

**HEAT TREAT NEWSLETTER**  
*Everything to do with heat treating*



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

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# INTRODUCTION

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This, the October 2018 issue of “***The Monty***” is chock full of advertisements from industry suppliers, everyone of which is telling you where they can be found at the upcoming ***FNA*** show in Indianapolis, Indiana, USA October 9<sup>th</sup> and 10<sup>th</sup> and the ***HK 2018*** heat treat exhibition in Cologne, Germany the following week. All we can say is we look forward to seeing you at these great events. In the mean time please enjoy the most up to date news and trends in the heat treating industry.

Best regards,

Gord, Jordan and Dale Montgomery



INTRODUCING OUR NEW CEO / PRESIDENT

## **BEN CRAWFORD**

The Contour Board of Directors is pleased to announce the appointment of Ben Crawford to the position of CEO/President effective immediately.

For over twenty-five years, Ben Crawford has provided strong leadership in the heat treat industry and has been a dominant force in advancing innovation and growth for the companies at which he has worked.

The entire Contour Board of Directors feels fortunate and couldn't be more excited to welcome Ben's expertise, leadership, and vision to Contour.



888.867.2184  [contourhardening.com](http://contourhardening.com)



# ONLY OUR NAME HAS CHANGED

For nearly four decades, Contour Hardening has been recognized as a global leader in the induction hardening industry. That hasn't changed. The only thing that has changed is our name.


We have chosen to rebrand as Contour because our clients rely on us for more than just our metal hardening capabilities.

Our new vision and mission are to utilize our comprehensive in-house engineering and metallurgical resources to provide our customers with the best custom-engineered thermal hardening solutions found anywhere on the planet.

In the next few months, Contour plans to make substantial financial investments in people, equipment, and services to ensure we continue to be a global leader in the heat treat industry.

Our commitment to our customers and partners remains our highest priority.



888.867.2184  [contourhardening.com](http://contourhardening.com)

# HEAT TREAT NEWS

## The Website of Choice for Captive and Commercial Heat Treaters Since 1999

### Monday Morning Briefing

We start off with an interview with **Mr. Ben Crawford**, a very well known individual in the North American heat treating industry and the new President of **Contour Hardening** (Please click here: [Ben Crawford Interview](https://www.themonty.com/Ben-Crawford-Interview)) We would like to add that if you look at our home page <https://www.themonty.com/> you will see phase I of our new and improved website. Over the course of the next month we will be changing the entire website to add new capabilities, better graphics, new features and more advertising options.

Last week **ASM** hosted their second Heat Treat Conference in **Querétaro, Mexico** and we have been told it was a success with roughly 200 attendees. The general consensus would appear to be that the show is small but growing and has a very bright future. We have these photos for you.



Last week we told you how **Jason Orosz** was making a move to **Nitrex Metal Inc.** (if you look



for last week post you will see why we would consider Jason to be “newsworthy”). It turns out that his title will be Vice President of Heat Treating. At commercial heat treater **Paulo** we see that **Scott Herzing** has been promoted which is well deserved in our opinion; “Scott Herzing, a 20 year Paulo veteran, was previously the Manager of Project Engineering. In that

role Scott led dozens of plant expansion efforts, equipment installations and start-ups, and the construction of the greenfield facility in Mexico. He has also been instrumental in developing and implementing our state-of-the-art control systems. Scott will continue to lead the Project Engineering, Automation Engineering, and Fabrication Shop, and will now also lead the Metallurgy Department. Scott commented, “I look forward to leading the Engineering Department to meet Paulo’s strategic goals and to continue to support our plants with world class systems.” Former Vice President of Engineering, Al Baethke, will remain with Paulo and assume a new position as Director of Process Engineering. In this role Al will be able to devote more time to process improvement and continuous improvement efforts across Paulo. Al is a 27 year Paulo veteran and his experience will play a vital role in meeting our strategic goals for continuous improvement.”

