" listings with more to come, used equipment inquiries are up substantially for all of the used equipment dealers and new furnace builders are reporting new orders as up substantially. Combine all these and we have no hesitation saying things are looking up in the industry. Controls company **SSI** of Cincinnati, Ohio is hosting another of their very successful 1 day heat treating seminars, this one June 22 in Mississauga, Ontario, Canada. SSI has been doing this for years and they have been successful because they concentrate on heat treating specifications and troubleshooting which staying away from shameless self promotion. Speaking of new orders **Nutec Bickley** in Mexico tells us about this one which is in addition to a recent substantial order for drop bottom ovens the company recently received from **Frisa** in Monterrey, Mexico; *"NUTEC BICKLEY delivered a Heat-Treating Car Bottom Furnace to a global forging company for*

one of their North American facility. The furnace inside dimensions are 30ft L x 11ftW x 10ftH with a capacity of 110 Tons. The temperature operating range is 950˚F to 1850˚F with a temperature uniformity requirement of ±15˚F≤1250˚F and ±25˚F>1250˚F. The Furnace is equipped with our sophisticated multi-mode Pulse Firing combustion system. The project was delivered in time. The customer was impressed with the ceramic fiber insulation lining quality and the performance of the equipment. It is probably the most efficient heat treating furnace in their facility."

And to round things out we have another new furnace announcement this one from **Lindberg/MPH**. *"Lindberg/MPH announced the shipment of an electrically heated hand-tilting aluminum melting furnace to the sand casting industry. The furnace will be used as a central breakdown for transfer via bull ladle. The resistance melting furnace has a melt rate of 50 lbs. per hour and can accommodate a crucible with a holding capacity of approximately 150 lbs. of molten aluminum. The furnace utilizes low voltage heating elements which provide a long service life."* May 23, 2017

Victoria Day Holiday

Due to the Canadian Victoria Day Holiday, a national holiday celebrating Queen Victoria's birthday there will be no news updates for Monday May 22. Regular news items will resume Tuesday May 23 with updates about a major change at a European furnace builder, a story about "Heat Treat Central" (HTC) which will attract a great deal of attention in the North American heat treating market and several other very interesting news items about the worldwide heat treating industry. May 22, 2017

Salt Quenching Safety

The main story of the week in the worldwide heat treating industry has been the explosion in a salt quenching furnace which resulted in 23 injuries. The details as we know them can be found on this page. If there is a lesson to be learned here it is that precautions need to be taken in salt applications as David Pye points out here. May 19, 2017

"Hello Gord, That truly was a very tragic accident that the company has experienced. I am sure that the root cause will come down to a nitrate salt mixture/contamination . Not too many people realize that the nitrate quenching salts are mad (depending on the required melting temperature) that Potassium Nitrate and Sodium Nitrate are highly combustible salts. (One of these salts is a component of Gunpowder!!) Highly combustible and if mixed with a cyanide based salt, extremely explosive. I am sure that the root cause of the terrible accident will come down to an accidental salt mixing. I believe that the whole of the International Heat Treatment Industry needs to conduct regular training session when using heat treatment salts. Heat Treatment salts are an excellent manner in which to treat steel or aluminum from a temperature uniformity perspective. You cannot wish for better temperature uniformity. Heat treating with molten salts is an excellent method of heat treating, however safety training MUST be MANDATORY . T Just as an add on to that, so it MUST be the same for atmosphere heat treatment, especially when using endothermic atmospheres and hydrocarbon enrichment gases. Once an Integral quench furnace is gassed up, it is a 'live bomb and it is ticking'. A very good friend once said to me, that an Integral Quench furnace is like a 'fire breathing dragon' when the furnace door is opened. Gas admission temperatures are most important to safety!! The heat treatment shop is where metal get hot. Heat can burn or create conditions for explosion. I use a simple illustration to show fire or explosion risk and it is attached. Make use of the illustration and use its message. (Acknowledgements Fire Inspection and Prevention Initiative) Sincerely, David."

FAG Shaeffler Explosion Germany

The recent explosion in the heat treating area of FAG Schaeffler in Eltmann, Germany has left 23 people injured, with 7 requiring treatment in specialized hospitals and two remaining in very serious condition. This has to rank as the worst heat treat accident in recent history. News reports now say the cause of the explosion was an experiment in a salt filtration device which went wrong leading to a chemical reaction which caused the explosion. However why the reaction occurred in the first place is still not known. We will keep you updated. May 18, 2017

Bodycote Trading Update

Commercial heat treating giant Bodycote posted their trading update for the first 4 months of 2017 and reports total revenue was up 18% year-on-year. Granted a lot of this had to do with currency exchange rates but even at constant currency rates it is still very respectable growth. May 18, 2017

"LONDON (Alliance News) – Thermal processing services provider Bodycote PLC on Wednesday said that its performance for the first four months of 2017 was in line with the company's expectations, leaving its outlook for the financial year unchanged. Total revenue for the four months ended April 30 came to GBP227.0 million, up by 18.0% year-on-year, or 7.1% at constant currencies. The Aerospace, Defense & Energy division's revenue was up by 10.8% ,and Automotive & General Industrial's revenue saw an even bigger increase in revenue, up by 23.2%. Civil Aviation saw revenue increase by 3.8%, with good growth in Western Europe offset by weaker revenue from the defense and oil and gas sectors. The General Industrial division saw an increase in revenue for the first time in three years, Bodycote said, increasing by 7.9% due to recovery in Europe and limited US growth. Car and light truck revenue increased by 7.9% thanks to growth in Europe and the company's emerging markets, while Heavy Truck and Bus revenue showed a small decrease. Shares in Bodycote were down by 0.3% at 805.50 pence on Wednesday morning."

FAG Schaeffler Salt Explosion, Germany

While it is too soon to point to a definite cause of the salt explosion at captive heat treater FAG Schaeffler which injured 13, heat treat expert Mr. David Pye does offer some possible causes; May 17, 2017

"I know that this is pure speculation, However, I think that it could come down to possibly an accidental salt mix occurrence(Cyanide based Salts with Nitrate base quenching salts) Or more probable it could be that a nitrate bath has been locally heated and has exceeded its upper working limits. Nitrate sales are notoriously unstable

when operating temperatures exceed say 500Centigrade (depending on the ratio of Potassium Nitrate to Sodium Nitrate). Or it could be that the de-sludging tooling was contaminated with other salts. Safety clothing Protection MUST be MANDATORY when operating and working with molten salts, When molten salts hit your skin, it keeps on burning until it cools down and leave you with a very serious burn to say nothing of flesh contamination from the molten salt. Safety with heat treatment salts should be a routine training, and observation. Safety clothing and handling the salts (molten or in the solid form) and House Keeping. I have been expert witness on too many salt bath accidents as well as having used and sold heat treatment salts and run training programs. It hoped that no one was seriously injured. Accidents like this can occur so easily, simply by accident. Sincerely David Pye"

PhoenixTM Supplies 'Hot Box' TUS Survey System to Pasello Heat Treatment.

"PhoenixTM have recently supplied a 'Hot Box' survey system to Pasello Trattamenti Termici S.R.L., a leading Italian provider of heat treatment services. The system will be used to carry out temperature uniformity surveys (TUS) in a wide range of furnaces including low pressure carburizing, gas carburizing, gas nitriding, etc. ensuring compliance to ISO/TS 16949 & CQI-9 specifications.

The PhoenixTM system included a twenty channel type N data logger protected by a customized high temperature thermal barrier with a quench deflector shield for use in high pressure gas quenches. The data logger was equipped with two way RF telemetry for monitoring the survey externally to the furnace, and 'on board' calibration correction data and calibration certificate which can be printed if required. For more information contact: www. phoenixtm sales@phoenixtm.com"

PhoenixTM system in TUS measurement jig. Inset shows data logger being placed into thermal barrier.

To go with this news item we will add this photo and description of **Pasello Heat Treatment; Pasello Trattamenti Termici.** For those of us who do not speak Italian, translated this means Pasello Heat Treatment a commercial heat treater with five plants and estimated sales of over 20 million euros for 2016. We have always had a soft spot for family owned commercial heat treaters and this is one being founded in 1998 by Mr. Giberto Pasello who now works alongside of his daughter Alessia and son Vittorio. The location we visited was the area where it all started in Bologna, Italy although this plant is not the original one. Most impressive is that out of the vacuum carburizing furnaces, vacuum nitriders and batch IQ's none are older than 9 years which is quite remarkable in the commercial heat treating industry. Also memorable is the fact that virtually every furnace is completely automated meaning that the furnaces run 24/7 but for a certain period of time including weekends there are no operators involved. I am sure that a number of factors make this a successful company however the number one reason was immediately apparent to us-the owner Gilberto is an individual with vast experience but even more importantly a vast enthusiasm for heat treating. Quite a remarkable if rather opinionated individual. The company's latest acquisition,

which just started production is shown below, a model HDN vacuum gas nitriding furnace supplied by CIEFFE. In front of it we see Francesco Pieropan, Sales Director, CIEFFE, Gord Montgomery, Gilberto Pasello, Alessia Pasello and Marco Boscolo, Area Manager, CIEFFE. May 17, 2017

FAG Schaeffler Salt Explosion Germany

We know nothing beyond this news report which would appear to be saying that an explosion happened in a salt quench tank in the heat treating department at FAG Schaeffler in Eltmann, Germany. Our experience with FAG Schaeffler tells us that the company is one of the most progressive in the world when it comes to heat treating, heat treating technology and safety which makes this a very unusual occurrence. May 16, 2017

"A large-scale deployment of fire brigade, police, rescue forces and technical aid organization (THW) had to be carried out on a large scale deployment at the FAG Schaeffler plant in Eltmann (district of Haßberge) on Monday. A total of 120 staff were on site. There had been an explosion in the Unterfrische factory. Several people were injured in some cases. Concerned citizens, members of the plant workers and, above all, media representatives stood in front of the works gates of FAG Schaeffler in Eltmann, on Monday morning, where a press conference had been announced by the police department under Unterfranken. "There was never a danger to the population at any time," said Björn Schmitt, press officer of the police department Unterfranken, from Würzburg. Schmitt confirmed that during the explosion 13 employees were injured – four of them so hard that they had to be flown by helicopters. Schmitt did not want to comment on whether the injuries are life-threatening. Under the hand, however, there was talk that one of the victims of the accident is struggling with life. According to the first findings, the explosion occurred in the area of hardening furnaces, according to the police officer. Employees had wanted to clean the salt bath in which the rolling elements (produced by FAG Schaeffler) were hardened after annealing in the oven."

Dr. Valentin Nemkov

"It is with great sadness that we wish to formally announce the passing of our long time friend and colleague, Dr. Valentin Nemkov.As many of you know, Dr. Nemkov had been battling cancer for some time. He peacefully passed on 4/24/17. We ask that you please join us in keeping his wife Nina, his brother Sergei, his sister Nina, his daughters Tatiana and Elena, his step-daughter Masha, and his grandchildren Nastya, Liza and Marie Claire in your thoughts and prayers.

As the grandson of the great Russian inventor Valentin Vologdin (who famously invented the Vologdin Coil, was granted 21 patents for induction heating, and was one of the pioneers of surface hardening technology), Dr. Nemkov was not too far behind when it comes to his impact on this industry. Dr. Nemkov himself was the author and co-author eight books, 18 patents, and more than 350 articles in scientific magazines. This includes his decades of research and development accomplishments in the study and optimization of induction systems, the theory of electromagnetic end effects, computer simulation and modeling, and, more recently, optimizing cold crucible melting furnaces, shielding of induction heating coils, heating of magnetic nanoparticles for medical applications, and development of new materials for magnetic flux control as well as high frequency tube welding.

While there will be much time to reflect on the numerous professional accomplishments that Valentin made to the induction industry, for now, we'd like to remember him as our friend, our mentor, and colleague for more than 30 years, and -most importantly- the dear husband of Nina, who is also a colleague of ours here at Fluxtrol. Not only was he a scholar with profound intellect, but also a gentleman in the truest sense of the word. He will be sorely missed. Bob and Riccardo Ruffini, Fluxtrol" May 15, 2017

Bill Huber, JTEKT North America

Bill would appear to be a very competent heat treat fellow having worked with companies such as Timken, Ruger Firearms, GKN Aerospace and now JTEKT Corp., always in a heat treating capacity. We mention him today because he very recently parted ways with GKN in SC and is now Principal Heat Treat Engineer with JTEKT North America Corporation in Greenville, SC. JTEKT Corporation was established in January 2006 through the merger of Koyo Seiko Co., Ltd., a world-class bearing manufacturer, and Toyoda Machine Works, Ltd., a machine tool manufacturer excelling in cutting edge machining technologies. May 15, 2017

BMI Sells 7 Vacuum Temper Furnaces

Now this is a very nice order especially when you combine it with 5 vacuum hardening furnaces manufactured by their sister company for the same customer. We will let BMI a vacuum furnace builder in France tell the story. May 15, 2017

"Last month, BMI was allocated with a new order from its Taiwanese customer WU JII INDUSTRY comprising seven vacuum furnaces. WU JII INDUSTRY, steel distributor and heat treater in Taiwan, is a long-standing customer of BMI. It was one of our first Taiwanese customer in 1988. The order includes seven tempering furnaces, type B54R. Useful dimensions are 600x900xH600 mm for a max load of 600 Kg per furnace. The seven furnaces will be dispatched into three different sites, in Taipei, Taichung and Tainan. As usual with Taiwan orders, the commissioning will be carried out by our local agent PAN FOLKS. With this last order, the WU JII company is now equipped with 14 units of BMI vacuum furnaces. This order was in fact part of a bigger investment project, including also five vacuum gas quenching furnaces, which will be supplied by our sister-company IVA-SCHMETZ from Germany. The total project for 12 vacuum furnaces reached 3M€. BMI is glad to be part of this important project and we hope to continue our collaboration with WU JII for many more years."

Callies Precision Engine Components Installs SSI Nitriding System

Callies Precision Engine Components of Fostoria, OH has installed an automated nitriding process control system from Super Systems Inc (SSi). Callies, a leading supplier to the high performance engine market for 28 years, is always looking at opportunities to invest in technologies that improve quality, reduce cost and collapse delivery time to the customer – and the SSI Nitriding system was a perfect fit. "Our goal has been to outfit all equipment with the latest technological controls to assure complete accountability with our in-house operations. This was the main reason we teamed up with Super Systems."

The engineered control system from SSi provides Callies with the ability to perform tight nitriding process control using an easy-to-use recipe system that maintains tight tolerances on temperature(s), gas flows and nitriding potential. The relatively shallow nitride case delivers a tremendous improvement to fatigue life of every Callies crankshaft. The extremely hard nitrided surface also gives the crankshaft excellent wear resistance. The SSi control system provides the latest in sensor and flow technology for measuring the nitrding atmosphere and an operator-friendly interface to provide complete traceability to the process and load data.

The SSi control panel was retrofitted on an existing a Lindberg pit furnace previously used for nitriding. Delivering proper surface and case properties requires in-situ control of the nitriding potential (Kn) and control of the ammonia, dissociated ammonia and nitrogen gases. The system delivered by SSi also included the control of the Dissociated Ammonia (DA) generator. The controls for the DA generator provided gas flow monitoring and temperature control to ensure the ammonia is fully cracked prior to being used as process gas in the furnace.Callies takes their heat treating seriously as illustrated by their investment in SSi which is just part of the million dollar plus investment in the department. Carefully controlled heat treating can be found throughout their manufacturing process which includes induction, neutral hardening, and carburizing. For more information on SSi's capabilities, visit SSi's website at http://www.supersystems.com. For more information on Callies Performance Products, visit http://www.callies.com May 12, 2017

Ipsen Adds September Class with Special Atmosphere Session to 2017 Ipsen U Lineup

Ipsen announced a new addition to their 2017 Ipsen U lineup with a September class that will take place September 19-21, 2017. As an added bonus, those that attend the September Ipsen U can extend their training at no extra cost with an additional day dedicated to atmosphere heat-treating systems. This atmosphere session will go from 1-5 p.m. on Thursday (September 21) and from 8:30 a.m. to noon on Friday (September 22). Ipsen U courses provide attendees with a broad overview of furnace equipment, processes and maintenance, as well as a hands-on approach to learning while receiving qualified tips directly from the experts. The new atmosphere session will also provide attendees with a specialized, in-depth look at their atmosphere equipment and processes. Throughout the course, attendees are able to:

- *Learn about an extensive range of topics – from an introduction to vacuum and atmosphere furnaces to heat treating, furnace controls, subsystems, maintenance and more*
- *View the different furnace components firsthand while learning how they affect other parts of the furnace and/or specific processes*
- *Take part in one-on-one discussions with Ipsen experts*
- *Participate in a leak detection demonstration*
- *Tour Ipsen's facility*

Whether you are new to the industry or need a refresher course, Ipsen U teaches best practices that help improve the performance and life span of your equipment – and has been providing training to the heat treatment industry for 30+ years. With a newly remodeled classroom, Ipsen U features comfortable seating for up to 36 attendees, as well as integrated technology with a large smartboard and two additional monitors for interactive presentations and demonstrations. Courses are also available June 6-8, August 1-3 and October 3-5. Learn more and register at www.IpsenUSA.com/IpsenU. May 12, 2017

MIHEU Orders SECO/WARWICK Nitriding System

"The VECTOR is a modular vacuum furnace equipped with high pressure gas quench (HPGQ). It has been used for over 20 years by professional heat treatment companies around the world, such as MIHEU, the Slovenian commercial heat treater, who uses the Vector system to increase production while ensuring high quality work with repeatable results. VECTOR was the first SECO/WARWICK solution purchased by MIHEU. Previously, the Slovenian company purchased a furnace equipped with SECO/WARWICK's signature technology, ZeroFlow, for nitrocarburizing and controlled gas nitriding. Satisfaction with the equipment efficiency, expertise and experience of SECO/WARWICK were the basis for MIHEU's continued cooperation and purchase of additional equipment. In the first quarter of this year, MIHEU purchased the VECTOR system, which will be delivered between 3rd and 4th quarter of 2017. "MIHEU's heat treatment center is a family business that started its operation from a small workshop. Currently MIHEU enjoys a strong international presence and the scope of its services is constantly expanding. However, achieving such results would not be possible without the cooperation with reliable partners offering the best, solid and innovative solutions. Such a company is SECO/WARWICK, " said Aleš Prikeržnik, Managing Director at MIHEU." May 11, 2017

Ion Or Gas Nitriding?

So what will it be? Gas or Ion? Ion or Gas? Edward Rolinski, of Advanced Heat Treat Corp., (Dr. Glow to you and I) gives us his thoughts and Edward is a very good man to listen to when it comes to nitriding. May 11, 2017

"When plasma nitriding was first introduced, it was treated as a solution for the problems related to the nitriding process. At that time, the gas nitriding process was difficult to control and often resulted in formation of an overly thick compound layer. These gas nitriding problems have been solved, and at the moment, the gas process is a parallel technology (Bell, 1973 and Tacikowski, 1976). On the other hand, plasma nitriding has some other unique features, offering, for certain applications, several advantages over the traditional gas or salt bath treatments. Initially, plasma nitriding was used only in its primary form: cold-wall technology. Cold-wall technology had problems maintaining a sufficiently uniform temperature across the load. It also had limitations with the heating rate. Said problems were solved through implementation of hot-wall technology. Early problems of plasma nitriding with control of the arc discharges have been solved with the introduction of pulse power generators, modernization of electronic controlling devices, and the availability of sufficiently fast computers. When cold wall technology is properly understood and managed, it is an extremely viable and efficient surface treatment.