**Komatsu** will be building a brand new captive heat treat as part of a brand new headquarters and manufacturing facility in Milwaukee, Wisconsin, USA. There is a lot of verbiage in this press release that you can ignore-the only thing we care about is the mention of an advanced heat treat shop to be built; “Komatsu Mining Corp. announced plans Thursday to build a \$285 million state-of-the-art headquarters and manufacturing campus in Milwaukee. Komatsu intends to build a new corporate headquarters and manufacturing and training facilities at the former Solvay Coke site along the Milwaukee riverfront on Greenfield Avenue. The 54-acre site, to be called the South Harbor Campus, is near the location of the company’s original machine shop off South First Street. The planned campus would include about 170,000 square feet of office space, a 20,000-square-foot museum and training building, and 410,000 square feet of manufacturing space, consolidating two of Komatsu’s current Milwaukee-area facilities into a central location. The project is expected to be completed in 2022. Plans call for advanced machine, heat treat and fabrication shops; state-of-the-art technology, research and development, and robotics



*labs; an office complex and data solutions center; a global training and conference center; and a City of Milwaukee public riverwalk adjacent to the campus. Komatsu is the world's second-largest builder of mining equipment after Caterpillar."*

Remember back in July there was news of a **US Military Helicopter Crashing** in South Korea with 5 passengers killed? Turns out the cause was faulty heat treating; *"A team of civilian, government and military experts has tentatively concluded that defects in the rotor mast caused the July crash of a marine chopper that killed five troops, a source said Monday. The team reportedly explained the interim results of its investigation to the families of the victims on Sunday. The military authorities had planned to explain the results to the media on Monday, but delayed the plan to Friday. The MUH-1 Marineon, the Marine variant of the KUH-1 Surion helicopter, crashed shortly after a maintenance checkup at a military airport in the southeastern city of Pohang on July 17. It was seen falling after its rotor blades became separated from the fuselage just seconds after takeoff. Investigators apparently believe that cracks were created in the rotor mast due to a flawed heat treatment process by a subcontractor."* Last week we had a note about a US commercial heat treater who suggested that they were the only commercial shop in the US **American Petroleum Institute (API)** approved. As it turns out another commercial heat treater in the US popped up to say that they also are API approved. **Permian Heat Treaters** in Odessa, Texas also has this certification <http://www.permianht.com/>

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## Acquisition in The Commercial Heat Treating Industry

Regular readers of "The Monty" will know that we pride ourselves on having the most up to date news and rumors in the worldwide heat treating industry so here is a fascinating rumor from the commercial heat treating industry in North America which we will (partially) share with you. Cast your eyes upon our list of the largest commercial <https://www.themonty.com/largest-commercial-heat-treaters-in-north-america-august-2018/> and you will see our list of the 13 largest commercial heat treaters on the North American continent based upon annual sales. This rumor tells us that one of the companies on this list just acquired another one of the 13 largest on the continent with an official announcement to come this Monday. "The Monty" will be there to give you the complete story which we believe to be true-although we are hedging our bets as you can tell. **September 28, 2018**

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**PhoenixTM**  
Phoenix Temperature Measurement

## Temperature Profiling and Surveying Solutions

### Thru-Process Monitoring solutions for

- Continuous Carburizing with Oil Quench
- LP Carburizing with 20 bar N<sub>2</sub> Quench
- Aluminium Brazing (Cab & Vacuum)
- Aluminium Solution Reheat (T5 & T6)
- Furnace Survey (TUS)
- Homogenizing, Ageing and many more

✓ Monitor  
✓ Control  
✓ Improve  
✓ Certify

**FNA 2018**  
**Booth 525**

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### Comprehensive

- Passes through furnace with the product.
- Complete product temperature profile
- Measurement at up to 20 points
- Live 2 way radio communication option



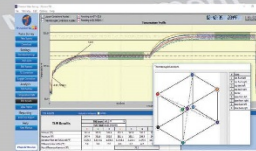
### Safe

No Trailing thermocouples so quick, safe, system installation without production delays.  
Even with an Oil Quench!



### Easy

Fully compliant AMS2750 or CQI-9  
TUS reports with only a single Click!



*...where experience counts!*

## Cleveland State University, Distinguished Engineering Alumni of the year, 2018

*"John Hubbard, P.E. has been awarded the Distinguished Alumni of the year award from the CSU Washkewicz College of Engineering. Hubbard earned a Bachelors of Metallurgical Engineering and MBA from CSU and has spent his career in the Thermal Processing industry. He sold his company (Hinderliter Heat Treat) to Bodycote, plc (LSE : BOY) and then assisted them in growing into the largest thermal processing company in the world serving as President of North American businesses then as CEO of the global business. After retiring in 2009 he enjoyed riding motorcycles in many parts of the world until 2016 when he joined with Calvert Street to forming Thermal Process Holdings to create a new North American heat treating group. Hubbard, a Registered Professional Engineer has served as past President of Metal Treating Institute and past President of ASM Heat Treat Society. Hubbard has received the Bodeen Heat Treating Achievement Award from ASM Heat Treating Society, Hephaestus Award from the Nitriding Symposium and Distinguished Alumni from Claymont High School (Uhrichsville Ohio).*

**ABOUT THERMAL PROCESS HOLDINGS, INC.:** The TPH team has a stated goal to build a diversified, professionally-managed business generating over \$100 million of revenue. TPH currently owns and operates two businesses: Diamond Heat Treat, a Rockford, IL-based heat treating company; and Certified Heat Treating, a Springfield, OH-based heat treating company.

**ABOUT CALVERT STREET:** 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. TPH builds upon Calvert Street's experience in other high-value add industrial sectors, including testing and inspection and precision machining."

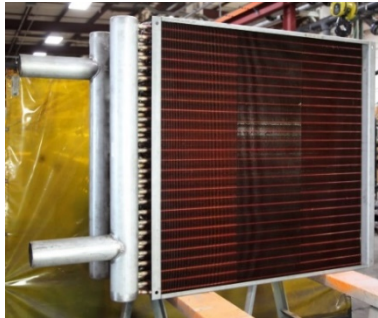
Since 1923, the Washkewicz (Fenn) College of Engineering has provided a tradition of high quality undergraduate and graduate education in engineering and engineering technology. It provides a world class, engaged engineering education, graduating Ready-to-go Engineers prepared to solve real world engineering problems. Cleveland State University is a public research institution that provides a dynamic setting for Engage Learning. With 17,000-plus students, ten colleges and schools and more than 175 academic programs, CSU was again chosen for 2018 as one of America's best universities by U.S. News & World Report. Find more information at [www.csuohio.edu](http://www.csuohio.edu). September 28, 2018



## **Solar Atmospheres Develops Vacuum Furnace Heat Exchanger Cleaning Process**

"In the operation of vacuum furnaces the quench gas heat exchanger fins can become clogged with various debris and dirt that is very difficult to completely clean with standard pressure washing and other conventional methods. The clogged heat exchanger greatly impedes quench gas flow, resulting in reduced work cooling rates. Our special process involves 12 hour soak submerged in a suitable tub using a water base cleaning agent. Recirculated forced water jets wash out the accumulated dirt from deep inside the heat exchanger. It is then pressure washed and blown dry with nitrogen gas. The heat exchanger is cleaned to an as new condition and

then returned to the user. For more information on the cleaning process, please contact Bob Sandora at [bob@vacpumpservices.com](mailto:bob@vacpumpservices.com) or visit [www.vacpumpservices.com](http://www.vacpumpservices.com), an affiliate of Solar Atmospheres. For additional information about Solar Atmospheres, visit [www.solaratm.com](http://www.solaratm.com), or call 1-855-934-3284." **September 28, 2018**