Sputtering is a phenomenon that accompanies the interaction of the glow discharge with the cathode. The pressure of the gases in plasma nitriding ranges between 0.1-5.0 mbar. The sputtered atoms circulate above the cathode in a form of a dust (Merlino, 2004). Some of the atoms are re–deposited on the cathode while others are dispersed in the system, covering the port windows, ceramics of the insulators, and the porthole. Studies of sputtering with iron isotope 59Fe have demonstrated that there is a significant transfer and mixing of the sputtered metal atoms on the surface of the cathode under plasma nitriding conditions (Roliński, 1978). The important practical meaning of this phenomenon is that the excess of atoms returning to the surface might be detrimental to the nitriding process (Wells A. and Strydom I Le R, 1986 and 1988 and Roliński, 2005). On the other hand, sputtering is a very positive phenomenon and in the hot-wall technology is minimized. Sputtering allows fast, in situ, activation of the surfaces not only in stainless steels, but also in highly polished medium alloy tool steels. If treated with the gas nitriding process, these steels would require a special activation step.

The first benefit of plasma nitriding is the ability of the ionized gas to activate the most difficult to nitride BCC alloys, containing significant quantities of chromium and other elements and enabling chemisorption of the active nitrogen species on the surface (e.g. Lebrun, 1972 and Roliński, 1987). The method can be used also for nitriding FCC metals such as nickel (Roliński, 1980) and CPH titanium (Roliński, 1984 and 1988). During the plasma nitriding process, the energy of ions and neutrals bombarding the cathode-work piece is sufficient not only to remove the native oxides of chromium or other elements passivating the surface, but also to cause significant sputtering of the alloy. This fact, together with a low partial pressure of nitrogen in plasma, has a paramount importance in limiting the compound layer thickness, enabling us to call plasma nitriding a low-nitriding potential process (Roliński, 2005). With such a thin compound layer, the nitrided zone, i.e. diffusion zone and compound layer together, is under residual compressive stress. This is required for enhancing bending fatigue properties of many components. Plasma nitriding and nitrocarburizing are environmentally friendly processes since they use very little amounts of gases such as nitrogen and hydrogen. For example a plasma nitriding vessel with the working volume of 30 m3 requires no more than 0.5 m3/hr. Those processing gases, once deactivated and deionized, can go throughout the same sequence of ionization and activation multiple times. In the gas process, ammonia, once cracked is lost forever for the nitriding process. Therefore, a similar sized gas nitriding system may

require about 50 m3/hr. of un-dissociated ammonia in addition to similar quantities of nitrogen."

Bodycote Camas Achieves Top Aerospace Accreditation

To go with this press release from Bodycote we have a picture taken at the plant a number of years ago. The fellow on the left is Bob Grammer of Grammer Vacuum Technologies and on the right we believe it is Joe Dyer although we wouldn't swear to it. May 10, 2017

"MACCLESFIELD (U.K.) – Bodycote, the world's largest heat treating services provider, is pleased to announce that its Camas, Washington Hot Isostatic Pressing (HIP) location earned the highest level of Nadcap accreditation following the most recent Nadcap audit. As one of the original HIP facilities to achieve this standard, the site plans to maintain its extended Merit status. The emphasis and focus on quality build on a long history of supplying Hot Isostatic Pressing to the world's aerospace prime manufacturers and their first tier suppliers. Historically, the Camas site has played a strategic role in the aerospace supply chain and supporting new aerospace programs. In recent years, Bodycote has invested resources and capital to develop and expand operations to meet the demands required to support aerospace as well as energy and medical markets."

Metca Installs Furnaces at Location in France

"May 2017 – REMIX S.A. has completed commissioning of an electric chamber furnace processing line dedicated to heat treatment of die forgings. The installation was carried out for METCA, a French division of ForgeX Company. This well-known European forging producer has once again chosen Remix S.A. based on testing and design fit for purpose. This processing line guarantees the technological process on the highest level. The first project for ForgeX Group was delivered by REMIX in year 2014 and was commissioned in Rzeszów, Poland. This latest investment covers heat treatment line, type LT-520, consisting of two electric chamber furnaces that, along with auxiliary devices, make a complete, automated heat treatment set. The processing line type LT-520 is specially designed to carry out annealing processes on various die forgings. The ForgeX group is well known on the European market in the field of die forgings. The METCA division in France supplies parts for aircraft, automotive, agriculture and railway industries. http://remixsa.pl/eng" May 10, 2017 "MACCLESFIELD (U.K.) – Bodycote, the world's largest heat treating services provider, is pleased to announce that its Camas, Washington Hot Isostatic Pressing (HIP) location earned the highest level of Nadcap accreditation following the most recent Nadcap audit. As one of the original HIP facilities to achieve this standard, the site plans to maintain its extended Merit status. The emphasis and focus on quality build on a long history of supplying Hot Isostatic Pressing to

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Clif Coleman Interview, April 11, 2017

Today we have an interview with a fellow who brings a very interesting and relatively unique perspective to the heat treating industry, Clif Coleman, owner of Mid-South Metallurgical in Murfreesboro, TN. May 9, 2017

Clif I mentioned how you have a rather unique perspective on the heat treating industry and this is because you entered the industry much later than most of us seem to. Could you please tell us how you ended up as the owner of Mid-South?

I spent the first 25 years of my career in the corporate world in a variety of industries – moving from engineering/manufacturing to operations and general management. In 2006 I left a great corporate job with a multi-national company, moved from Texas back home to Middle Tennessee to buy a business and "strike out on my own" – so to speak. I looked at wide variety of businesses keeping three basic criteria in mind – the business had to have a

potential. I looked at businesses in every imaginable niche and industry. I "kicked the tires" on probably 40 or 50 businesses, took a "deep dive" look at probably ten, and did Letters of Intent and due diligence on 3 or 4. After all of that, which by the way was one of the most interesting experiences of my professional life, I found that Mid-South fit my criteria – although I had no experience or knowledge of the commercial heat treating industry.

What was your impression of the company the first time you walked into the plant?

The business was typical of many of the "small businesses" I had looked at in my quest to find the right one – a family owned "mom and pop" operation. Candidly, having never been in a commercial heat treating operation I didn't know much about what I was looking at. It was clear that the equipment was old and tired with a lot of opportunity to improve efficiency on the shop floor. The business was well known and respected in the local market and had grown by reputation and "word of mouth". But, there had never been any serious sales and marketing effort. Evaluating the financials, the business was sound, but stagnant. So it looked like an opportunity.

Please tell us what equipment Mid-South had when you entered the picture and what the company now has?

In 2007 Mid-South had three Ipsen T4 internal quench furnaces, two small vacuum furnaces, an ion nitride furnace, a salt bath line, a drop bottom furnace, , a couple of induction heat treating machines, a hodgepodge of small temper furnaces, and a "WWII vintage" furnace used for stress relieving. All of the equipment had very antiquated controls and a few pieces of equipment were not even functional.

Due to a number of factors (high operating costs, poor utilization, and low contribution to top line revenue), the salt bath line, the induction machines and the drop bottom furnace were removed. This cleared floor space to make way for larger and more efficient equipment. Of course all of this took place over a period of a few years. This process has been a bit like "flying the airplane and rebuilding it in the air". You have to keep running the business, serving your customers, paying the bills, plus reorganize and build the company at the same time. The logistics and planning of these steps is always challenging – somewhat like working a puzzle. And I made mistakes along the way. In fact some of my team jokes that we should "install all equipment on casters" so we can easily move it when "Clif has his next brainstorm".

Today we have three vacuum furnaces and the "original" ion nitride furnace. We have four batch IQ's with companion tempers, washers, and charge cars, and an assortment of temper furnaces and shot blasting/cleaning equipment. And a couple of years ago we installed a black oxide coating line. Only three pieces of the "original equipment" survived the transformation process. Today Mid-South bears little resemblance to the Mid-South of 2007. Continue Reading

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IOS – Industrie Ofen Service GmbH, Arnsberg, Germany

Yesterday we mentioned that we had heard of a new company in Germany dedicated to the vacuum furnace industry. Our story was largely but not completely correct. IOS www.ios-gmbh.online does not manufacturer furnaces rather they are producing and selling parts for industrial furnaces and this includes repairs and assembly. The CEO is a fellow by the name of Luigi, Dallo who in a past life worked for furnace builder Schmetz. And yes it is a new company founded February 28th 2017 May 9, 2017

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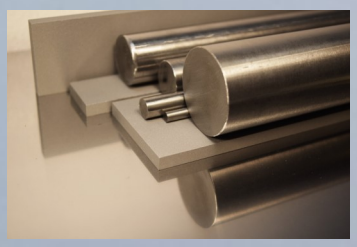
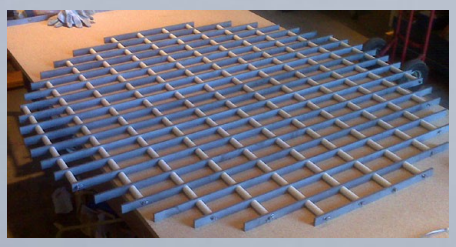


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Home Page Pictures

On a regular basis we update the photos on our home page https://www.themonty.com/ These photos show captive and commercial heat treat operations around the world and include both equipment and individuals. Today we offer a new batch of pictures-have a look as you or your company might be included. May 9, 2017

Monday Morning Briefing.

McLaughlin Services is growing again. McLaughlin Services located in Avilla, Indiana is a furnace rebuilder, new furnace builder and service company. Not that long ago the company added a location on the US west coast, California to be exact to service captive and commercial heat treaters in the area. Now we have word that the company will be adding a location on the US east coast and in addition will now be in a position to service the vacuum furnace industry, something the company has never offered before. We're guessing within the week we will be able to offer more details and a few pictures of the newest location. From **Conrad Kacsik Instrument Systems, Inc.** in Ohio we have this press release about a project they recently completed at **Nelson Fastening Systems** in Cleveland, Ohio. *"Conrad Kacsik's Engineering Division recently completed a full system upgrade of an automated hardening & tempering line for Nelson Fastening Systems. The project consisted of removing the existing control system, VFD drives, limits, and control wiring and installing a new control system. The new system is comprised of a Honeywell HC900 with a 15" operator interface terminal that is integrated with a computer running Specview HMI software. The system controls a 2 zone hardening furnace, generator, quench tank, water cooling tank, washer, 2 zone tempering furnace, and a blackening unit – all of which were integrated with 6 conveyors. The equipment was wired into 4 control panels which were completed by Conrad Kacsik's Engineering Team. The old conveyor system had VFD's that did not communicate with a PLC. The new system was programmed with safety features, so that in the event of a chain break or a conveyor jam the system alarms and automatically shuts the other conveyors off."*

So who is **Industrial Furnace Service** *(IOS) WWW.ios-gmbh.online in Arnsberg, Germany? A reader in Germany is leading us to believe that it is a brand new vacuum furnace company. We are not familiar with the company, know nothing about them and with our lack of German are helpless to provide more details at least for today. We have no doubt but that we will be able to tell you more in the very near future. Correction time. Not that long ago we had a news item with moderate interest to the industry namely the merger of* **Metaldyne Precision** *and* **TorqTek** *(Charleston, SC) both captive heat treaters. In the original story we suggested TorqTek operated mainly rotary hearth furnaces, well we stand corrected a reader tells us that while at one time they did have rotary hearth furnaces now the heat treat department consists of 3 or 4 Surface Super 30 batch IQ furnaces.*

In people news we have these tidbits. **Tony Valeriote***, the President of* **H & S Heat Treating** *in Ontario, Canada has announced that he will be retiring in the near future. Tony is a super nice guy who has been with H & S for as long as we can remember. H & S is a good sized operation offering batch IQ, continuous and Induction heat treating.* **Phillip Lee** *retired at the end of April from* **Bodycote UK Operations** *after 41 years with the company although he will continue on as a project manager for a few months helping with an aluminum project Bodycote is working on in California. We ran across Phillip many years ago at a Bodycote location in the UK dedicated to Rolls Royce work but darned if we can find the picture.* **Marcia Slifka** *has joined* **Paulo** *(commercial heat treating) as Corporate Director of Quality reporting to Ben Crawford, Vice President of Operations. Marcia will be responsible for complete oversight of Paulo's quality management systems to maintain consistency and standardization across the company. This includes maintaining of Paulo's quality systems of ISO 9001, ISO 14001, AS 9100, NADCAP, and TS (IATF) 16949 certifications. She will lead Paulo's internal audit team as they work with each plant to continuously improve the customer experience. Also at Paulo we have this item.* **Tee Rassieur** *has been appointed as Director of Strategic Programs by Paulo's executive management team. The newly created position will report to Vice President of Operations, Ben Crawford. Ben Crawford states "Tee will be responsible for advancing strategic initiatives of Paulo that will coordinate between the plants and our customer needs. Tee's proven leadership and direction throughout the organization will drive the necessary programs that solidify Paulo's commitment to our employees and customers."*

And to round things out **Inductotherm Group India***, held an official dedication ceremony and Grand Opening of their new Manufacturing Plant in Ahmedabad, India last month. The campus, with an architecturally magnificent 100,000 square meter building that contains a 54,000 square meter manufacturing area, will provide ample space to fully support all of India's customers. Below you can see a photo of the new location. May 8, 2017*

CE European Heat Treatment Forum & Expo

We at **"The Monty"** *attended this conference in 2015 and were impressed. We understand that attendance was again good with roughly 120 people.*

"The 4th CE European Heat Treatment Forum & Expo www.heat-treatment-forum.pl took place on April 26-27, 2017 in Wroclaw, Poland. Beginning with the first conference in 2014, this annual Forum has become the most important international heat treat event in Poland and the Central Eastern European region. For all foreign participants, this conference offered a gateway into a region where several western furnace makers and component suppliers are currently selling their products. Organized by the Global Heat Treatment Network, this independent conference has been frequented by many local heat treaters looking for alternatives, new trends and technologies, and new business relationships. During the evening gala, Greg Matula, Head of Furnace Design Engineering at H.C. Starck, was honored for his achievements in the international heat treatment industry with the title "Member of the Heat Treatment Forum Hall of Excellence". Preciously the award was presented to Michel Korwin (Nitrex), Janusz Kowalewski (Ipsen International) and Hans Veltrop (HVC) at previous year conferences. The 2018 conference will be preceded by two practical sessions on pyrometry and material testing (April 24-26, 2018). At a separate European

Mid South Metallurgical Invests in AFC-Holcroft Equipment

To the press release below we will add that the man himself, Mr. Clif Coleman can be seen in the photo below with Jordan Montgomery on the left. We can also say that we will shortly be offering an interview with Clif.

"MID-SOUTH METALLURGICAL INVESTS IN AFC-HOLCROFT EQUIPMENT TO EXPAND EXISTING PRODUCTION CAPABILITY (April, 2017) Commercial heat treater Mid-South Metallurgical located in Murfreesboro, Tennessee, USA has purchased new AFC-Holcroft furnace equipment to increase their production capability. This expansion will significantly increase Mid-South's production capacity for Carburizing, Carbonitriding, Neutral Hardening, Normalizing, Annealing, and Stress Relieving of metal components. The new furnace equipment, consisting of a UBQ (Universal Batch Quench) integral quench furnace, two UBT (Universal Batch Temper) furnaces and an EZT Generator, was integrated into the customer's existing batch furnace line, and has been installed and commissioned at the customer's plant located just south of Nashville, Tennessee. Said Clif Coleman, President of Mid-South Metallurgical, "I have dealt with many capital equipment companies in various industries throughout my career. AFC-Holcroft's performance was by far the most meticulous and professional of any." Coleman added, "AFC-Holcroft worked diligently and tenaciously to ensure that our expectations were met and exceeded." Ron Graham, Sales Engineer at AFC-Holcroft stated, "We were pleased to be a part of the expansion of heat treating capacity of Mid-South. They are a growing commercial heat treater and we are proud that we could be their partner for this project." For more information, contact media@afc-holcroft.com" May 5, 2017

Paulo, Nashville Division Adds Integral Quench Furnaces

Paulo Nashville has installed two AFC-Holcroft integral quench furnaces, bringing the total to 8 with complimentary equipment such as washing, tempering and rust preventative. The furnaces were built with Paulo's proprietary integrated control systems ensuring repeatable, error-proofed processing. They can process loads up to 36"x48"x36" and 4,000 pounds. The furnaces are currently having uniformity tests completed and system accuracy checks and will be completed in the coming weeks. The furnace line was extended to accommodate the new equipment which includes the addition of four tempering furnaces, pass thru washer and additional material handling and load building stations. The additional capacity allows Paulo to better serve customers in the Southeast. The furnaces have capabilities to provide through hardening, case hardening, and ferritic nitrocarburizing processes. The installation is a milestone in the multi-year expansion of Nashville. The expansion plan included the relocation the vacuum heat treatment department, expansion of the lab and testing area, a new shipping and receiving area that allows for improved staging processing of parts. Paulo is committed to investing in our facilities and remains committed to serving our customers and the market needs. May 4, 2017

Selma Precision/Sona Precision Forge, Selma, NC

Now this plant certainly makes the news on a regular basis-here is a brief summary. Several years ago there was a fire in the heat treating department which burned half the plant to the ground. Sona (the name at the time), rebuilt the plant and heat treating department at a cost of millions which included new furnaces and control systems. They again made the news last year when the company abruptly closed which prompted a number of people to investigate buying the fairly new heat treating equipment. Nothing happened until earlier this year when right out of the blue a new owner surfaced who announced that they were getting into the commercial heat treating business. Now we have this latest news which leads us to believe that the idea of commercial heat treating is being discarded and the plant will go back to being an auto parts supplier and captive heat treat.

"Less than a year after Selma's Sona Precision Forge plant closed, new blood will restart the assembly line. Selma Precision Technologies, the local name and first American plant for Indian manufacturer the Warm Group, plans to reopen the plant by June with 38 workers and eventually return the site to its former glory. Vinay Upadhyay, director of business strategies and growth for Selma Precision Technlogies, said the Warm Group was initially interested in buying bankrupt Sona's equipment at auction and shipping it back to India. Instead, it bought the property. The company paid $700,000 for two parcels late last year, and Upadhyay said in all the company has spent $6.5 million on the land and buildings and getting the plant back in shape. He said the company will spend another $3 to $4 million over the next two years. "We had been planning to set up another plant in India, but we had also been in the region and considered setting up a footprint in North America," Upadhyay said. "We met with the trustee (of the Sona land) planning to probably look at the equipment and ship it back to India. The trustee told us as a foreign company we may have a hard time (winning at auction), but said it's a good deal, a good bargain and asked why don't you think of reviving the plant. We thought it might be a good opportunity and a win-win for our company." Upadhyay said Selma Precision will manufacture the delicate iron parts in car transmissions, gear boxes and differentials. It will also handle some defense contracts. The auto-parts work is similar to what Sona did in Selma, and Upadhyay said the work will tie into Warm's manufacturing in India, with some parts made on both sides of the earth to end up in the same machines." May 4, 2017

Natural Gas Spiking

Within the past month we had a story about a death in the industry due to a furnace explosion. We still do not know what caused the accident but as you would expect there was a great deal of speculation and this included something known as *"gas spiking"*. Heat treat consultant David Pye (amongst others) had comments about this and here is another in depth explanation. What we find particularly interesting in these comments is the effect that "spiking" has on controlling a furnace atmosphere.