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## AFC-HOLCROFT ADDS DANIEL HILL TO SALES TEAM

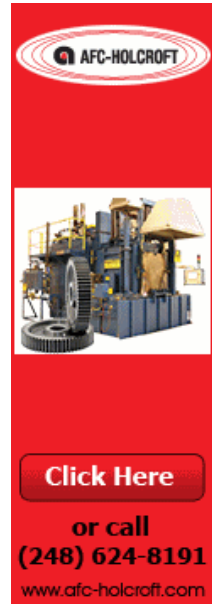
*"AFC-Holcroft is pleased to announce the addition of Daniel Hill as the newest member of their sales team. Hill will be based out of the company's headquarters in Wixom, Michigan, focusing on key account management as well as new lead generation. Hill will report to Tracy Dougherty, Sales Manager at AFC-Holcroft. Hill earned his B.S. degree in Mechanical Engineering from University of Michigan and his M.S. in Engineering Management from the University of Michigan. He is also a licensed Professional Engineer (Mechanical Engineering) through the State of Michigan.*

*Hill spent 12 years at Detroit Stoker Company in various roles, which included New Contracts Proposal Engineer /R&D Engineer, Aftermarket Proposal Engineer/ Project Engineer, Manager of Engineering and Director of Engineering & Quality Assurance. Most recently, Hill held the position of Engineering Manager at Fives Cinetic Corporation. "We believe our customers will benefit from Dan's experience and strong technical background", said Tracy Dougherty, Sales Manager, "and we're excited to have him on board as part of the AFC-Holcroft team".*



**About AFC-Holcroft:** Founded in 1916, AFC-Holcroft, is one of the US market leaders in the production of industrial furnace equipment for ferrous and non-ferrous metals. The company manufactures turn-key heat treating systems for applications including commercial heat treating, bearings, automotive, aerospace, mining, aluminum heat treatment, gear manufacturing, fastener manufacturing, and alternative energy industries.

**About AICHELIN Holding:** The AICHELIN Group, as part of the BERNDORF Group of companies, is a manufacturer of industrial furnace equipment for different industry segments and provider of after-sale services. AICHELIN Group also operates in the field of induction heating and in the manufacturing of industrial gas burner systems. The group's production sites are located in Austria, Germany, France, Slovenia, the US, China, and India. Altogether, the AICHELIN Group has 1,100 employees worldwide and ranges among the largest producers of heat treatment plants globally. For more information, contact [media@afc-holcroft.com](mailto:media@afc-holcroft.com). September 26, 2018



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## Used Equipment

"The Monty" has one of the most complete lists of **Used Heat Treating Furnaces** in North America, a list which is updated **daily**. Our most recent additions are mentioned below. If you don't see what you are looking for please let us know at [jordan@themonty.com](mailto:jordan@themonty.com) or 905-271-0033. September 27, 2018

**Item # VF343** Bottom Loading Vacuum Furnace

**Item # B460** Super 30 Batch IQ \$45,000

**Item # B459** Surface Batch IQ 24" x 36" x 20" \$25,000

**Item # T354** Surface "Super 30" Temper \$15,000

**Item # T353** Surface "Super 30" Temper \$22,500

**Item # M423** Dunk/Spray Washer 36" X 72" X 36" \$29,000

**Item # T352** Pyradia Oven 48" X 48" X 48" \$39,000

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## ThermTech Expansion

Tuesday of this week we had a press release from commercial heat treater ThermTech of Waukesha, WI about a very large expansion they are going through. This press release adds a few more details;

*“Commercial heat-treating business ThermTech broke ground on a 13,000-square-foot expansion of its Waukesha facilities on Friday. The purchase of a large heat-treating furnace at a reduced price because of a business closing in Indiana prompted the expansion. “We had to make a quick decision on the purchase,” a project description submitted to the city of Waukesha says. “We are incredibly busy, and need the capacity. That said, we also realized that the equipment would not fit in any of our current locations.”*

*ThermTech has facilities at 301 and 305 Travis Lane with the addition going on the former. The company also owns a facility at 1511 Pearl St. in Waukesha and leases a number of facilities around its headquarters. The expansion actually utilizes the same footprint as a 2010 expansion plan that would have used the space for a corporate office center. The city approved the plans at the time, but the company ultimately did not move forward because of the recession.” September 27, 2018*



## Names in The News

**Mr. John Schweir** for the past couple of months has been owner of **Ultimate Vacuum Services** in the Hartford, CT, USA area. We are assuming that Ultimate Vacuum offers servicing of vacuum furnaces based on the fact that John was with **Vesco-**

**McLaughlin Services** (a very well known vacuum company in the US Northeast) and **Bodycote** as a Maintenance Manager.