"While I am no longer involved directly in the thermal processing industry (after almost

40 years), I still get your newsletter and follow many subjects with interest. One of those was the latest article on natural gas "spiking". David Pye is absolutely correct. I recall fighting this issue as far back as the energy crises of the late 70's and early 80's, especially in the Northeast US. "Spiking" (or as the utility companies like to refer to it – "blending") created problems not only with endo- and exo- generators, but noticeably affected things like furnace heat-up and recovery times, burner sooting, etc.

Samples of natural gas we pulled at the time found the methane had been cut with propane, butane, heptane, hexane, synthetic natural gas – basically anything that would burn. Sometimes the "blending" was significant enough to cause the automatic dewpoint controls of the era to go haywire. Remember at that time, we were still using 3-gas analyzers and other crude devices (at least by today's standards) to try and control carbon potential. Even Alnor dewpointer readings were suspect, because those relationships of dewpoint to carbon potential are based on atmospheres generated from methane. The longer-chain hydrocarbons have a noticeable affect on those relationships.

One way I used to educate my customers about this was by telling them to watch the burner on their home gas stove, from day to day or even hour to hour, especially on a cold winter morning. The nice blue flame of perfect combustion will turn dramatically yellow at times, indicating lots more carbon in the gas – that's when they were blending. The populace was waking up, houses were heating, showers being taken, breakfast being cooked. Demand would jump, and the utility would respond with more crap in the pipe. Even at the time, we could NOT get the utilities to supply any data as to composition of what they were supplying. Their only legal obligation was (and is) to compute the average caloric value for the month, relate it to methane, and charge the customer by the Therm. They would either (a) deny they were "blending", or (b) claim any presence of other gasses were temporary and did not present a hazard. Fast forward to today, and it appears they are no more cooperative now than 35 years ago, and probably won't be until forced to do so by the regulatory agencies." May 3, 2017

Premier Furnace Specialists/BeaverMatic Supplies Mesh Belt Brazing Furnace to Tool Supplier

"Premier Furnace Specialists/BeaverMatic recently supplied and installed a complete 20-inch mesh belt brazing furnace system to a major tooling supplier in the Midwest. Along with the brazing furnace, a 6000 CFH exothermic gas generator, 6000 CFH gas dryer, a water recirculation system, Marley evaporative cooler/tower, and turnkey installation/startup was included. The furnace is capable of brazing, annealing, and operational temperatures up to 2050°F." May 3, 2017

Hestia Heat Treat, Racine, Wisconsin

If you are scratching your head asking who the heck Hestia Heat Treat is you are certainly not alone as we had not heard the name until yesterday. Hestia Heat Treat is the new name of Racine Heat Treat in Racine, Wisconsin, USA. Racine HT has been around for many years with at least two owners in the past few years, however very recently it was bought by a fellow by the name of Darius Szczekocki who brings to the company a new name and a wealth of experience. Darius has spent a number of years in the industry with companies such as Bodycote and most recently as General Manager at Bluewater Thermal another commercial heat treater. Hestia Heat Treat has a number of Ipsen batch IQ furnaces and vacuum units. We wish him the best of luck. May 2, 2017

And the Oscar goes to …

"At the end of February, timed to coincide with the Hollywood film industry OSCAR awards, the Austrian Foreign Trade Promotion office in Los Angeles holds their own Economic OSCAR award ceremony. This year they awarded AICHELIN Holding their "USA-Biz" award in the category of Investment in recognition of their 2016 acquisition of AFC-Holcroft – making Aichelin the largest provider of atmosphere furnaces worldwide. It is a big honor for Aichelin to be included among this group of top-performing Austrian companies. Dr. Peter Schobesberger, President of the AICHELIN Group, recently visited AFC-Holcroft's offices in Wixom, Michigan to collect their award statue in order to bring it home to Austria." http://www.aichelin.com/en/news/2017/And_the_Oscar_goes.php May 2, 2017

Peter Schobesberger (President AICHELIN Group). Right – Bill Disler (President & CEO, AFC-Holcroft)

Calvert Street Capital Partners Announces Initial Thermal Processing Acquisition

May 1, 2017 – Calvert Street Capital Partners ("Calvert Street") is pleased to announce an agreement to acquire Diamond Heat Treat ("Diamond") based in Rockford, Illinois. Diamond represents the initial investment in our strategy to build a leading thermal processing company focused on value-added services. Central to this strategy is identifying and bringing together leading businesses that share a focus on world-class safety, quality, service, and advanced technology.

Mike Sobieski, CEO of the thermal processing strategy, commented: "Diamond represents our initial investment and we are delighted to partner with the Diamond team. The company, founded in 1996, has a long and well-deserved reputation for quality and service. We want to thank Bill Akre, Dan Neiber and Bill Denning and acknowledge their accomplishments. They have built an excellent company, and their priority has been to continue the success of the business and provide opportunities for their people. We are honored to continue – and hopefully build upon – their legacy."

John Hubbard, Chairman, remarked, "I am excited that Diamond is our first step in building a best-in-class company that offers a range of advanced technologies. I believe that there is a tremendous opportunity to offer specialized services to address the evolving technological challenges in the marketplace. We look forward to announcing future acquisitions."
As announced previously, Calvert Street has partnered with leading executives to build a meaningful thermal processing business. The team, which includes Don Longenette and Lewis Lance in addition to Mike Sobieski and John Hubbard, consists of highly experienced individuals who have spent their careers in thermal processing. This team has complementary skill sets and will be responsible for the day-to-day activities of the thermal processing platform.

Calvert Street is a Baltimore, Maryland-based private equity firm focused on investing in industrial service businesses in the lower middle-market. Since its inception in 1995, Calvert Street has focused on partnering with skilled management teams of privately held businesses to drive profitable growth and organizational transformation. The thermal processing partnership builds upon Calvert Street's experience in other high-value add industrial sectors, including testing and inspection and precision machining. For more information, please go to www.cscp.com. May 1, 2017

Monday Morning Briefing

Wirco, Inc. (Avilla, Indiana/Champaign, Illinois) Purchases Hyper Alloys Inc. (Roseville, Michigan). *Industry leading alloy foundry and fabricator Wirco, Inc. is pleased to announce the purchase of Hyper Alloys Inc. (a Michigan based alloy fabricator with over four decades of experience producing high quality tooling and furnace parts for the heat treating and steel processing industries). "Hyper Alloys tube forming capabilities, and line of associated products, provides a perfect complement to Wirco's existing tube casting and assembly capabilities", said Chad Wright, President Wirco, Inc. "We will now have the ability to offer our customers a broad range of assembled and loose stainless steel tube options in addition to Hyper Alloy's superior lines of furnace muffles, corrugate boxes, and high alloy weldments".*

Along with the purchase of Hyper Alloys, Inc., Wirco, Inc. is also excited to announce a new sales partnership with sales representative firm Bristal Metal Products (Westlake, OH/West Mifflin, PA) who will be covering the states of OH, Western PA, and Western New York State. Bristal Metal Products is a three generation manufacturer's representative agency with over 60 years' experience specializing in supplying nickel alloy castings and fabrications for high temperature and corrosion resistant applications. As commented by Chris Dankert, Executive Vice President Wirco, Inc.,"With sales agents Doug Hawkins, Mark Shepard, and Ryan Hawkins along with their knowledgeable administrative staff Bristal Metal Products is well positioned to assist our Wirco/Hyper customers, and we look forward to developing new opportunities with their team".

Ever have the desire to be the **CEO** of a large commercial heat treat? You now have your chance. We received this note and while the company name is not mentioned it is painfully obvious that this is a company we mentioned a couple of months back when they were acquired by a venture capital firm; *"We've been retained by a highly respected private equity firm to fill a CEO position in the heat treatment industry. They've just completed their first acquisition and plan to do a roll-up of other heat treatment providers. The compensation package includes an equity opportunity. The hired CEO can live in any Midwest city that has easy access to a major airport."* **Arthur F. Lukowicz** passed away this past week at the age of 83. Arthur was a metallurgist by background who started at **Hi-Temp Heat Treating**. He was born on July 22, 1933. As a metallurgist, he worked his way up the company ladder to become president and eventually owner of Hi-Temp and three other heat treating companies.

We often preach that **nitriding** of all forms is one of the fastest growing processes in the heat treating industry. Gas, Plasma, Salt (well maybe not so much salt), and vacuum are all growing faster that virtually all other forms of heat treating. Within this market segment we have been seeing a great deal of growth in vacuum nitriding in particular. While it is still a small portion of the overall nitriding industry we have run across a few new orders popping up. While not always the best solution certainly in cases where long cycles are required **vacuum nitriding** is being considered more and more often. Wonder what a building for a commercial heat treat in Wisconsin is worth? *"Milwaukee-based Mikota Real Estate LLC sold Racine Heat Treating, 1215 Eighth St., to Racine-based GAIA Holdings LLC for $1.36 million. Darius Szczekocki owns GAIA Holdings.* **Racine Heat Treating** *does batch processing, induction hardening and vacuum hardening of metals."*

From the UK commercial heat treater **Wallwork** sent us this announcement about how they have just ordered another furnace; *"Five years on from installing our first aluminium furnace, which gave us a foothold in the highly specialised magnesium heat treatment market, business is now booming and a new furnace is on order to meet expected continuing growth. The new furnace will have a chamber with a plan area of 1 by 2 metres and height of 1.4 metres. This will permit much larger single items or component volumes to be processed than currently,*

with single batch loads up to 1500 Kilos. In addition to processing components, there is a demand to heat treat billets of aluminium and magnesium, enabling the materials to be more efficiently machined to produce a finer finish."

To round things out we have this press release from furnace builder **Lindberg/MPH**; Lindberg/MPH announced the shipment of an aluminum central melting furnace to the die casting industry. This equipment holds 62,000 lbs. of aluminum and has a melt rate of 6,000 lbs. per hour. The furnace is loaded with aluminum ingot, and sows across a preheat hearth and returns are fed via conveyor system into an exterior side well that is interconnected to a circulation well equipped with a pump. The aluminum on the hearth receives tremendous preheat before being pushed into the bath which increases efficiency and improves safety. May 1, 2017

USED & NEW EQUIPMENT

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

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

LISTING USED EQUIPMENT

Want to get true market value for your used heat treating equipment? "**themonty.com"** is the only way to do this! Unlike used equipment dealers we work on a commission basis meaning no high overheads, no buy and resells, no high expenses which means that you as a seller get what your equipment is worth-not what a used equipment dealer will pay you for it. Not sure what your equipment is worth or how saleable it is? Let us know and we can give you a free appraisal and an honest answer about market conditions-no BS. Before listing we will require a signed copy of the "**Terms and Conditions**". Please email Jordan at **jordan@themonty.com** all pertinent information including asking price (which we strongly recommend) age, condition and if possible photos. When selling please keep in mind that we do NOT ask for an exclusive sales agreement - if we don't sell it we don't get paid - PERIOD. You can't lose by listing with themonty.com we sell your equipment or we don't get paid-period.

Notice: We have attempted to describe all equipment accurately from the information we have available. Any mistakes are unintentional. We do not guarantee the accuracy of the information, nor can we guarantee the performance of the equipment or suitability to your application. The equipment is sold as-is, where-is. We strongly encourage your personal inspection of the equipment before purchase.

BATCH

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

- **Item # B431 Air Atmosphere Box Furnace 2,000 F**
- **Item # B430 Ipsen Recirculating Box Furnace**
- **Item # B429 Lindberg Batch IQ Installation**
- **Item # B428 Carbottom Furnace 1800 F**
- **Item # B427 SOLO Swiss Heat Treatment**
- **Item # B426 Plasma Nitriding Unit**
- **Item # B425 Box Furnace**
- **Item # B424 Atmosphere Box Furnace**
- **Item # B423 Grieve High Temperature Oven-UNUSED**
- **Item # B422 Ipsen Sealed Quench Line**
- **Item # B421 Surface Combustion “Super 36” Allcase**
- **Item # B418 Lindberg High Temperature Oven**
- **Item # B417 Fluidised Bed Furnace Line**
- **Item # B416 Car Bottom Furnace**
- **Item # B415 J.L. Becker Car Bottom**
- **Item # B414 Ipsen Batch IQ Installation**
- **Item # B413 Batch IQ Installation**
- **Item # B406 Carbottom Furnace**
- **Item # B405 Surface Combustion "Super 30" Allcase**
- **Item # B402 Holcroft Batch IQ Furnace**
- **Item # B401 Carbottom FurnaceHayes High**
- **Item # B400 Surface Combustion Super 30 Allcase**
- **Item # B399 Carbottom Furnace**
- **Item # B398 Sauder Batch IQ Line**
- **Item # B397 "Lift-Off" Atmosphere Box Furnaces (2 available)**
- **Item # B391 Ipsen T-11 Batch IQ Furnace**
- **Item # B388 Hydrogen Atmosphere Furnace**
- **Item #B386 High Temperature Tube Atmosphere Furnace**
- **Item # B385 Lindberg electric pit type cyclone furnace / nitriding furnace**
- **Item # B374 Atmosphere Box Furnace**
- **Item # B371 Sauder “Auto-Tilt” Car Bottom Furnace**
- **Item # B367 Atmosphere Box Furnace**
- **Item # B352 Pacific Scientific Box Furnace**

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-OOA. 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 # B429 LINDBERG BATCH IQ INSTALLATION
Lindberg Batch IQ Installation. We have available 4 gas fired Lindberg batch IQ furnaces with working dimensions of 30″ X 48″ X 30″. Endothermic atmosphere, updated Marathon controls operating temperature of 1750F. Currently doing carburizing. All our complete, installed and in production. Condition ranges from just rebuilt and in excellent condition to operating but will need some alloy replaced within the next year. Also available are tempers, generator, charge car spare parts etc. Vendor will sell as a complete package or individually.
Best offer.




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

Item # B426 Plasma Nitriding Unit Manufactured by Plateg this is a Plateg Puls Plasma Nitriding unit. Type; Hot Wall Plasma Nitriding Furnace (Tandem). Built in 1997, the programmer was replaced in 2017. Working dimensions of 1000 mm diameter X 1450 mm high. Load capacity 1000 kg. Installed power 95 kW, 400 V, 50 Hz, 160 A. Asking 98.000 Euro. Located in Turkey.


Item # B425 Box Furnace Box Furnace 42" High X 48" Wide X 14' Long. Manufactured by Lindberg. Working dimensions of 42" high x 48" wide x 14'-0" long. Electrically heated 480/3/60, 160 KW. Operating temperature of 2000F. Temperature Controls: Free standing enclosed panel with updated Honeywell controls, including circular chart recorder, SCR controls, back up contactors and step down transformers for the heating elements. Description & Features: Fiber lined. Heated by Ni-chrome ribbon heating elements on both side walls. Two zones of control. Air cylinder operated door. Includes motor driven load/unload system. 8000 pound capacity. Originally installed at Boeing. Condition: Good. Vendor will repair the back wall,




Item # B424 Atmosphere Box Furnace Atmosphere Box Furnace. Manufactured by Williams Industrial Services. Natural gas, 1.8 MBTU's. Working dimensions of 80" wide x 96" high x 60" deep. Radiant Tube Box Furnace. S/N 18932. Maximum temperature of 1750F. Voltage 480/3/60. Controls; Mounted & wired in a free standing enclosure includes a Honeywell digital controller/recorder, Eurotherm high limit. Mounted in the same enclosure includes "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 # B423 Grieve High Temperature Oven-UNUSED. Grieve High Temperature Oven-UNUSED. Model HD-243624-HT-ATM. Operating temperature of 2200F. 73 Amps, 480 volts, 60 Hertz. Working dimensions of 24” X 36” x 24”. Capable of nitrogen addition. 7 years old and never used or installed. Like new condition. New this was $75,000 USD. **Best offer.**



Item # B422 Ipsen Sealed Quench Line
Ipsen Sealed Quench Line. Located in Europe this line is currently installed but shut down very recently. Used for hardening and carburizing. Condition generally good. Asking Price £95,000.00. Does not include, dismantling, export packing and delivery. Line consists of the following items:

Ipsen TQF-7-EM Sealed Quench furnaces built in 1975. Electric heating. Load size 600kg. Forced cool fan in vestibule. Chamber size: 760 wide x 1220 long x 510 high mm.
Ipsen TQF-8-GRM Sealed quench furnace built in 1983. Gas heating with Recuperative burners. Load size 600kg. Forced cool fan in vestibule. Chamber size: 760 wide x 1220 long x 610 high mm.
Ipsen Tempering Furnace DAC-8-GR built in 1983 Gas heated by indirect radiant tubes. Can be used with an atmosphere with internal forced cooling. Load size 600kg: Chamber size: 760 wide x 1220 long x 610 high mm.
Ipsen Tempering Furnace DLRC-7-E built in 1976. Electrically heated with spiral wound elements. Load size 600kg. Chamber size: 760 wide x 1220 long x 510 high mm
Ipsen Parts Washer Model WPD-4-G Gas Fired. Ipsen Loader. Ipsen Unloader. Ipsen Endo Gas Generator Model G-1500-G built in 1983. Gas fired. 1500 CFH. Can be easily upgraded to produce 2000 CFH. Dewpointer, industrial scales and portable hardness tester also included.




Item # B421 Surface Combustion “Super 36” Allcase
Surface Combustion “Super 36” Allcase. Working dimensions of 36” X 48” X 36”, gas fired. Currently undergoing a rebuild and will be in “like new” combustion in 12 weeks. Gas fired, top cool option and hot oil. Vertical U tubes with safety platforms, ladders, all new motors, wiring, components and comes with new control cabinet with SSI controls and flow scopes. **Asking Price: $353,825 USD.**

Item # B418 Lindberg High Temperature Oven.
Model 41-MT-363636-2. Serial number 949223. Working dimensions of 36W x 36L x 36H. Manufactured in 1994. Maximum operating temp of 2050F.\u00a0 240V, 3-phase 60hz. Honeywell Truline round chart recorder, model DR45AT and Watlow F4 digital control. Air operated vertical lift front door. Heating is provided by Lindberg MPH heating elements. Recurculating fan is mounted in the bottom. Furnace can be used for hardening, carburizing, carbo-nitriding, normalizing, and annealing. Includes retort box measuring 34x34x32 with gas connection. Excellent condition. Only used in the jet aviation industry by 1 owner. The retort was purchased with the furnace but was not actually used. Retort is brand-new. Unit has been well taken care of. Also included is a Clark Hardness Tester, Model CPT. Asking $29,000 USD for both.




Item # B417 Fluidised Bed Furnace Line.
A complete fluidised bed heat treatment line only 6 years old, consisting of three fluidised bed furnace, a cooling fluid bed, plus auxiliary equipment. All furnaces are sized with a 600mm diameter x 1200mm deep work space (24" diameter x 48" deep) and are electrically heated, with SCR control.

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

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




Item # B416 Car Bottom Furnace.
Manufactured by Sauder this is a gas fired 6-burner car bottom style furnace. Serial Number: 751546 (1975). Working dimensions of 15' D x 10' W x 7'. Completely rebuilt and relined with 4" thick fibre in 2012 by Onex Inc. Dual Blowers. 6 North American burners model 4422-5 capable of 4.5 million BTU's. Was operating at 1200F but capable of much high temperatures with additional lining. Very good overall condition although the car needs minor repairs (repair materials included). **Asking $49,500 USD for quick sale.**

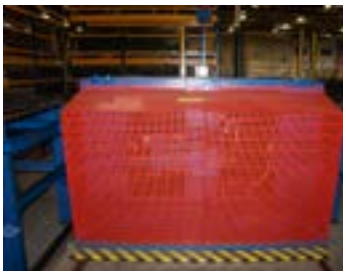



Item # B415 J.L. Becker Car Bottom.
Working Dimensions are 96" wide x 180" Long x 66"High with a Maximum Temperature of 1,800 Deg. F. Natural Gas fired with 4.3 Million Btu's. Serial Number: J 2060. Double Ended Car Bottom with Air Operated Doors to accommodate Dual - Full Length Motorized Cars. Each Car is 108" wide x 200" long with Castable Refractory Floor Insulation - Sand Sealed. The Furnace is Fiber/Refractory Lined with 8 Tempest Burners (4) per side wall, firing opposite and opposed. The Exhaust Flues are floor level mounted for excellent temperature uniformity. Temperature Controls : Free Standing Panel Honeywell Digital Controls and Honeywell Tru-line Circular Chart Recorder. **Asking Price: $125,000.00 USD.**




Item # B414 Ipsen Batch IQ Installation.
This 5 year old installation consists of 2 Ipsen carburizing furnaces with working dimensions of 36” X 48” X 36”, both gas fired. Four (4) gas fired Ipsen tempers 36” X 48” X 36” capable of 1400F, an Ipsen dunk/spray washer and 2 charge cars. Carburizing furnaces are a “flow through design” using endothermic atmosphere. Atmosphere control is through an oxygen probe/Siemens 3 gas IR system. The entire installation is designed for “lights out operation” meaning it is completely automated. Included is over $100,000 worth of spare parts along with 15 base trays and baskets. The equipment has just been removed and is in immaculate condition. New the system was $3.5 million USD, **Asking Price is $1.25 million USD.** Vendor will consider selling individual items.



Item # B413 Batch IQ Installation.
We have available a very impressive complete heat treat department consisting of the following; Six (6) batch IQ furnaces all gas fired with working dimensions of 36” X 48” X 32” and capable of 1750F. Eclipse burners. Half of these were manufactured by Holcroft the others build by Ipsen. All have top cools and five of six have 3,000 gallon quench tanks (the sixth has no quench tank). All are set up for Nitrogen/Methanol atmosphere. Also available are tempers, washers, charge cars, brand new alloy components and mountains of spare parts. Cast and fabricated baskets, base trays and fixturing are also available. Quench oil is also available Houghton 3440. Very recent UPC controls-all top of the line with 15” screens. Everything is in excellent condition and currently in operation. Vendor will consider selling components individually. **Asking price for each furnace is $125,000 USD. Please inquire about individual pricing for other items.**




Item # B406 Carbottom Furnace.
Working dimensions of 7’ wide X 7’ high X 12’ long. Manufactured by North American Manufacturing. Natural gas heated. Ceramic fibre lined. Very good condition. **Asking price and more details to come.**




Item # B405 Surface Combustion “Super 30” Allcase.
Surface Combustion batch IQ furnace with working dimensions of 30” X 48” X 30”. 1980’s vintage with dual quench cylinders. Currently electrically heated but vendor has a complete gas combustion system and is willing to convert the furnace to gas. To convert to gas heating the vendor is willing to quote the installation of the combustion system and adding U tubes. Good overall condition. **Asking $39,500 USD** for the furnace and combustion system.




Item # B402 Holcroft Batch IQ Furnace.
A Holcroft Model GPM batch IQ furnace with working dimensions of 36” wide X 48” deep X 30” high. Gross load capacity of 3,000 pounds. Gas fired with four 8” diameter U-Tubes and Hauck burner with recuperators. BTU input 1,350,000 BTU’s. Maximum operating temperature of 1800F. Uniformity from 950F to 1650F +- 10F. Quench tank 3400 gallons. Quench oil temperature 160F. Nitrogen Top Cool. Allen Bradley PLC 1400. SBS quench oil cooler which has never been used. Also included is a spare pusher head. Currently set up for nitriding but capable of carburizing. Installed and in good condition. **Asking $55,000 USD.**




Item # B401 Carbottom Furnace.
Gas fired recuperative, jet recirculating, annealing, normalizing, stress relieving car type furnace. Manufactured by Johnson, Serial number 1667. Working dimensions of 30' wide X 40' long X 15' high. Maximum operating temperature of 1800F. Utility requirements; 480 volts, 3 phase, 60 hertz. Natural gas; 1000 BTU/cubic foot. 4 PSIG maximum pressure. Honeywell controls with Allen Bradley SLC 503 PLC. Krom-Schroder flame safety management. Foot print 46' wide X 50' long X 36' high. Furnace has doors at both ends, fiber lined. 4 zones of control. Self propelled car.
Please call for pricing.




Item # B400 Surface Combustion Super 30 Allcase.
Surface Combustion Super 30 Allcase with working dimensions of 30" wide 48" deep X 24" high. S/N BC-41088-1. Electrically heated 480v/3ph/60cyle. Operating temperature 1350F to 1750F. Newer style with dual quench cylinders and top cool. Controls are in a free standing panel with Eurotherm digital controllers and over-temp. Multi-pro data logging and carbon control. Includes charge car. Good condition**. Asking $60,000 USD.**




Item # B399 Carbottom Furnace.
Manufactured by Huber this is a gas fired car type furnace. Maximum operating temperature of 2000F. Working dimensions of 10' 4" wide X 12' 8" long X 8' high. Overall dimensions of 16' wide X 16" long X 14' high. Gas fired. Electricity requirements; 480 Volts, 3 Phase, 60 Hertz. Controls; Watlow digital controller, Honeywell digital overtemp and Honeywell digital recorder. Power driven car with (3) three sets of axles. Door is attached to furnace. Furnace is fibre lined and equipped with (4) four power flame model JD 130 package burners. Approximately 1,300,000 btu's each.
Asking $85,000 USD.




Item # B398 Sauder Batch IQ Line.
Serial Number 881978-83. Electrically heated 480/3/60/150kW total load. Maximum operating temperature of 1850F. Working dimensions of 24" Wide X 24" high X 36" long. Controls; Mounted and wired in an enclosure attached to the right hand side of the furnace includes a Marathon 10 Pro digital temperature controller, Marathon Carbpro digital carbon controller, Barber Colman analog high limit and a Honeywell digital strip chart recorder. Three power meters are face mounted to the same enclosure which monitor power in each zone of the furnace. A Halmar "SCR" power controller controls power to the heating elements. Two (2) Allen Bradley PLC controllers are mounted in the same enclosure. Standard In/Out Integral Quench Furnace w/Top Cool. This line consists of IQ furnace with top cool, heated quench tank, charge car, dunk & spray washer, temper furnace, SBS oil cooler, scissors table, atmosphere flow panel and several spare parts. Very good condition. **Asking $125,000 USD for the complete line.**
Shipping Dimensions:

Temper Oven: 72"W x 11'H x 72"L
Washer: 80"W x 10'3"H x 120"L
Furnace: 109"W x 11'H x 96"L
Quench: 106" x 10'H x 72"
Top Cool: Skid - 5' x 5' x 6'H
Charge Car: 78"W x 60"H x 86"L
Misc. skids, flow panel, SBS, spare parts


Item # B397 "Lift-Off" Atmosphere Box Furnaces (2 available).
Manufactured by Drever. Effective working dimensions of 10'6" Wide x 35' Long x 6' High. Gas fired-12,000,000 BTU/Hr. Max. Operating temperature of 1450F. Description; Ceramic Fiber Lined, Vertical Rising Atmosphere "Lift-Off" Furnace complete with (26) U-Shaped Radiant Tubes, North American Burner System, (4) Top-Mounted Alloy Circulating Fans, (4) Zones of Control, Stationary Hearth, "Knife-Edge" Atmosphere Seal, and Hydraulic Lifting Cylinders on each end of furnace. Furnace is capable of 100,000 lb. loads. Instrumentation; Free-Standing Control Panel with Honeywell PLC Digital Temperature Controller, and Honeywell Flame Safety System. Very good condition. Overall dimensions of 15'11" Wide x 41' Long x 13'6" High. Approximate weight 70,000 pounds. Units each can hold up to 100,000# loads and were used prior for tempering/normalizing wire rod and bar stock. Both of these have top mounted recirculating fans and are "atmosphere capable", good for FNC work. **Asking $325,000 USD each.**




Item # B391 Ipsen T-11 Batch IQ Furnace.
Model T-11 gas fired batch IQ furnace with an operating temperature of 2000F. Working dimensions of 36”W x 24”H x 48”. Voltage 460/3/60. External dimensions of 9’W x 14’7”H (Assembled) x 22’L – Approx. Standard T-11 Ipsen batch type atmosphere furnace with integral hot oil quench. Furnace has “Waukee” flow meters for Ammonia, Endo, Air and Natural Gas. There are a total of twelve (12) Eclipse (SER) single ended recuperative burners with Kanthal APM (Advanced Powdered Metallurgical) vertical radiant tubes. Controls mounted and wired in an enclosure attached to the right hand side of the furnace includes the following a Yokogawa digital temperature control, Yokogawa digital over temp control, Yokogawa digital oil temp control, Yokogawa digital over temp (oil) control, three (3) A.C. Amp meters, one for each quench agitator and all necessary pushbuttons, signal lights, etc. Quench tank is gas fired with an Eclipse burner package. This furnace includes a stationary loader, gas fired Dunk & Spray washer, manuals & drawings. Good condition, just moved to indoor heated storage. **Asking $75,000 USD.**

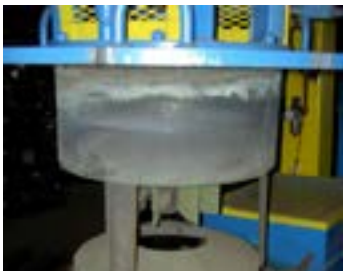



Item # B388 Hydrogen Atmosphere Furnace.
Manufacturer: CM Furnaces.Type: Hydrogen Atmosphere Box. Work Zone Size: 12” x 12” x 12” furnace work zone with 8” x 8” x 8” inside retort work area. Max. Temperature: 2000ºF. Uniformity: Full work zone, prob. +/- 50ºF. Lower 6”: prob. +/- 20ºF. Atmosphere: Wet or Dry Hydrogen or Nitrogen Purge. Controls: PLC - Automatic with Proface touch screen. **Price: $5,000 USD.**




ITEM # B386 HIGH TEMPERATURE TUBE ATMOSPHERE FURNACE
High Temperature Tube Atmosphere Furnace. Manufacturer: Blue-M. Type: Atmosphere Vertical Tube Furnace. Max. Temperature: 2500ºF. Work Zone Size: 2″ Diameter x 12″High. Heating: Electric, Globar elements. Tube: Ceramic. Atmosphere: Air or Any Suitable Purge Gas. Last Use: Thermocouple Calibration.
Price: $2,500 USD.

Item # B385 Lindberg electric pit type cyclone furnace / nitriding furnace type:
12-ec-1620-12, 480 volts, 27 kw, 3 phase, 1-1/2 h.p. fan motor,max opperating temp: 1250 f, working dimention: 16” dia. X 20” deep, aprox. Weight: 1700 lbs., heating elements: helical coil type nichrome v, this furnace is equipt with a sealed retort and fan assembly for gas nitriding. **$9,800.00 USD.**



Item # B374 ATMOSPHERE BOX FURNACE.
Manufacturer: R&G Services, Inc. Inside Dimensions: 18” high x 32” wide x 36” deep. Heated: Electric, 230/3/60, 60 KW. Temperature: 2100 deg. F Model Number: EB-183236 Serial Number: 77021 Temperature Controls: Updated indicating controller and overtemp. Description & Features: Air operated vertical rising door. Slanted face plate. Brick lined with silicon carbide hearth. Heated by heavy Nichrome ribbon heating elements. Atmosphere inlet and burn-off. Flame curtain with controls and safeties. Condition: Very good. Furnace will be cleaned & painted, repaired as necessary, checked out & test fired prior to shipment. **SALE PRICE: $18,000.00 USD.**

Item # B371 Sauder "Auto-Tilt" Car Bottom Furnace.
Working dimensions; ID: 8'wide x 30'long x 5'high, electric, 480/3/60, 325kw; 1400F, complete with ceramic fiber lining, 3 zones of control each with top mounted alloy recirculating fan, powered car with cast deck and 60,000# load capacity, hydraulic pump set for lifting cylinders, control panel with digital controls. Super clean and in operation.
Asking $179,000.00 USD including disconnecting and loading onto trucks.




Item #B367 Atmosphere Box Furnace.
Manufactured by McLaughlin Services. S/N MS-11-604-01. Natural gas heated-2.8 MBTU's/hour. Maximum operating temperature of 2000F. Voltage 480/3/60/100 Amps. Work area 166"W x 20"H top of piers to door arch, 32"H opening x 120"L. External dimensions; 16'W x 13'H x 14'L - Approx. Controls; Mounted and wired in a free standing panel includes an "Super Systems, Inc." (SSi) control system with HMI touchscreen interface. Front loading box furnace with an air operated vertical lift door. Furnace lining consists of ceramic fiber modules on the walls, roof and door. The floor is insulated with "IFB" Industrial Fire Brick. The furnace hearth consists of HT alloy rails and is designed to handle 4000 pounds @ 2000°F. There are two (2) roof mounted fans in this furnace to circulate heat and atmosphere. This furnace is equipped with two (2) Waukee Flo-Tronic Nitrogen Flowmeters. There are a total of ten (10) Kromschröder pulse firing recuperative burners that fire into "P" type radiant tubes. There are four (4) zones of control in this furnace. Excellent condition-like new. **Asking $165,000 USD.**




Item #B352 Pacific Scientific Box Furnace.
Working dimensions of 72" wide X 120" long X 48" high, Gas fired radiant tube, maximum operating temperature of 2050F. Air operated vertical lift door, fiber lines, new refractory piers (12), hi-temp horizontal radiant tubes (6 above, 6 below), full safeties, side exhaust guard. Free standing control panel-prewired panel with Honeywell Tru-Trend circular chart and Honeywell digital controllers and overtemp. Atmosphere capable. Comes with spare radiant tubes. Very good condition. **Asking $70,000 USD.**




CONTINUOUS

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

- **Item # C327 AGF Rotary Retort Line Model 280**
- **Item # C326 SOLO Swiss Mesh Belt Furnace**
- **Item # C325 Sinterite Mesh Belt Conveyor Furnace**
- **Item # C324 C.I. Hayes Mesh Belt Furnace**
- **Item # C323 Aichelin Cast Link Furnace Line**
- **Item # C322 Surface Combustion Rotary Hearth Furnace Line**
- **Item # C321 Austempering System**
- **Item # C320 Lindberg Pusher Line**
- **Item # C319 CI Hayes High Temperature Pusher Furnace**
- **Item # C317 CI Hayes High Temperature Pusher Furnace**
- **Item # C314 Roller Hearth Furnace (Atmosphere)**
- **Item # C312 Surface Combustion (Pifco) Roller Hearth Line**
- **Item # C311 Ipsen Pusher Line P-12**
- **Item # C308 AFC Mesh Belt Hardening Furnace**
- **Item # C302 Mesh Belt Austemper Lines (2 available)**
- **Item # C301 Cast Link Belt Quench and Temper Line**
- **Item # C299 Sunbeam Rotary Hearth Furnace**
- **Item # C296 C.I. Hayes High Temperature Tube Furnace**
- **Item # C283 Denton Thermal Systems 2150˚F Rotary Hearth Furnace**
- **Item # C269 CI Hayes Mesh Belt Brazing/ Sintering Furnace**
- **Item # C265 Sunbeam Pusher Carburizer**
- **Item # C219 ABBOTT**

ITEM # C327 AGF ROTARY RETORT LINE

AGF Rotary Retort Line. AGF model 280 rotary retort line. Includes lift bucket, dump and feed loader, high heat rotary retort furnace, rotary washer and temper. Set up for Neutral hardening and Carbo Nitriding with natural gas and endo atmosphere. The retort is 16″ OD X 14 ½” ID and 17’ long. Total weight 2600 pounds, HW material. Spare retort included. Buyer is responsible for disconnecting and loading however there are large overheads cranes in the area making removal quite simple. Asking price for everything including the spare retort is $95,000 USD.

Asking Price: $95,000 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 $80,000.00 USD or best offer.**




Item # C324 C.I. Hayes Mesh Belt Furnace
C.I. Hayes Mesh Belt Furnace. LAC Type. Work Zone: 12" Wide Belt, 12" High work area, 12' heat, 12' cool with 3 zones of temperature control. 1120C maximum temperature (2000F operating temperature). Power: 220V, 75KW, 212Amp, 60Hz , 3Ph. "Air Products" Gas Mixing Panel (N2, H2). Footprint: 9'W x 54'L (90'L Belt), 10'H + ductwork. Extra set of cooling muffles. **Asking price $50,000 USD.**



Item # C323 Aichelin Cast Link Furnace Line.
Aichelin Cast Link Furnace Line. The line consists of a loading table, cast link belt hardening furnace, oil quench, cross conveyor, post wash and two continuous tempering furnaces. High belt is 24” wide X 300” long with a capacity of 336 Kg/h. Nitrogen/Methanol atmosphere. Electrically heated 300 kW. Operating temperature of 1650F. Quench oil tank holds 7,000 litres. Air/oil quench oil cooler. Post wash has oil skimmer. Both tempering furnaces are electrically heated, 57 kW each. Belt widths 20” X 250” long. Maximum operating temperature of 575F. Installed in 2005 and currently used for automotive bearings. Complete installed and in operation until March 2017. Excellent condition. Best offer.