New Management at National Heat Treat. Commercial heat treat **National Heat Treat** in Houston, Texas, USA has relatively new management. **Mr. Michael Pendley** is now Vice President of Operations and General Manager-Mike has worked at companies such as Baker Hughes in the past and was an instructor for ASM in a past life. Also **Mr. Michael Walters** is now Quality Assurance Manager, Michael's past experience includes FMC Corp., and Aker Solutions. National is a "full service" commercial shop which offers vacuum, batch IQ and Nitriding. *September 26, 2018*

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## General Electric India Installs Ipsen Vacuum Furnace

As we speak General Electric in India is installing this very impressive Ipsen bottom loading, vacuum brazing furnace. It is impressive and Ipsen quality is always top notch but the color? This is the first time we have ever seen a bright green vacuum furnace although Hansen Balk in Grand Rapids, Michigan might have one since they paint all of their vacuums different colors. We are sure the color was selected by GE themselves. *September 26, 2018*





# FNA SHOW SPECIAL

**Save \$1,000's for rugged, fast and precise vacuum furnace leak testing.  
Come see us at booth 523.**

**Save now on a complete leak detection package for fast, precise, reliable vacuum furnace leak testing.**

The Pfeiffer Vacuum ASM 340 performs helium or hydrogen leak detection in vacuum and sniffer modes. It detects leaks to  $5 \times 10^{-12}$  mbar l/s in vacuum mode and  $5 \times 10^{-9}$  mbar l/s in sniffing mode.

**Comprehensive package includes:**

- Leak detector – ASM 340
- 2 wheel cart
- Helium spray gun
- Wireless remote

**ASM 340 advantages:**

- High helium pumping speeds (2.5 l/s) for faster detection and clean up
- High crossover pressures – for a faster time to test mode
- Helium or hydrogen detection
- Auto calibration and auto ranging capabilities

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Available only in North America. Promotion ends December 31, 2018.

## Business Opportunities

Please take a look at our most recent employment offerings. If you see anything you like don't hesitate to get in touch with us at [jordan@themonty.com](mailto:jordan@themonty.com) or 905-271-0033. *September 26, 2018*

**Item # 0354** Metallurgist Wanted

**Item # 0353** Controls Engineer Wanted

**Item # 0352** Sales Positions Available

**Item # 0351** Metallurgical Engineer Wanted

**Item # SE002** Metallurgical Engineer Looking For A Job



## Heroux Devtek Installs a SECO/VACUUM Brazing Furnace

Landing Gear manufacturer Heroux Devtek recently installed a SECO /VACUUM aluminum brazing furnace at their location in Toronto, Ontario, Canada. Apparently this is the first Nadcap approved vacuum aluminum brazing furnace in Canada. SECO had this YouTube video filmed which is rather interesting to watch. *September 26, 2018*

[https://www.youtube.com/watch?time\\_continue=12&v=aJdVDnnYajY](https://www.youtube.com/watch?time_continue=12&v=aJdVDnnYajY)

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## ThermTech Announces Major Expansion

*"ThermTech of Waukesha announces expansion plans to better serve its customers. The company will add 11,000 square feet of production space to its facility at 301 Travis Lane in Waukesha, WI along with two new major equipment lines.*

- A large AFC Holcroft IQ batch furnace line with a working zone is 56" W x 72" L x 36" H. This furnace is capable of quenching 9000lbs.*
- A Gasbarre/Becker large double zone hardening furnace where each zone is 54" W X 54" L X 54" H along with two matching tempering furnaces.*

*The addition of these two furnaces will enable us to shorten lead times and reduce testing costs for carburizing and forging customers respectively. ThermTech has also made additional*



improvements in blast capabilities with the installation of a large roto-blast cell installation from Pangborn.