Item #C322 Surface Combustion Rotary Hearth Furnace Line.
This system was designed for heat treating and straightening crankshafts and consists of a rotary hearth furnace, 2 Gleason straightening presses and a robot for loading/unloading. The furnace is S/N CC11590-1 with an outside diameter of 17' 3", inside 15', inside height of 2' 11" with an overall height of 8" 6". Built August 1979. Gas fired with 8 trident tubes. Atmosphere is Endo/Natural gas. Nominal tray size is 5" X 21", number of tray positions 60, tray loader/unloader length 10' 6". Hearth has ceramic tray support and guide tiles and embedded in 12" thick insulating firebrick. Sidewalls consist of 9" of insulating firebrick backed with 4 1/2" of insulating block. Alloy and brickwork are both excellent. System is complete, installed but not in operation. **Asking $50,000 USD.**



Item # C321 Austempering System. Ipsen Model SG500, S/N52822.
Shaker hearth style hardening furnace is capable of 500 pounds/hour, 1850F operating temperature, gas fired 800,000 BTU's/hour with an 18" wide tray. Temper has an operating temperature of 800F and a heat input of 300,000 BTU's. Controls on both are Honeywell UDC units. Entire system consists of a magnetic conveyor loading system, Ipsen shaker-feeder-hopper. Mitsibushi variable speed AC drive on salt conveyors, 900 gallon wash tank with 30" conveyor and 280 gallon rust inhibitor tank with 32" conveyor. Currently installed but not in production. System is in reasonable condition but has not been used for some time. **Asking $20,000 USD or best offer.**



Item # C320 Lindberg Pusher Line.
Line consists of a 170F prewash, purge, 1500F pre-heat, 1550F high heat, 350F oil quench, air cool, 170F hot water wash, cold air quench, 375F three zone temper and 460F draw temper. Built and installed in 1976, electrically heated. Designed for martensitic heat treating of 52100 bearing steel. 10 trays in system each 46" X 28". Working height of 24". Each tray is capable of 700 pounds. Controls have been updated recently with a new SSI MCA6010 three gas analyzer. Currently installed and in production. Very well maintained and in excellent condition. **Very attractive asking price.**




Item # C319 CI Hayes High Temperature Pusher Furnace.
C.I. Hayes model MY-040848-94PH high temperature pusher furnace. 4” opening above the hearth, 8” tray width. Max. Temp: pre-heat 1100 C, High Heat 1700 C. 94” long preheat, 1 control instrument/1 zone, 15 KW@440/3/60, metallic heating elements. 48” high heat, 1 instrument, 3 control zones, 45 KW2440/3/60, molybdenum heating elements. 48” metallic front tunnel with nitrogen curtains and burn off. 3 cooling sections. each 36” long, 1 section is insulated and all are water jacketed. Rear tunnel with nitrogen curtains and burn off. Multiple atmosphere inlets, for hydrogen/dissociated ammonia with nitrogen purging. Pusher screw drive. Atmosphere bubbler. High heat chamber recently rebuilt. Overall Dimensions; 6’H x 4’-6”W x 39’L (Approx.) **Asking $100,000 USD.**




Item # C317 CI Hayes High Temperature Pusher Furnace.
Model MY-040848-94PH. 4” opening above furnace hearth. 8” tray width. Maximum temperature of the pre-heat is 1100C, maximum temperature of the high heat is 1700C. 94” preheat, 1 control instrument/1 zone, 30KW@440/3/60, metallic heating elements. 48” high heat, 3 instruments, 3 control zone, 45KW @ 440/3/60, moly heating elements. 48” metallic front tunnel with nitrogen curtains and burn off. 3 cooling sections each 36” long, 1 section is insulated and all are water jacketed. Rear tunnel with nitrogen curtains and burn off. Multiple atmosphere inlets for hydrogen/dissociated ammonia with nitrogen purging. Pusher screw drive. Atmosphere bubbler. Return conveyor system. High heat chamber recently rebuilt. Overall dimensions 6’ high X 7.5’ wide X 39’ long (approximate). Excellent condition. Furnace was used for co-firing, can be converted for sintering with preheat muffle. **Asking $110,000 USD.**




Item # C314 Roller Hearth Furnace (Atmosphere).
Manufactured by Wellman in 1982. Model #AL-81-180 RH, S/N 180. Working dimensions of 60” Wide x 42’ Long x 14” High – 4800#/HR. Electric – 480/3/60 – 469 KW (over (4) Zones of Control). Operating temperature of 1650° F. Brick Lined Atmosphere Capable Roller Hearth Furnace complete with (4) Zones of Control, Heating Elements above and below Rolls, Transformers, 25’ Slow Cool Chamber (Air Cooled with Fans), and Variable Speed Drive. Free Standing Control Panels with Watlow Digital Controllers ((1) Per Zone), Watlow High Limits, and SCR Power Controls. Overall dimensions; Entrance Chamber: 12’Wide x 14’ Long x 10’ 6” High. High Heat Chamber: 10’ 6” Wide x 30’ Long x 10’ 6” High. Cooling Zone: 12’ Wide x 27’ Long x 10’ 6” High. Approximate weight 80,000 pounds. Very good condition. **Asking $225,000 USD.**




Item # C312 Surface Combustion (Pifco) Roller Hearth Line.
60” x 60” Trays capable of 4000 lbs per tray. This line is gas fired and includes an SSi datalogging system. Also includes SBS Heat Exchangers and has waulkeetronic flow meters. Asking Price: $450,000 USD. **Must be removed within the next few months All Offers Considered.**




Item # C311 Ipsen Pusher Line P-12.
Rebuilt by JL Becker Company. This is a complete line which includes; a Pre-wash, Hardening Furnace, Oil Quench, Post Wash, and Temper. It’s setup for endothermic atmosphere and is currently installed and operating. Hardening furnace is capable of 1750 F and has 5 zones of control. Gross load 1000 pounds. 460 Volts/3 Phase/60Hertz. 3,000,000 BTU/hr heat input, gas fired, tray size 30” x 30” x 29” overall with loading. Good overall condition. **Asking Price $250, 000 USD. Must be removed within the next few months All Offers Considered.**



Item # C308 AFC Mesh Belt Hardening Furnace.
Manufactured by Atmosphere Furnace Company this furnace has working dimensions of 6” high x 54” wide x 12’ long (heated section). Gas fired with radiant tubes. Operating temperature of 1800F. S/N 6948. Temperature Controls: Free standing enclosed panel. Honeywell solid state digital readout indicating controllers, L&N overtemps. L&N strip chart temperature & carbon recorder. Marathon Monitors Carb-Pro carbon control. Description & Features: Fiber lined. Heated by (9)North American 4724-2-E burners firing into recuperated U-tubes. Two zones of control. Rear zone has a roof mounted recirculating fan. Cold belt return. Furnace has a flame curtain and complete combustion controls and safeties. Includes quench tank and conveyer. **Asking $75,000 USD.**




Item # C302 Mesh Belt Austemper Lines (2 available).
Built by AFC-Holcroft these are mesh belt, gas fired austemper lines. Parts to be processed are metered on to the variable speed, 30" wide mesh belt, travel through an 8" long high heat zone, drop into an electrically heated salt quench tank then are carried on a conveyor out of the quench tank and into a washer. A circulating fan distributes heat and atmosphere evenly though the heating area. Heat is supplied by two U shaped radiant tubes that are recuperated. SSI controls monitor and control the atmosphere gases. Furnaces were in operation until March 2015. One furnace is 1989 vintage the other is a 2000 vintage. Both are complete, in very good condition and currently in storage. **Please contact us for pricing.**




Item # C301 Cast Link Belt Quench and Temper Line.
Manufactured by Rogers Engineering 4,000 pounds/hour cast link belt furnace line consisting of a 1750F high heat furnace and 1700F temper furnace. Serial#CC-3977-0 (1997). High Heat Furnace: 48"W Omega Cast Link Belt, 4" pitch, 3" sides. Furnace has a 30'L heating section. Four (4) zones of control with three (3) roof mounted in the last three (3) zones. Maximum operating temperature of the hardening furnace is 1750°F. Furnace is radiant tube heated with recuperators. Furnace is currently set up for Endothermic w/Enriching Natural Gas & Air. Total BTU's for hardeneing furnace is 3,180,000 BTU/HR. Controls; All mounted in a free standing panel includes Allen Bradley PLC w/HMI Touchscreen, Honeywell UDC Digital Temperature Controls, SSi Carbon Controls. Voltage 480/3/60/200kW.

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

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

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

Very good condition, available immediately. **Asking $650,000 USD.**



Item # C299 Sunbeam Rotary Hearth Furnace.
Working diameter of 6', 8 station hearth, each station is 12" wide x 18" deep x 12 " high. The door opening is 1'-6" wide X 10" high. Gas fired, 620,000 BTU's, 3 radiant tubes and an operating temperature of 1750F. Built in 1977 and used for neutral hardening. Also included is a robotic arm for loading/unloading. The furnace is installed and in running condition, brand new radiant tubes and a rebuilt fan. All manuals and drawings are included. Good overall condition. **Asking $40,000 USD.**




Item # C296 C.I. Hayes High Temperature Tube Furnace.
Model MY-0002.528, 2-1/2" ID Tube x 28" Long Heating Chamber. Operating temperature of 1700ºC, 10.5 KW, Single Zone Control with overtemp protection. Overall dimensions of 75" H x 32" W x 91"L. Hydrogen Atmosphere. Included is an automatic loader. **Asking Price $21,000.00 OBO**




Item # C283 Denton Thermal Systems (O'Brien & Gere) 2150˚F Rotary Hearth Furnace System.
Includes high temperature furnace, Nitrogen-Methanol Panel and Quench Press. Working Zone: 6 ft Diameter Hearth, Door Opening is 14"W x 13"H Overall Size: 9ft-8in Diameter x 10ft-10"Tall. Heating: Electric, 125 kW, 1 Zone, Globar Heating Elements. Power Requirement: 200 Amps, 480V/3Ph/60Hz. Temperature Rating: 2150˚F. Water Requirement: 3 GPM. Air Requirement: 100 PSI. Controls: GE90 PLC. Honeywell Temperature Controller and Overtemp (missing but will be replaced). Marathon Monitors Carbon Control System. Includes Quench Press that was handling up to 5" Diameter bearings. Prior user reference available upon request. Asking price: **$29,000.00 USD.**




Item # C269 CI Hayes Mesh Belt Brazing/Sintering Furnace.
Working dimensions of 5” over belt, 12” wide X 120” of heated length. Electrically heated 230/3/60, operating temperature of 2100F. Model LAC. Temperature controls are new state of the art, control panel with Honeywell sold state digital readout controller and overtemp for each of three zones, includes volt and amp meters. Full alloy muffle in hot zone. 20’ long sealed water jacketed cooling. Globar heating elements over and under the belt. (3) zones of control. (4) argon flowmeters. Dayton AC inverter provides adjustable belt speed. Updated SCR controls. Muffle and belt are new. **Very good condition. Asking $39,000 USD.**




Item #C265 Sunbeam Pusher Carburizer.
This is a very unusual style of furnace and perfect for carburizing of large gears, bearings or races. Working dimensions of 50” X 50” X 34” high. Operating temperature of 1750F. 3,000 pound capacity. Gas fired 12 Honeywell composite single ended recuperated tubes (recently replaced). Surface Casemate controls. 1800 gallon quench tank. System does not need a pit. Comes with a spray washer, temper and an oversized IHRE air cooled quench oil cooler. System is installed but not currently in use. Very good condition. **Asking $40,000 USD**




Item #C219 ABBOTT MODEL 6ZSCR-18-432HH6-VC-2150.
18” wide belt, 3”+ opening over the belt, 432” heating chamber (silicon carbide muffles), six zones, 36” long vari-cool with 162” of additional cooling including two curtain boxes. 2150 deg.F. max temp., piped for dissociated ammonia atmosphere and nitrogen purge, 335 kw @ 480/3/60,Honeywell UMO 800 controller/programmer, OAD: 84” w x 90” h x 720” l. Currently used for annealing knife blades but with a little effort a metallic muffle in the front half of the heating chamber could be added for debinding and sintering of PM parts. **Asking price: $77,000 USD OBO.**



DRAW/TEMPER

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

- **Item # T341 Temper Furnace**
- **Item #T340 Safed/Borel Annealing Furnace**
- **Item #T339 Box Tempering Oven**
- **Item #T338 Walk In Oven**
- **Item #T337 Box Draw Furnace**
- **Item #T336 Mesh Belt Temper**
- **Item #T335 Batch**
- **Item # T333 Composite Curing Oven / Heat Treat Oven**
- **Item # T330 AGF Rotary Temper Furnace**
- **Item # T329 Guspro Heat Cleaning Oven**
- **Item # T327 AOV Aluminum Drop Bottom Oven System**
- **Item # T325 3-Station Despatch Temper Furnace**
- **Item # T324 Ipsen Temper Furnace**
- **Item # T323 Box Temper**
- **Item # T321 Grieve Conveyor Oven**
- **Item # T320 Pifco Conveyor Oven**
- **Item # T319 Temper 48" W X 48" D X 36" H**
- **Item # T318 Large Box Tempering Ovens (4 available)**
- **Item # T316 Grieve Model# HX-1000 Electric Oven**
- **Item # T315 Electric Oven**
- **Item # T312 Recirculating Walk-In Oven**
- **Item # T303 Pifco Temper Furnace**
- **Item # T301 Lucifer Furnace**
- **Item # T290 Tempering Ovens 36" X 48" X 36" (2 available)**
- **Item # T286 Lindberg Box Temper**

ITEM # 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 #T338 Walk In Oven
Walk In Oven. Recirculating walk in oven manufactured by Grieve. Model #B2-450, S/N 14094. Working dimensions of 72" high X 54" wide X 72" deep. Gas fired 350,000 BTU's. Temperature Controls: Partlow indicating controller and overtemp, process timer. Double swing open doors. Combination vertical and horizontal air flow. Insulated floor with tracks for a cart. Powered exhaust blower. Rear located combustion and fan chamber. Package burner system. Complete combustion controls and safeties. Door limit switch. Oven will be checked out and test fired prior to shipment. **Asking $13,500 USD.**




Item #T337 Box Draw Furnace 24"H X 24"W X 36" D
Box Draw Furnace 24"H X 24"W X 36" D. Recirculating box type draw furnace manufactured by Lindberg. Electrically heated 460/3/60, 42 KW. Operating temperature 1250F. Model 243624-E12, S/N 18794. Temperature Controls: Upgraded control panel with new temperature controls. Standard "Cyclone" design. Coiled Nichrome heating elements are housed in a separate chamber. A high velocity paddle wheel fan delivers the heat to the work chamber and provides good uniformity. Air cylinder operated vertical rising door. Brick lined. Roller hearth. Furnace will be cleaned and painted, checked out and test fired prior to shipment. Guaranteed operational. Note: Furnace can be reconnected to operate on 230/3/60. Very good condition. **Asking $18,500.00 USD.**




Item #T336 Mesh Belt Temper Furnace 48" Wide
Mesh Belt Temper Furnace 48" Wide. Continous belt temper furnace manufactured by Industrial Heating Equipment, Model # TF-5. Inside dimensions 10" over belt, 48" wide X 12' heating. Gas fired, Eclipse package burner. Maximum operating temperature 1000 F. Temperature Controls: Free standing enclosed panel. Solid state digital readout indicating controller & overtemp. Top mounted brick lined combustion chamber houses high velocity stainless steel circulating fan. Steel lined work chamber has 8-1/2" insulation. Stainless steel mesh belt on top of edge wire belt. Very good condition. **Asking $29,500 USD.**




Item #T335 Batch Oven 37"H X 37"W X 25"D
Batch Oven 37"H X 37"W X 25"D. Batch type recirculating oven manufactured by Despatch, Model V-29-STD. Inside dimensions of 37" high X 37" wide X 25" deep. Electrically heated 480/3/60, 12 KW. Serial number 126552. Temperature Controls: Partlow indicating controller and Honeywell overtemp, timer. Double swing open doors. Side mounted recirculating fan. Adjustable horizontal air flow. Provisions for 12 shelves, 4 shelves included. Powered exhaust blower. Oven has been checked out and test fired and is ready for immediate shipment. Excellent condition. **Asking $8,000.00 USD.**




Item #T333 Composite Curing Oven / Heat Treat Oven.
Manufactured by Epcon this unit has working dimensions of 30'L x 12'W x 12'H and overall dimensions of 31'3"L x 17'4.5"W x 22'4.5"H. Electrically heated with an Inconel 900 KW heater and an operating temperature of 800F. Two recirculating fans type; Two N.Y.B. Size 40 Plug Fans, capacity: 33,000 CFM Each. Motor HP: 30 HP-Each (480V/60HZ/3PH). Exhaust fan; type N.Y.B. Series 20 GI, Size 224DH, capacity 4,000 CFM, 5 HP motor. Interior is 18 Ga. Aluminized Steel and exterior is 18 Ga. Carbon Steel. Insulation: 8# Density Mineral Wool, 7" thickness. Control Panel: NEMA-12. Power Supply: 480V/60HZ/3PH. Double swing doors. Excellent condition, virtually unused. New this was $811,000 USD. **Asking $130,000 USD.**




Item #T330 AGF Rotary Temper Furnace.
ModelRCTP5-5D-3618manufacturedbyAmericanGasFurnaceCompany.Retortdiameter36",16'long.Gasfiredcapableof1200F. Eclipse burners. Overall length 23.5', width 64.5", height 10' 11". Very good overall condition.
Asking Price: $10,000.00 USD.


Item #T329 Guspro Heat Cleaning Oven.
Model G0484039ED51P354N, S/N C366. Working dimensions of 54" wide X 48" deep X 45" high. Process chamber has an operating temperature of 1,000F. Oxidizer chamber has an operating temperature of 1200-1600F. Complete and installed but not in use. Reasonable condition. **$2,000 or best offer.**


Item #T327 AOV Aluminum Drop Bottom Oven System.
Model: DBF-3X3-E. Electric Heat, 480V/3Ph/60Hz Work Zone: 3ft Dia. x 3ft H. Includes Quench tank. Temperature Rating: 1200˚F. Controls are included but need to be replaced. **Asking Price: $ 45,000 USD. Offers Considered**

Item # T325 3-Station Despatch Temper Furnace.
Manufactured in 1980 by Despatch Industries, Inc. 3 Independently loaded and operated furnace stations with shared panel. Tops elevate off bases for loading and unloading. Work Zone: 22”W x 40”L x 25”H Each. Hearth Height: Estimated at 36-40” (Can measure for you). Max. Temperature: 850ºF with a Uniformity of +/- 25ºF (Center area of 12”W x 20”L x 10”H meets +/-10ºF). Electrically heated with a power of 490V/3Ph/60Hz. 3 West 4400 Temperature Contrl. & West 6700 Hi-Limit. (We can quote upgrade to new Super Systems, Inc. controls, if desired.). Just rebuilt. New heating elements, new hearth ceramics, New stainless steel side panels, new paint. **Asking Price: $39,500 USD, Offers considered.**

Item # T324 Ipsen Temper Furnace.
Standard Ipsen design tempering furnace with vertical lift door, full width roller hearth and cermamic fiber board insulation. Door jambs are brick. Bottom mounted recirculating fan distributes the heated air. Gas train and combustion system is mounted to the right hand side of furnace. Manual load/unload table is included. Mounted and wired in a free standing enclosure attached to the furnace includes Honeywell UDC digital controllers and process timer etc. Heated: Natural Gas - 250,000 BTU’s. Model Number:DLR-11-G. Serial Number:57904. Max. Temperature:1200°F. Voltage:230/3/60/20 Amps. Work Area:36”W x 24”H x 48”L. External Dimensions:6’W x 10’H x 8’L. **Asking Price: $19,500 USD.**

Item # T323 Box Temper.
Manufactured by Despatch Industries this is a Model WB73, S/N 119895. Working dimensions of 42" wide X 72" long X 42" high, Overall dimensions are 97" wide X 103" long X 148" deep. Weight 11,500 pounds. Electrically heated 480V/120KW/3 Phase, maximum operating temperature 1350F. Digital temperature control and high limit control with a circular chart recorder. Air operated vertical lift door. Heated air is circulated by 2 roof mounted belt driven fans. Power to the elements is through SCR control. Air safety switches monitoring both fans will terminate power to the elements in the event of fan failure. There are provisions for two shelves, but no shelves are included. Tested and complete. **Asking Price: $29,500 USD.**




Item # T321 Grieve Conveyor Oven.
Electrically heated 460/3/60/160kW/235 Amps. Maximum operating temperature of 650F. Working dimensions of 24" wide X 14" high X 42' long. Controls; A Barber Colman 560 digital programmable temperature controller and a Barber Colman high limit safety. All control switches with indicating lights are flush mounted in the enclosure. SCR power controllers, high limit contactors, motor starters, fuses, relays etc. are mounted and wired inside the enclosure. Main power disconnect circuit breaker with panel mounted operator handle. Standard conveyor oven design with a flat wire conveyor belt. Three foot long charge table followed by a 42 foot long heating section divided into 2 zones of control. Each zone has separate heating elements and circulating fan located above the work chamber. Heated air is circulated down over the top of the belt for good uniform heating. Exhaust vents located on the top of each chamber. Access doors on the side for entrance into each zone. 4' long discharge table is included with this oven. Very good condition. **Asking Price: $42, 000 USD.**




Item # T320 Pifco Conveyor Oven.
Electrically heated 2 zone conveyor oven 480/3/60/144 kW. Maximum operating temperature of 600F. Work area; 72"W x 12"H x 25'L heated length. External dimensions 9'W x 10'H x 40'L – approx.. Controls; Mounted and wired in a free standing panel includes an Allen Bradley PLC with PanelView Plus 1000 touchscreen interface. Power to the heating elements are controlled through two (2) Allen Bradley "SCR" power controllers, one (1) for each zone. An Allen Bradley PowerFlex "VFD" controls oven conveyor belt speed. Standard two (2) zone electrically heated conveyor oven with a wire on edge belt. This oven has a 10'L load end and 8'L unload end with cooling. Access doors with "Brixon" door latches on both sides of oven and one in each heating chamber. Very good condition. **Asking Price: $59,000 USD.**



Item # T319 Temper 48” W X 48” D X 36” H. Manufactured by Williams in 1999.
Gas fired, burner box, operating temperature of 1500F. Fan included but needs to be installed. Some misc., components missing and minor repair required. **Asking Price: $29,000 USD.**



Item # T318 Large Box Tempering Ovens (4 available).
Built by Eisenmann in 2002, Model # HN-FNC-002. Working dimensions of 108” Wide x 96” Deep x 64” High. Natural gas fired, 3.2 million BTU’s per hour. Operating temperature of 1200F.

Description; Stainless Steel Lined Recirculating Box Tempering Oven complete with Top-Mounted Alloy Recirculating Fan (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 # T316 Grieve Model# HX-1000 Electric Oven. Max.
Temp: 1000ºF, +/- 10ºF Uniformity. Circulated Air: 1000 CFM, 3/4 H.P. Fan Motor. Insulation Thickness: 8”. Single door. Rated Work Zone: 38”W x 20”D x 26”H (Measures 36”W x 19”D x 25”H). Power Rating: 20 kW. New Upgraded Controls: Temperature - SSI Series 7 7EK (Super Systems, Inc.) Hi-Limit - SSI 7SL. Outside Dimensions: 62”W x 40”D x 61-1/2”H (new dim.). Approx. Shipping Wt.: 2740 lb. **Asking price: $8,900 USD.**



Item # T315 Grieve Model# HX-1250-E, Electric Oven, Max. Temp:
1250ºF, +/- 10ºF Uniformity. Circulated Air: 1400 CFM, 1 H.P. Fan Motor. Insulation Thickness: 10". Single door. Rated Work Zone: 38"W x 20"D x 26"H (Measures 36"W x 19"D x 25"H). Power Rating: 30 kW. New Upgraded Controls: Temperature - SSI Series 7 7EK (Super Systems, Inc.) Hi-Limit - SSI 7SL. Outside Dimensions: 66"W x 44"D x 65-1/2"H (new dim.). Approx. Shipping Wt.: 3300 lb. **Asking Price: $ 10,900 USD.**



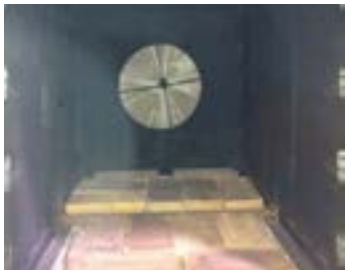

Item # T312 Recirculating Walk-In Oven.
Manufacturer: Despatch. Inside Dimensions: 66"high x 54"wide x 68"deep. Heated: Gas fired. DG-300 Heater. Temperature: 650 deg. F. Model Number: V-41. Serial Number: 96267. Temperature Controls: Partlow indicating controller and overtemp. Description & Features: 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.
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 60Hxz. Water 80 deg. F maximum @ 20PSI. Compressed air 60PSIG minimum. Adequate drain for water. Good condition. **Asking Price: $38,000 USD.**




Item # T301 Lucifer Furnace,
Model Number 46GT-R36, Serial Number 6418, Working Dimensions of 24” w x 36” d x 24” h. Insulation and elements are in good shape. Front lift door with a foot actuator. Controls: Honeywell round chart recorder, Honeywell overtemp, No controller. Power: 460/3/60 28 Kw 35 Amps, Temperature: Max 1650° F. Nitrogen Atmosphere. **Asking Price: $12,500.00 USD as is, where is.**


Item #T290 Tempering Ovens 36” X 48” X 36” (2 available).
Working dimensions of 36”W x 48”D x 36”H. Shells have just been completed and buyer has the option of Gas-Fired or Electric, Hearth Height, Burner Locations (Left or Right) and Panel Location. These can be completed, fully tested and ready to ship to your facility in 8-9 weeks at a very attractive price. **Please call for pricing.**




Item #T286 Lindberg Box Temper. Model 11-7212048-G14, S/N 24947. Working dimensions of 72” wide X 120” long X 48” high. Gas fired with a maximum operating temperature of 1200F. Vertical lift-air operated door, brick lined, 5 course refractory hearth, alloy roof baffles, alloy side wall ducts, dual zone burners-roof mounted combustion chambers with dual belt driven fans. Free standing prewired control panel. Good condition. **Asking Price: $65,000 USD**




GENERATORS

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

Item # G198 3,000 CFH Endothermic Generator.
Manufactured by Sunbeam, model # ENG-30, S/N F-377-79. Gas fired, operating temperature of 1900F. Temperature Controls: Upgraded controls. Honeywell digital indicating controller and overtemp. Single alloy retort. Selas compressor. Waukee flowmeters. Air cooled. Package burner. Complete combustion controls and safeties. Good condition.
Asking $22,500.00 USD.




Item # G197 Ammonia Dissociator.
Manufactured by Lindberg. 1,000 CFH. Model Number: 16-1000-HYAM. Serial number 26004. Electrically heated, 460/3/60, 30 KW, 37.6 amps. Operating Temperature: 2000 deg.F. Temperature Controls: Honeywell indicating controller and overtemp. Standard Lindberg design with vertical sealed catalyst chamber. Ceramic fiber insulation. Nichrome heating elements. Air cooled heat exchanger. Includes pressure gauges, SSOV, Waukee DA flowmeter. Includes operating manual and drawings. Very good condition. Unit is complete and guaranteed operational. **Asking Price $11,500.00 USD.**




Item # G196 Surface Combustion 5000 CFH Endo Generator.
Serial number AC 42332-1A. Maximum temperature 1950F. Barber-Coleman controls with digital recorder and over temp. Air cooled. Shipping dimensions of 8'5" W X 10'1" high X 8'11" long. Very good condition. Included is a new pump.
Asking $31,500.00 USD.




Item # G194 Endothermic Generator 9,000 CFH.
Manufactured by the JL Becker company this is a 3 retort, 9,000 CFH endothermic generator. Designed so that each retort can be shut down independent of the others. Air cooling. Control via PLC with touch screen interface. Currently installed but not in operation. Complete, in good shape and ready to operate. **Asking $75,000 USD.**


Item # G193 Pacific Scientific Endothermic Gas Generator.
Natural gas, Model # PGF 3000-EN, Serial #416417, Max Temp 1950°F, Voltage 460/3/60, Work Area 3000 CFH, Dimensions: 42'W x 86"H x 106"L - Approx. Standard "Pacific Scientic" 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 generastor. 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.
Two retort "multi-bottle" configuration allowing one retort to operate while the other is shut down for maintenance. New in 1995. S/N AC-43349-1. 2400 CFH capacity. Casemate controls, air cooling. Good condition. Currently installed and in operation but will be available shortly. **Asking $59,000 USD.**



Item #G178 Ammonia Dissociators (4 available).
Built by Sargeant & Wilbur, 4 electrically heated Ammonia Dissociators. Model GAD 3000E. 3,000 CFH capacity. Maximum temperature 1759F. Voltage 480/3/60/60 kW. External dimensions of 5'Wx6'Hx8'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 throught the rear wall without having to unpack furnace insulation etc. A step-down transformer (480V to 240V 112.5 KVA) is included. Manuals and drawings are also included. Very good condition. **Asking $29,500.00 USD each.**




Item # G176 Surface "Multi-Bottle" Endo Generators.
Manufactured by Surface Combustion. Natural gas heated 675 CFH/HR. Model # RX 35-75-3V. Maximum temperature 1950F. 7500 CFH capacity. Controls are complete, water cooled. SSi atmosphere controls and Atmosphere Engineering "EndoInjector". Very good condition, ready to go. **Asking $75,000 USD.**




Item #G173 Lindberg Endo Generator.
4500 CFH, gas fired. Retorts and brickwork are in excellent condition however it requires temperature controls and an air cooler (vendor has partially completed changing from water cooling to air).**Asking $17,500.00 USD.**




Item #G169 Gasbarre/Sinterite Furnace Division Endo Generator.
3000 CFH, electrically heated 460/3/60/63 Amps/50kW. New in 2006. External dimensions of 106" wide x 75" deep x 116" high. Controls are enclosed in a panel attached to the side of the generator. Honeywell UDC 3200 digital temperature controller and Honeywell UDC 2500 digital high limit safety. Control switches with indicating lights are flush mounted in the enclosure. Flange mounted fused disconnect switch for control power. Separate non fused disconnect for the main power. Waukee flow meters are manifold mounted for incoming and outgoing gases. Flow meters include: Natural Gas 0-1000 CFH, Air 0- 2500 CFH, (3) Mixed Gas 0-1500 CFH and Endo 0- 3500 CFH. Step down transformer for reduced voltage to the heating elements. Electrically heated 3 retort generator. Refractory lined shell with vertically mounted retorts. Total of twelve (12) silicon carbide heating elements, 6 on each side are mounted through the chamber for good uniform heating of the alloy retorts. The natural gas and air pass through a Waukee "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

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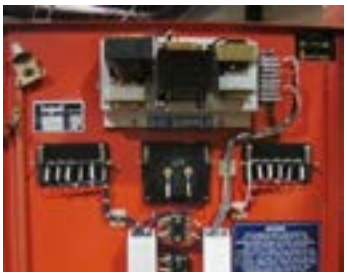
- **Item # I170 Inductoheat Induction Power Supply**
- **Item # I164 Ajax Tocco Induction Power Supply**
- **Item # I160 Ajax Tocco Power Supply (unused)**
- **Item # I158 Induction Power Supply**
- **Item # I153 Raydyne Induction System**

ITEM # I170 INDUCTOHEAT INDUCTION POWER SUPPLY
Inductoheat Induction Power Supply. This is a Lepel/ Inductoheat SP5-40 kW, 10 kHz SCR type induction heating power supply with a separate Heat Station (I believe this could be operated at 3 kHz but the heat station is currently arranged for 10 kHz). 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 Lepel/Inductoheat Power Supplies. A number of other Lepel/Inductoheat SP-11 units are available in the range of 30 to 60 kW, 200 kHz.
Asking $9,500.00 USD Or Best Offer


Item # I164 Ajax Tocco Induction Power Supply.
Model#OL-426-150-3/10-00M.Manufactured12/06.SerialNumber:46-1128-11.WiringDiag.:WD-287513.CKT.BKR.AMPS.:400. **Input Ratings:** Volts Min./Max. : 432/528 P.F. : 82 Amps.Max. : 291 KVA : 220 Freq.Hz. : 60Hz Phase : 3 **Output Ratings:** Volts : 512 KW : 150 Amps. : 389 Freq.Hz. : 3/10 KHz Phase : 1 This unit was sold new to Caterpillar in 2006 and never installed and never used. Excellent condition. **Asking $33,000 USD.**




Item #I160 Ajax Tocco Power Supply (unused).
Ajax Tocco Inductron PT power supply, capacity: 450kW. Frequency: 3-10 kHZ. Output Voltage: 400 *. Year of manufacture: 2006. This unit was never installed and is unused. *Price quoted from Ajax Tocco to convert output voltage from 400 to 800 including parts and labor is $15,230. http://www.ajaxtocco.com/applications/documentlibrary/Inductron%20PT_092003.pdf New this unit was $86,000 USD, **asking $39,000.00 USD.**




Item #I158 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. I
nput Voltage: 480V/3 Phase/60 Cycles/110 Amps, Output Voltage: 40 kW, 450 kHz, Year Built: 1985, Model of Power Supply: EI-40, Serial Number of Power Supply: 41408901-B. Please note the RF Tube is missing. Includes a dual heat station with quench. Model of Heating/Quench Station: 10228201, Serial Number of Heating/Quench Station: 10228201B. This system is Government Surplus and appears to be fairly clean inside power supply cabinet. The power supply has a “Control Concepts” SCR power controller. **Asking $7,500.00 USD.**




LAB EQUIPMENT

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

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

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

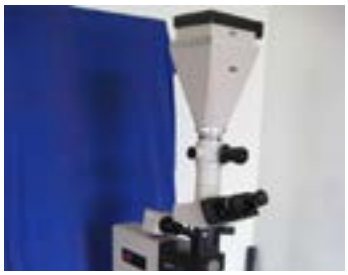
Item #L7 Leco Micro Hardness Tester.
Complete and in good condition. Unit has become surplus to the vendors organization. **Asking $7,000.00 USD.**

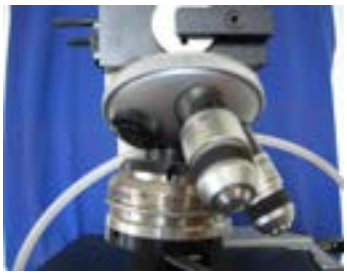
Item #L6 Detroit Testing Brinell Hardness Tester. Manufacturer:
Detroit Testing. Model: PHL2. Serial: 190. Range: 0 - 4500 kg. Footprint: 24”W x 37”L x 62”H (84”H with cart). In working condition. Last calibrated April 2016. **Asking Price: $7,000 or best offer.**

Item #L5 Air-O-Brinell Hardness Tester. Manufacturer:
Tinius Olsen “AIR-O-BRINELL”. Range: 0 - 3000 kg. Serial: 66990. Footprint: 15”W x 29”D x 44”H (68”H with table). In working condition. Last calibrated April 2016. **Asking Price: $5,500 or best offer.**

Item #L3 Laser Diffraction Particle Size Analyzer.
Manufactured by Microtrac, Model S3500. Measurement capability from 0.02 to 2800 microns. Wet and dry measurements. Complete and in very good shape. **Asking $20,000 for complete system.**

Item # L1 Spectra-Tech 0044-003 Infrared Microscope,
Model WHK 10X 201, Reflected & Transmitted light, multiple objectives, Polaroid 4x5 attachment. **$6,500.00 USD.**





MISCELLANEOUS

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

- **Item #M405 Used Transformers For Sale**
- **Item #M404 AFC Dunk/Spray Washer**
- **Item # M403 Houghton Aqua Quench 3699 Polymer (4)**
- **Item # M402 Closed Loop Water Cooling System**
- **Item # M401 Tenaxol Quench Oil Accelerator**
- **Item # M400 Nitrogen Generating System**
- **Item # M399 Eclipse Burners, Recuperators and Spark Igniters**
- **Item # M396 Surplus Cast Link Belt**
- **Item # M394 Hi Tech Weighing System**
- **Item # M393 AGF Rotary Washer**
- **Item # M391 Cryogenic Stainless Twin Tank**
- **Item # M385 Giant Finishing Machine**
- **Item # M381 Water Cooling System**
- **Item # M380 Wheelabrator**
- **Item # M379 Georg Fischer Shot Blast System**
- **Item # M378 1 Surface Combustion Radiant Tube and 4 supports**
- **Item # M370 SBS Quench Airs (2 available)**
- **Item # M366 Wheelabrator Rubber Belt Tumblast**
- **Item # M365 Dual Lane Conveyor Washer**
- **Item # M363 SBS Unit**
- **Item # M348 Ipsen Automatic Dunk/Spray Washer**
- **Item # M346 SBS "QuenchAir"**
- **Item # M341 AFC Charge Car**
- **Item # M334 Berg Water Chiller**
- **Item # M314 Holcroft Dunk/Spray Washer**

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 #M404 AFC DUNK/SPRAY WASHER
AFC Dunk/Spray Washer. Gas fired with working dimensions of 36” X 48” X 30” high. Serial number 60702. 480 violt, 3 phase, built in 1993. Currently set up to be loaded with a vacuum loader but could easily be converted back to a charge car configuration. Good condition.
Asking $10,000 USD.



Item #M403 Houghton Aqua Quench 3699 Polymer (4).
Available for sale are four (4) Totes of Houghton Aqua Quench 3699 Polymer Quenchant. Material has never been used. Total amount available is 1,000 Gallons.
Asking Price is $2,500.00.

Item #M402 Closed Loop Water Cooling System.
Manufactured by Dry Coolers in 2010. Model #CDX-150-120-ST. 480V/227V/30/60Hz. Closed loop system with air cooled heat exchanger, model AVR-35-15. S/NJ-4720. 15GPM. Controls: Mounted and wired in an enclosure attached to the pumping system includes digital temperature control, disconnect switch etc. Excellent condition.
Asking $7,950.00 USD.


Item #M401 Tenaxol Quench Oil Accelerator.
Available are 6 new, unopened 55 gallon drums of Tenaxol Quench Oil Accelerator for use with Park AAA quench oil. New this was $900.00 USD/drum, **asking $450.00 USD/drum.**


Item #M400 Nitrogen Generating System.
Manufactured by South Tek Systems in 2013 this system is in "like new" condition. The unit includes; STS N2-GEN 200S with Oxygen Analyzer, 1,060 Nitrogen Storage Tank, Kaeser ASD40T Complete Air Compressor package with Refrigerant Dryer and 240 Gallon Air Receiver Tank, Connection Package, Performance Capabilities: Nitrogen Purity Ranging from 95% - 99.999%, Nitrogen Hourly Flow Rate Ranging from: 473 SCFH – 5,371 SCFH *depending on purity setting, Nitrogen Outlet Pressure Range: 0 – 80 PSI. Excellent condition, available the end of June. **Asking $82,500.00 USD.**

Item #M399 Eclipse Burners, Recuperators and Spark Igniters.
All of these items are in "like new" condition and still in the original boxes. Vendor will sell as a complete package or as individual items.

Recuperators; Eclipse Bayonet Ultra Recuperator, Assembly 101849-24 (5BU, 24" tube length, low pressure drop model). S/N 07-27834580-8 45 units in inventory. Asking $1840 USD each.

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




Item #M394 Hi Tech Weighing System.
Excellent condition Hi Tech vibratory loading system suitable for a continuous furnace. Model PC 325-2 TEEDC, 460 VAC 60Hz, S/N 0546, built 03/09/02. **Asking $10,000 USD.**




Item #M393 AGF Rotary Washer.
Model RCW-W-R 23-2.5-4-4 gas fired rotary washer manufactured by American Gas Furnace Company. 23" diameter retort with 48" of washing and 48" of rinsing. Operating temperature of 150F-180F. Overall size is 13' long X 7.5' wide X 7' 10". Very good condition. **Asking $10,000 USD.**


Item #M391 Cryogenic Stainless Twin Tank.
Manufactured by NDA Engineering in 2006. Operating temperature to -346F. 240 Volt. from Internal dimensions left hand side 70cm x 65cm x 80 cm deep (364 litres), right hand side 70cm x 100cm x 80cm deep (560 litres) **Asking Price $6,500 USD.** Located in New Zealand.


Item #M385 Giant Finishing Machine.
Manufactured by "Giant", Model GB-10 Spiral bowl with Internal Seperation Vibratory Deburring and Finishing Machine. 10 cubic foot process capacity with 5 hp motor. Maximum load capacity 2,000 pounds. Bowl diameter 65", unload height 39". NEMA 12 control panel including 0-6 hour process timer and lapsed time recorder. Control panel is JIC approved and U.L. listed. Standard voltage; 460/3/60 cycle. This is a brand new, unused tumbler. New this was $45,000 USD,
asking $30,000 USD.

Item #M381 Water Cooling System.
VFC 500 gallon, 10HP 150 GPM pump, 3500 rpm motor. Plate heat exchanger, Graham model VFX-18, s/n 93-10058-1. This unit was used on 5,000 lb. loads. **Asking $7,500.00 USD.**



Item #M380 Wheelabrator – Bronco.
Model# SLC500. 36" Mesh Belt –VFD drive. 8 – 20hp Blasting Wheels – VFD drive. Media separator, Torrit dust collector. Some spare parts are also included. Well maintained and works well. Footprint – 30' long, 16' high, aprox. 12' wide. **Asking Price: $39,900 USD. (Includes loading at the facility)**




Item #M379 Georg Fischer Shot Blast System.
This unit is currently installed and in very good condition. Included are $10,000 worth of spare parts. **Asking $20,000 USD.**




Item #M378 1 Surface Combustion Radiant Tube and 4 supports.
Brand New the cost was $1,844 for the tube and $448 each for the supports for a total of $3,636 in 2014. The radiant tube is Surface Combustion inventory # 850628 and the support is part # 70R64/L. They are a set for a Standard Allcase furnace. One leg of the tube is 3/12 inches in diameter and 62 inches long. The other is 4 ½ inches in diameter and 60 inches long.
Asking $3,000 USD.



Item # M373 Gibson Tumblast. 6 Cubic Feet Rubber Belt Tumblast.
No loader or dust collector. Good condition. **Asking $15,000 USD. Must be removed within the next few months All Offers Considered.**


Item # M372 Pangborn Rotoblast.
Pangborn® Rotoblast® Barrel Model 12GN. 12 Cubic Feet Rubber Belt Tumblast w/Loader & Dust Collector. Good condition. **Asking $30,000 USD. Must be removed within the next few months All Offers Considered.**


Item # M371 Dry Coolers Pumping Station.
Medium sized Dry Coolers closed loop water cooling system. Installed and complete. More details to come. **Asking $7,500 USD. Must be removed within the next few months All Offers Considered.**


Item # M370 SBS Quench Airs (2 available).
Manufactured by SBS Corp., these are air/oil quench oil coolers. Each is a 3 fan unit with disconnect and 480 volt. Suitable for a large continuous line. Installed indoors. Very good condition. **Asking $12,500 USD each. Must be removed within the next few months All Offers Considered.**


Item # M366 Wheelabrator Rubber Belt Tumblast.
Model # TBR-12, Serial # A142403, Voltage 480/3/60, 12 cubic feet, Controls - complete. Available Immderiately, very good condition**. Asking: $55, 000.00 USD.**


Item # M365 Manufacturer: Grapar. Type:
Dual Lane Conveyor Washer. Heated: Natural Gas. Dual Lane Washer Serial Number: 08-010 (2008). Max Temperature: N/A. Voltage: 480/3/60. Work Area: 11”W x 7”H. Each Lane External Dimensions: 8’W x 10’6H 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. 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.
Model #WRD-11, Serial Number 57690. Working dimensions of 36” wide X 48” deep X 24”+ high, 2200 pound capacity. Electrically heated, 72KW. Companion washer-In/Out or straight through design. Door each end, Cal Rod element bundle. 12” wide belt oil skimmer, air operated-full width elevator rack for submerged oscillation, overhead spray rinse. Overall dimensions of 7’ 5” wide X 5’ 4” long X 11’ 8” high. **Rebuilt, excellent condition asking $35,000 USD.**




Item # M346 SBS “QuenchAir”.
SBS Corporation air/oil quench oil cooler. Single fan unit model 5084-Q4. Serial number: 2365, 230/460 voltage, overall size: 74”wide X 104”long X 55”high. Comes with disconnects. Very good condition. **Asking $5,500.00 USD.**



Item # M341 AFC Charge Car.
Drawing # MT-237014. Voltage 480/3/60. Suited for a 36” wide X 48” tray. External dimensions of 100” wide X 84” deep X 84” high. Side mounted control panel with Allen Bradley SLC 500 PLC Logic Control. Double ended chain driven powered charge car with roller rail top. Excellent condition. **Asking $28,500.00 USD.**




Item # M336 Cryogenic Unit.
NU-BIT Cryomersion Model 1500, S/N 9911119. This is a liquid nitrogen cryogenic unit used for treating material to -310 degrees Fahrenheit. Working dimensions of 40” X 30” high X 30” wide. Maximum load 1500 pounds, normal load 800 pounds. 230 volts AC-20 amps., 3 phase, 60 HZ. Overall dimensions 14’ long X 11’ wide X 13’ high. Manufactured in 1999. Good operating condition with all manuals and drawings included. **Asking $10,000 USD.**

Item # M334 Berg Water Chiller.
This is a BERG Air Cooled portable Chiller, Model PA-1.5-1P capable of supplying 1.5 tons of cooling capacity at 15 degrees F leaving and 95 degrees F ambient temperature. Used for only 3 days (low hours), and is in nearly new condition. Electrics are 460/3/60 and it comes with a 575-460 transformer. **Asking $5,500.00.**


Item #M314 Holcroft Dunk/Spray Washer.
Model GPWS 24-36-24. Electrically heated, 480/3/60/50 amps. Working dimensions of 24” wide X 24” high X 36” deep. External dimensions of 96”W X 143” high X 124” long (91” without skimmer attached). This is a standard dunk/spray washer with 4 Warren Electric immersion heaters. Spray nozzles are arranged over and all sides of the wash area. Load height is 51” from floor to top of rollers. Wheel centres are 14-1/2”. Controls are mounted and wired on the right hand side of the washer and includes all necessary pushbuttons and signal lights. There is a dunk cycle timer and spray cycle timer. A Honeywell UDC 2000 digital temperature controller controls wash temperature. Good condition. **Asking $18,500.00 USD.**




SALT

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

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 though the heating area. Heat is supplied by two U shaped radiant tubes that are recuperated. SSI controls monitor and control the atmosphere gases. Furnaces were in operation until March 2015. One furnace is 1989 vintage the other is a 2000 vintage. Both are complete, in very good condition and currently in storage.

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




VACUUM

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

- **Item # VF322 Vacuum Sintering Furnace, 2,000 C**
- **Item # VF321 Ipsen Vacuum Furnace**
- **Item # VF320 High Temperature Vacuum Furnace**
- **Item # VF319 Vacuum Induction Melting System**
- **Item # VF317 Twin High Temperature Vacuum HT & Sintering Furnaces**
- **Item # VF316 AVS Vacuum Furnace**
- **Item # VF315 AVS Vacuum Furnace (Rebuilt)**
- **Item # VF314 Ipsen Bottom Load Vacuum Furnace**
- **Item # VF313 Top Loading Vacuum Furnaces (6 available)**
- **Item # VF312 2400C Vacuum Furnace**
- **Item # VF311 Vacuum Furnace 6 Bar Quenching**
- **Item # VF309 Abar Ipsen Vacuum Furnace**
- **Item # VF307 Bottom Loading Vacuum Furnace**
- **Item # VF306 Edwards Stokes 1722-J Skid**
- **Item # VF305 Vacuum Hot Press**
- **Item # VF303 Surface Combustion Vacuum Temper**
- **Item # VF301 Vac Aero 2 Bar Vacuum Furnace**
- **Item # VF300 Stokes Microvac Pump**
- **Item # VF299 Sunbeam Vacuum Furnace**
- **Item # VF297 Remanufactured Stokes 412H-11 Piston vacuum pump**
- **Item # VF296 Remanufactured Stokes 212J Piston vacuum pump**
- **Item # VF295 Varian/Agilent HS-20, Diffusion Vacuum Pump**
- **Item # VF294 Vacuum Annealing Furnace**
- **Item # VF289 Ipsen Vacuum Temper Furnace**
- **Item # VF285 20" Right Angle Poppet Valves (4 available)**
- **Item # VF282 AVS Vacuum Debinding/Sintering Furnace**
- **Item # VF281 Surface Combustion Vacuum Furnace**
- **Item # VF271 SINTERING/DE-WAX FURNACE**
- **Item # VF267 Semi-Continuous Titanium Diffusion Bonding Hot Press**
- **Item # VF266 Kinney 75 CFM Vacuum Pump**
- **Item # VF265 Stokes 149H-11 80 CFM Vacuum Pump**
- **Item # VF255 Roots Gas Blower**
- **Item # VF254 MD Blower, 350 CFM**
- **Item # VF243 35" Diffusion Pump**
- **Item # VF242 35" Diffusion Pump**

ITEM # VF322 VACUUM SINTERING FURNACE, 2,000 C

Vacuum Sintering Furnace, 2,000 C. Horizontal Vacuum Sintering Furnace System for processing graphite and ceramics. Manufactured by AVS, Model HGF-22-21-62-2000. Work zone is 22" wide x 21" high x 62" deep. 12 cubic feet, maximum load of 350 kgs. Temperature: 2000 □C maximum operating temperature. Temperatures above 1700 □C require partial pressure or positive pressure. Maximum heat rate is 10 □C/min ramp rate for room temperature to 1600 □C, ± 10 □C uniformity @ up to 1600 □C in vacuum. Rotary piston roughing pump. Evacuates chamber to 20 micron in 10-15 minutes, empty (5 X 10□³ Torr Ultimate vacuum) 5 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; HORIZONTIAL GRAPHITE FURNACE – Furnace is heated by graphite elements (no CFC) and insulated by rigidized graphite felt faced with graphoil. Includes heart rails with rollers for easy loading.

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

Asking $199,000 USD.




ITEM # VF321 IPSEN VACUUM FURNACE

Ipsen Vacuum Furnace:

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

Price: $58,000 USD.




Item # VF320 High Temperature Vacuum Furnace
High Temperature Vacuum Furnace. Manufactured by Thermal Technologies LLC, Model 121224G. Working dimensions of 12" wide X 12" high X 24" deep. Maximum load weight of 200 pounds. Operating temperature of 1565C, maximum temperature of 2000C. Operating vacuum level 10-2 torr range. Ultimate vacuum level 10-3 torr. Process gas argon. Front and rear doors. Graphite heating elements with rigid fibrous graphite insulation panels (hot zone is NOT installed but virtually all the components are included) 125jVA power supply. Rotary vane pump , Trivac B Leybold Model D65B (53CFM). Eurotherm Model 2704 high performance controller/programmer with SpecView software. Furnace comes complete with chiller and parts washer. **Asking $100,000 USD for everything.**

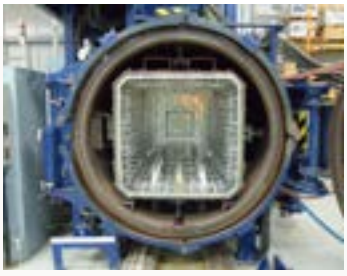



Item # VF319 Vacuum Induction Melting System
Vacuum Induction Melting System. Manufactured by Ionex, Model 260 LB VIM, S/N 93978. Electrically heated 480/3/60/200 KVA. Work area 150 kW, 3 kHz, 260 Pound. External dimensions of 10' wide X 10' high X 15' long. Controls; Complete with PLC and touchscreen HMI interface. 260 pound horizontal front loading VIM with water cooled stainless steel vacuum chamber. Pumping system includes a BOC/Edwards 1722 package with mechanical pump/booster and a stainless steel 20" T-M Vacuum diffusion pump. Induction power supply consists of a Pillar 150 kW, 3 kHz and includes water cooled power leads. This furnace has automatic tilt and includes two (2) crucibles. Also included with this VIM is a rotating load table that moves up and down for accurate pouring. Lot of misc. spare parts and molds are included. **Excellent condition. Asking $285,000 USD.**

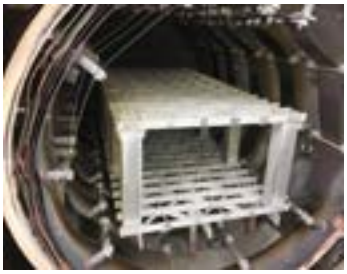



Item # VF317 Twin High Temperature Vacuum HT & Sintering Furnaces
Twin High Temperature Vacuum HT & Sintering Furnaces. Two each 2010 Seco/Warwick Model V40-35/48 Vacuum Furnaces, 1500C (2732 F) Max. operating temperature, 1600C (2912F) burn-out temperature, Work Zones: 600mm x 650mm x 1200mm (23.6" x 25.6" x 47.2"), Design uniformity +/- 10C, but with elements on all 6 sides we would expect much better uniformity, One furnace hot zone is in excellent condition and the other is nearing time for replacement, All-Metal Hot Zones (Layers: 1 Tungsten, 7 Moly, 1 Stainless Steel), Low voltage Tungsten Heating Elements, Moly hearth, Load Rating: 2850 lb. (1300 Kg), Power: 480V/3Ph/60Hz, 390 kW SCR Heating Input with 3-zone control, 420 kVA total power, Stainless steel chamber, water jacket and hot zone plenum, Controls are CompactLogix PLC with computer, touch screen and SCADA software, Leybold TTR91 pirani vacuum sensor, Edwards (Stokes) 212J mechanical pump with Edwards 607 booster pump, Gases set up for Argon cooling and hydrogen purge, Hydrogen mass flow controller, Gas quench pressure rating is 1.05 Bar absolute. Mezzanine-mounted power supplies for minimal floor space requirement. Both furnaces (2), factory loader and existing spare parts are included at this price. Disassembly and Loading: Buyer's responsibility. **Asking $275,000 USD for Both.**



Item # VF316 AVS Vacuum Furnace
AVS Vacuum Furnace. Model HMF-24-24-48-1100. Hot Zone: 24” x 24” x 48” deep, Moly with moly elements. Eurotherm controls 2704 & 2116i, Turbopump controller needs to be replaced. Operating temperature of 2400F. Cryotorr high vacuum pump; Turbopump may need rebuild. Additional Port for 20” Diffusion Pump. Current footprint: 15' Deep x 15' Wide x 11' High (8'H without power supply). Power: 250KVA, 440-480V, 3Ph, 60Hz. 2-Tier Moly Fixture. VFD on blower. Rear Access Door. Needs new hot zone. May need turbopump and turbopump controller. **Asking $115,000 USD.**

Item # VF315 AVS Vacuum Furnace (Rebuilt)
AVS Vacuum Furnace (Rebuilt). Model HMF-24-24-48-1100, Hot Zone: 24” x 24” x 48” deep, Moly with moly elements. Controls new in 2015. Operating temperature of 2400F. Pumps: Cryotorr high vacuum pump; Turbovac MAG Intregra roughing pump; New turbopumps and valving in 2015. Additional Port for 20” Diffusion Pump. (GVT has 20" D.P. & right angle valve available). CTI-Cryogenics 9600 compressor. Current footprint: 15' Deep x 15' Wide x 11' High (8'H without power supply). Power: 250KVA, 440-480V, 3Ph, 60Hz. Loader Included as well as a 2-Tier Moly Fixture. VFD on blower. Rear Access Door. Very good condition. Rebuilt July 2015. Asking $200,000 USD.




Item # VF314 Ipsen Bottom Load Vacuum Furnace
Ipsen Bottom Load Vacuum Furnace. Work Zone: 60” Diameter x 96” Tall with a Temperature of 2400F. Diffusion pump: 35" diffusion pump, with port and right angle valve. Manufactured in the 1980's with a Power of 480V/3Ph/60Hz; 600kW. Hot Zone: 2008 reline, graphite elements. Cooling Gas: Was running Argon; capable of 1-Bar cooling. Top mounted cooling fan. Water Cooling: Includes Dry Cooler closed-loop AquaVent water cooling system; 2005, 200 GPM, Plate & Frame Heat Exchanger with Thermacare fiberglass Tower. **Asking Price: $325,000 USD.**




Item # VF313 Top Loading Vacuum Furnaces (6 available)
Top Loading Vacuum Furnaces (6 available). Manufactured by GT Technologies, Model # AMPF-4836HP – 2015. Working dimensions of 1200mm diameter x 900mm High. Operating temperature of 2100C. Controls by Loy Instruments (Honeywell graphic touchscreen). This unique ultra high temperature furnace is high vacuum, has resistance heating with all graphite hot zone and graphite felt insulation for high efficiency operation. 480 volt 3PH 50/60 HZ, 160 KVA. Maximum load 1,000 KG. Double Wall Stainless Steel Vessel construction. Platform with Stairs included. Halogen Gas Purge equipped, Dry Vacuum Pumping System with Blower. Graphite Purity levels to less than 5ppm. Cycle time 72 – 84 hours. 10 – 3 Torr vacuum level achievable. Options: Exhaust Scrubber System, Overhead Crane. Very good condition. **Asking $175,000 USD each.**



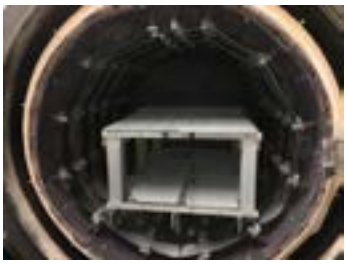
Item # VF312 2400C Vacuum Furnace
2400C Vacuum Furnace. Capable of 2400C (4320F). Working dimensions of 10" high x 22" wide x 36" deep element-to-element. External dimensions of 86” high x 76” wide x 85” deep. 480 volts, 3 phase, 225 kw. This unit is capable of both vacuum and atmosphere operation. Graphite rigid board insulations, graphite heating elements on all 4 sides, graphite hearth plate, 6 channel digital chart recorder, Yokogawa UP 550 digital programmable controller. High accuracy Raytek digital optical pyrometer. All New Vacuum Chamber – Tested and Certified and new graphite hot zone. Very good condition. **Asking $149,000 USD.**




Item # VF311 Vacuum Furnace 6 Bar Quenching (Located in Turkey)
Vacuum Furnace 6 Bar Quenching (Located in Turkey). Working dimensions of 600 X 900 X 600 mm. 800 KG load capacity. Maximum operating temperature of 1350C. 6 bar quenching, nitrogen. 140kW heating capacity. Temperature uniformity of +-5C above 850C with convection. Hard graphite felt insulation hot zone. Ultimate vacuum level of 8 X 10-2 mbar with rotary vane pump and roots pump. 380-220V-50HZ-3 phase. Excellent condition. **Asking 155.000 Euro.**




Item # VF309 Abar Ipsen Vacuum Furnace
Abar Ipsen Vacuum Furnace. Model HR 34 X 36. Hot zone 24” X 24” X 36”, moly construction with moly elements. Eurotherm 2704 & 92HL controls. Operating temperature of 2500F. 20” Diffusion Pump with Stokes 212 mechanical pump in sound-reducing enclosure. Spare Rebuilt Stokes 212 mechanical pump available. Current footprint: 24' Deep x 18' Wide x 12' High. Power: 3 zone control, 55 KVA each = 165 KVA Total Heating Power. Loader included and 2 tier moly Grid Fixture. H2 purge. Good condition, was in production until January 1st, 2017. Vessel was new in 1990. **Asking $85,000 USD**.• Flexible vacuum hose included. **Asking $7,500 USD.**


Item # VF307 Bottom Loading Vacuum Furnace.
Manufactured by Vac Aero. 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 Setpoint programmer. Edwards vacuum gauge controller. Furnace is installed and presently in operation. Customer responsible for removal. Complete and in good overall condition.




Item # VF306 Edwards Stokes 1722-J Skid.
Warranty rebuilt Stokes 1722-J Skid. Stokes Model 900-412-014 Mechanical Pump (Newer Style), S/N: 069034482. Date: 2006-11. Motor: 10 H.P. Stokes 615-1 Blower. S/N: 813770X0898 Lot: 78315-38. Motor: 7.5 H.P. Skid Mounted. Interconnecting Pipe and Fittings. Stokes Demister. Immediate Availability. **Asking Price: $ 23,500** in rebuilt condition with Rebuilder’s

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

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

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



Item # VF303 Surface Combustion Vacuum Temper.
Manufactured by Surface Combustion Model HVT 36-48-24, S/N BO 40016-1. 220Volt, 3 phase, 60Hz, 220Kw. Working dimensions of 36” wide X 24” high X 48” deep with a weight capacity of 2,500 pounds. Not in use or installed. Most components are included but this unit should be regarded as a “project”. **Asking Price: $5,000 USD or best offer.**

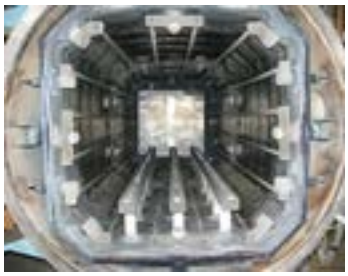
Item # VF301 Vac Aero 2 Bar Vacuum Furnace.
Model #VAH 4848-HV2. Working dimensions of 48” X 48”, rated for 1500 pound loads. Serial #BM 981, built in 1998. Stokes vacuum pump #615-1. Serial number 915240E0498. Updated Allen Bradley controls. No diffusion pump but it does have a port for one. Good condition. Currently installed and in use for approximately 6 more weeks. **Asking Price: $150,000 USD.**

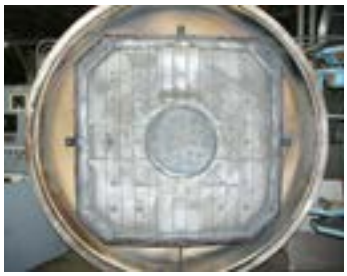



Item # VF300 Stokes Microvac Pump.
Model #212H-11 150 CFM 5HP motor. Roots Rotary Lobe Booster Pump. ID #839 697 020. Designation #38-RGS. Skid Mounted 1896 lbs. **Asking Price: $6600 USD or best reasonable offer.**



Item # VF299 Sunbeam Vacuum Furnace.
Model # 40236, Serial Number F-170-82. Working dimensions of 36" wide X 120" long X 36" high. Maximum operating temperature of 2552F (1400C). 460 volts, 400Kw, 3 phase. Honeywell digital program control, Honeywell digital overtemperature control, Honeywell strip chart (inoperative) and Granville-Phillips 375 Convectron vacuum controller in enclosed panel. Double walled water cooled horizontal load vessel. Interior has a molybdenum liner with graphite heating elements on both walls, roof and floor. 20 HP cooling fan mounted in rear. Pumping system consists of a Stokes 412-11 mechanical pump with Roots booster. Power to the heating elements is through VRT's. A battery powered loader in included. Some of the heating elements were damaged during shipment and will need to be replaced by buyer. **Asking Price: $95,000 USD.**



Item # VF297 Remanufactured Stokes 412H-11 Piston vacuum pump,
300CFM pumping speed, 4" ASA Inlet / 3" NPT Exhaust connection, 10HP, 230/460V, 50/60 Hz, 3-phase operation, water cooled, prepared for hydrocarbon oil. 12 Month Warranty. Part Number: ED-412H11-R. Pump Model: ED-A900412011. Price New: $24,927.00. **Asking Price: $14,950.00.**

Item # VF296 Remanufactured Stokes/Edwards 212J Piston vacuum pump,
150 CFM pumping speed, 3" ASA Inlet / 2" FNPT Exhaust connection, 7.5 HP, 230/460V, 60 Hz, 3-phase operation, water cooled, prepared for hydrocarbon oil. 12 month warranty. CSA marked. Part Number: ED-212J-R. Pump Model: ED-900212014. Price New: $16,150.00. **Asking Price: $9,750.00.**

Item # VF295 New Surplus Varian/Agilent HS-20,
Diffusion vacuum pump with ASA flanges, with a Standard Cold Cap, 17,500 l/s pumping speed, rated for 480V, 3-phase operation. 12 Month Warranty CE marked. Part Number: V84341309-R. Pump Model: V84341309. Price New: $20,950.00.
Asking Price: $16,500.00

Item # VF294 Vacuum Annealing Furnace.
Manufactured by Thermionics this is a custom designed vacuum annealing furnace designed to heat treat wire up to 210 cm long. The vacuum chamber has an 8" Dia. X 90" effective working length. The operating temperature was developed for a maximum operating temp of 1200° F, The vacuum nominal level (continuous) duty was developed as 1 X 10-6 Torr. Maximum vacuum level to operate in continuous duty is 5 X 10-8 Torr. The unit was designed to use N2 gas. The unit was an R & D unit that was built in 1998, but has had little to no use. Excellent condition. New this was $90,000 USD.
Asking Price: $29,000.00 USD.

Item # VF289 Ipsen Vacuum Temper Furnace.
Built in 1981. Working dimensions of 280 mm high X 420 mm wide X 590 mm deep (11" X 16.5" X 23.2"). Maximum load 100kg (220 pounds). Minimum operating temperature 150C, maximum operating temperature 700C. Input power 94 KVA, heating 71Kw, 575 volts, 60Hz. Type K T/C's, Honeywell controls. Vacuum contact point 1.0 X 10-1 mbar, operating pressure 1000 mbar. Maximum vacuum level 5.0 X 10-2 mbar. Circulated nitrogen atmosphere gas. Elements Cr-Ni Steel. Stokes model 149H vacuum pump. SS hot zone. Class 3 furnace with a temperature uniformity of +- 8C. Used in an aerospace heat treat facility until it was replaced with a new furnace. Complete although missing the temperature recorder. Included are a manual loader and 3 baskets. Excellent condition. **Asking Price: $59, 500 USD.**




Item # VF285 20" Right Angle Poppet Valves (4 available). 20" Right Angle Poppet Valves to mate to Varian HS-20 Diffusion Pumps. Removed from service in good operational condition by a company converting to cryo pumps. Offered in As-Is or Standard Rebuilt As-Is Price: $ 1,800.00 (working, but no warranty, 30 Day Return). **Std. Rebuilt Price: $ 3,150.00 (1 year warranty). V**alves are awaiting rebuild now. (2-3 weeks required ARO). Photo shows another representative RAV prior to rebuild.

Item # VF282 AVS Vacuum Debinding/Sintering Furnace.
This is a horizontal graphite vacuum debinding sintering furnace for steel MIM parts completely rebuilt from top to bottom by AVS in 2010. Working volume – approximately 18 cubic feet, 28" wide x 26" high x 42" long graphite retort, 1500# capacity. Temperature - rated for continuous operation at 1400°C ±10°C in vacuum, 1450°C burn-out. 50µ ultimate vacuum; leak rate <10µ / hour, CEDORT (Clean, Empty, Dry, Outgassed, Room Temperature). De-bind system - nitrogen or argon sweep gas, 0 - 100 torr differential pressure controlled by PLC and automatic I-to-P modulating vacuum valve, binder trap, condenser assembly; options available for hydrogen gas and burn-off. De-bind lines heated to keep vapor from condensing in vacuum lines. Fast cooling with circulation fan and automatic gas re-circulation ports. Control system - AVS ACE™ control/data acquisition system. Estimated cold-to-cold cycle time of 16 to 20 hours with AVS "Fast Cool" option. Horizontal jacketed chamber - 60" dia. x 80" long, nominal dimensions, flanged, on legs. SA-516-70 mild steel construction on water jackets and door + body flanges. Stainless Steel inner jacket & dished head plus all power ports Front-loading chamber with 2 doors - both doors on adjustable hinges, with buna o-rings, manual clamps, for operation from 50 millitorr vacuum to 3 psig positive pressure; rear door opens for service. Ports - rough line on side of chamber, delube line from bottom, fan housing flange on rear door Additional PORTS added to the system to accommodate future system modifications for processing 'sinter-hard' P/M materials – a total of up to 7 additional ports ranging from 18" in diameter down to 1" in diameter will be added. Further details available upon request. Currently installed and in excellent condition. **Asking Price: $209,000 USD.**




Item # VF281 Surface Combustion Vacuum Furnace.
Model: IHVP-364830-2, S/N: VC-42202-1. 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-WAX FURNACE.
Horizontal sintering furnace with wax condenser 1470°C operating temperature. Water cooled 304 stainless steel chamber with mild steel flanges. Graphite hot zone - 24" wide x 18" high x 36" deep, with hearth rails. Graphite retort - 4 to 5 cubic foot work space, shelves, graphite rollers, de-wax tube and -cooling. 5 HP recirculation cooling fan system - cooling flaps in insulation and retort. Wax condenser assembly with hot water circulation system and removable wax receiver pot. Power supply - transformer-type, low voltage secondary, nominal 250 kW. Vacuum pumps - Stokes 212-H, 150 cfm rough pump, Roots 615, 1600 cfm booster. Dynamic partial pressure gas system. Unit can be seen in operation and is available for immediate delivery.
Asking Price: $299,000 USD.



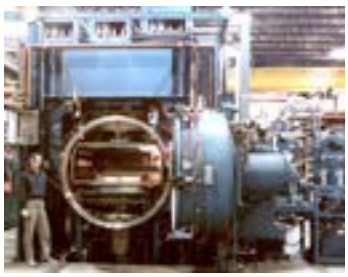

Item #VF267 SEMI-CONTINUOUS Titanium Diffusion Bonding Hot Press.
System consists of; Load Chamber. Rated for 2720 kg load Moly Pin walking system rated for 2720 kg load 44" w x 54" d x 6.5" high product size in semi continuous mode Stokes 612/300 pump/blower Mounted on roll out frame for easy maintenance

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. **As is $890,000.00 cash** and carry with support available from the original manufacturer at a reduced rate, or reconfigured to match your specific requirement at a price TBD. Immediate delivery.




Item #VF266 Kinney 75 CFM Vacuum Pump:
Warranty Rebuilt Kinney Model KTC-75, Part No. 804982-D, S/N 1105-Y 7710-5 mechanical vacuum pump. 12 Month warranty on rebuild. Will be repainted at rebuilder's shop. Running without problems when removed from service.
Asking Price: $ 5,700 F.O.B. West Coast U.S.



Item #VF265 Stokes 149H-11 80 CFM Vacuum Pump:
Rebuilt Stokes Model 149H-11, Lot# CD-81004 Mechanical Vacuum Pump, Rebuilt by Evey Vacuum in 2002 and stored in heated, dry area since then. **Asking Price: $ 5,500.00 USD with 30 Day Right of Return if not satisfied.**



Item # VF255 Roots Gas Blower:
Rebuilt (per owner), Roots Model 2510J Whispair Max gas blower, 372 CFM, Roots I.D. 847-485-20, S/N 76 54846 with 5 H.P. Motor mounted on skid. Location: Pacific North-western U.S.
Asking Price: $3,500.00 USD. 30 Day Right of Return, if unhappy.

Item # VF254 MD Blower, 350 CFM:
Rebuilt (per owner) M.D. Pneumatics 350 CFM gas blower, Model 11-3210, S/N 1735R A23, on skid but needs motor. Location: Pacific North-western U.S. **Asking Price: $3,000.00 USD. 30 Day Right of Return, if unhappy.**

Item #VF243 35" Diffusion Pump:
CVC Model PMC-32C, 35" Diffusion Pumps (Today this is the Varian HS-35. Varian purchased CVC rights to this pump.) Rebuilt condition with a 12 Month warranty. 35" Throat Diameter. Bolt Circle is approx. 38-3/4" with 14 Holes on approx. 8-9/16" Centers. Flange O.D. is 41-3/4". O-Ring Center Diameter is 36-1/8". Approx. 72-3/4" Overall Height (79" on 48" x 48" shipping pallet). Note: Mating 35" Cryo-Baffle is also available for improved low-range vacuum and elimination of backstreaming (See Item# 3161 Below). 6" Foreline with approx. 9-1/2" Bolt Circle with 8 Holes on approx. 3-5/8" Centers. 1/4" dia. O-ring is approx. 8-7/8" diameter to center. Shipping Wt. with pallet approx. 2050 lb. Price in Warranty Rebuilt Condition, Painted: $ 12,250.00 (with existing working elements. Add $6,000 if you want brand new elements.) Location: Coeur d'Alene, Idaho 83814



Item #VF242 " 35" Diffusion Pump:
CVC Model PMC-32C, 35" Diffusion Pumps (Today this is the Varian HS-35. Varian purchased CVC rights to this pump.) Can be purchased either in As-Is condition or in Rebuilt condition with a warranty. 35" Throat Diameter. Bolt Circle is approx. 38-3/4" with 14 Holes on approx. 8-9/16" Centers. Flange O.D. is 41-3/4". O-Ring Center Diameter is 36-1/8". Approx. 72-3/4" Overall Height (79" on 48" x 48" shipping pallet). Note: Mating 35" Cryo-Baffle is also available for improved low-range vacuum and elimination of backstreaming (See Item# 3161 Below). 6" Foreline with approx. 9-1/2" Bolt Circle with 8 Holes on approx. 3-5/8" Centers. 1/4" dia. O-ring is approx. 8-7/8" diameter to center. Shipping Wt. with pallet approx. 2050 lb. **Price in As-Is Condition: $ 6,400.00 USD** Price in Warranty Rebuilt Condition, Painted: $ 12,250.00 (with existing working elements. Add $4,500 if you want brand new elements.)




NEW EQUIPMENT

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

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

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

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

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

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

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 trays[1]**
- **Surface Combustion Allcase Tray**
- **UBQ Furnace Tray**
- **Site-specific custom trays**
- **Based on existing castings**
- **No setup or pattern fees[2]**
- **Industrial alloy grades available**
- **HU, HT, Super NA22H, …**
- **Please send your enquiries to:**

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

[1]While supplies last
[2]Applies to standard design trays only. Some restrictions apply.

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.

BUSINESS OPPORTUNITIES

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

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

EMPLOYMENT OPPORTUNITIES

OUTSIDE SALES REPRESENTATIVE

Nature and Scope

Premier Thermal Solutions, LLC (PTS), the parent company of Atmosphere Annealing and NitroSteel, is a private-equity owned, manufacturing company providing metal heat-treating services and related products primarily to the automotive, heavy truck, industrial, energy and agriculture industries.

The company is seeking Outside Sales Representatives (IL and MI) that will develop new business by building relationships with existing customers and canvassing a territory in search of new customers. The ideal candidate will have a working knowledge of our service offerings and the related markets, have a hunter's mentality, high-energy, highly organized, motivated, self-starter who can thrive in a dynamic, entrepreneurial environment.

Principal Accountabilities

Reports to; Director, Premier Thermal Solutions with dotted line to Plant General Manager
Meet with qualified prospects and customers at least 60 percent of the time.
Maintain high level of industry knowledge and remain up to date on industry trends and issues.
Build relationships with top management, plant, metallurgical, and purchasing personnel at key accounts to perpetuate confidence and trust in the company.

Collaborate with company leadership on new opportunities, pricing strategies and industry trends.
Coordinate the response to RFQ's by providing all information required to complete the quote to Inside Sales, delivering the quote to the customer and then following up on the quote.
Use data available from ERP system to develop and analyze customer sales trends and budget deviations.
Operate with a sense of urgency and be responsive and proactive to customer or prospective customers
Candidate Requirements

Bachelor's degree plus at least 5 years of relevant experience, ideally selling industrial products and/or services. A working knowledge of materials science is a plus.
Existing relationships with OEM's and Tier I suppliers in the automotive, heavy truck, industrial, energy and agriculture industries is preferred.
Comfortable prospecting, qualifying, presenting and closing opportunities in a highly competitive market.
Ability to effectively use multiple channels including internet, cold calls and referrals.
Must be proficient at data analysis and related tools such as Excel or CRM software.
Compensation

Base salary plus opportunity for substantial commission earnings.
Immediately eligible for healthcare plan (medical, dental and vision)
401(k) with company match
Life, STD, LTD
Tuition reimbursement
Auto reimbursement program
Send Resume to: Steve Green, SGreen@ZCap.net or call 646-787-2436
STRAIGHTENER / QUALITY INSPECTOR / FURNACE OPERATOR

Accurate Steel Treating in Southgate, CA has a number of open positions including;

Straightener; Straighten customer parts to ensure compliance to specification. A high school diploma or equivalent is required as well as a minimum of 1 year experience in the heat treating industry. Must have a basic knowledge of heat treating and testing.

Quality Assurance Inspector; Inspect customer heat treated parts to ensure compliance to specification. A high school diploma or equivalent is required as well as a minimum of 1 year experience in the heat treating industry along with the ability to obtain and maintain a forklift operator specification. Must have a basic knowledge of heat treating and testing.

Furnace Operator; Prepare parts for heat treatment, load and unload furnaces. A high school diploma or equivalent is required as well as a minimum of 1 year experience in the heat treating industry along with the ability to obtain and maintain a forklift operator specification. Must have a basic knowledge of heat treating and testing.

Interested applicants should send their resume to jimmyh@accuratesteeltreating.com

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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

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

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; heat-treatquality@yahoo.com.

METALLURGIST / MATERIALS ENGINEER

Kowalski Heat Treating Company – located in Cleveland, Ohio has an immediate opening for a Metallurgist / Materials Engineer. This individual is responsible for management of all areas of metallurgical processing / process technology. Duties include ensuring that every process is optimized and customer metallurgical development requirements are met with minimal supervision to meet established corporate objectives.

Essential Functions

Ensures customers' technical needs are met with minimum turnaround time and high degree of quality working closely with KHT senior staff as needed.
Acts as liaison between KHT and key customers executive/department managers with the development of metallurgical processing / material selection.
Identifies, recommends and implements metallurgical changes to improve productivity and reduce cost and rework, monitor scrap and develop long-term performance data for all customers and process recipes, achieves optimum metallurgical process performance with least amount of overhead.
Responsible for the overall evaluation- implementation- validation and approval of various standards as needed for KHT to achieve its goals and objectives.(e.g., NADCAP, AS-9100 ,CQI-9 etc.)
Required Education and Experience

BS in Metallurgy / Materials Science.

5+ years of experience in a heat treating environment.
Experience developing heat treating parameters, processes and principles is preferred.
Experience working with a multi-shift environment is preferred.
Please respond to HR@khtheat.com

HEAT TREATING MANAGER/METALLURGIST/MATERIALS ENGINEER WANTED

Summary: NY based Aerospace components manufacturer is seeking an experienced Aerospace Heat Treating Engineer/Manager. This is a new position for the company that is starting an in□house heat treating operation. Qualifications required are a degree in Metallurgy or Material Science and five□plus years' experience in heat treating aerospace alloys. Must be proficient in Pyrometry procedures, have a working knowledge of ASM –H□6875 AMS 2959 1, 2, 3, 4, 5, 8A, 11 and be able to procure and manage a metallurgical lab using the appropriate ASTM procedures. Please respond to hr@precisiongearinc.com
SERVICE TECHNICIAN WANTED

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

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

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

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SALES ENGINEERS/REPRESENTATIVES WANTED

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

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

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PROCESS DEVELOPER WANTED

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

Key Competencies:

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

INDIVIDUALS SEEKING EMPLOYMENT

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

ITEM # SE2 SEEKING EMPLOYMENT - DIRECT HIRE FOR SALES

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

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ITEM # SE1 SEEKING EMPLOYMENT

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

IN PARTING

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

Gord Montgomery,
W.G. Montgomery Limited

Phone: 905 271-0033
Fax: 905 271-9324
Email: **gord@themonty.com**