With the new expansion, ThermTech will now occupy 75,000 square feet at its Travis Lane campus, with an additional 85,000 square feet at its Pearl Street campus. ThermTech has engaged Keller Builders to complete the project by mid-December. The project is being funded by Westbury Bank, Joe Pieper Sr. VP Commercial Lending, and the SBA through WBD, Steve Kohl, Vice President. **Steve Wiberg** President, Quote: "ThermTech is adding floor space and capacity. The new large AFC equipment will allow ThermTech to decrease lead times and decrease customer testing costs by increasing batch size. While not unique, it is one of the largest batch IQ furnaces in the Midwest." **Mary Wiberg Springer**, Vice President, Quote: "ThermTech strives to remain responsive to the needs of our customers, and this expansion is one example of that. The ingenuity of the American manufacturing sector has been unleashed! Especially in the pipeline, fracking, mining and construction markets. With the huge influx of business that we have experienced in the last 600 days, we are excited about the new capacity and capabilities this IQ line will allow. We look forward to continuing to serve our customers at the highest level, improving turn around and maintaining high quality." The new line will result in several additional jobs. ThermTech is firmly rooted in the Waukesha Community, founded by Charles E Wiberg in 1982. Currently owned and operated by brother and sister, Steve Wiberg, President and Mary Wiberg Springer, Vice President. In 2017, they also purchased the building at 1511 Pearl Street. Currently they employ 140 people on the two campuses. ThermTech believes in providing the best pay and benefits possible in their industry. They have also established an onsite medical clinic, including free integrated medical care, chiropractic care, and massage therapy. They are also currently engaged in improving their safety culture hoping to achieve the OSHA SHARP certification by 2019.

**About ThermTech:** Since 1982, ThermTech has been a recognized leader in providing quality heat treating services. Serving tooling, defense, oil & gas, mining, construction, medical, and general metal manufacturing companies, ThermTech's highly skilled staff, of experienced professionals, embracing servant leadership, has been recognized as being able to meet the rigorous quality standards required by our major customers. ThermTech is certified for ISO 9001:2015 and AS9100D in both metal heat treat and metal finishing. They are the only



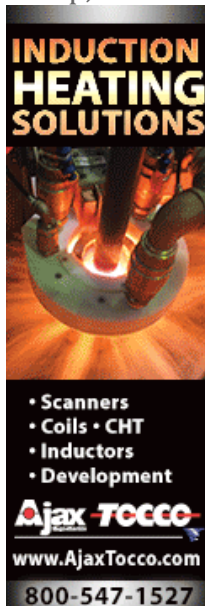
commercial heat treat company also certified by the American Petroleum Institute (API) for heat treating services. The company has an in-house laboratory and offers a full menu of testing and metallurgical consultation. Lastly, ThermTech utilizes the Bluestreak™ Manufacturing Execution and Quality Management System software designed exclusively for the metal finishing industry. [www.go-bluestreak.com](http://www.go-bluestreak.com)” September 25, 2018



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## Monday Morning Briefing

In Oxford, MA, USA machine shop **Technetics** is closing their facility and auctioning off their equipment with the auction being held October 9. Included in the offering is an “**Abar HR 50 Vacuum Furnace**, 36W x 30H x 48D Load, Atmospheric Quench 30 HP Fan, 20” Diffusion Pump, Stokes 412 Mechanical Pump, Graphite Hot Zone Insulation w/Moly Elements,

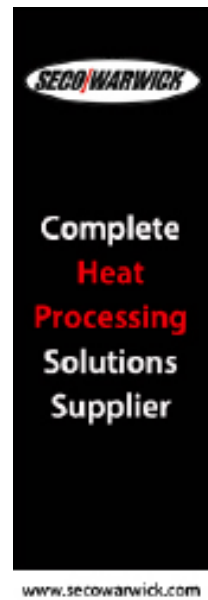


Furnace Partially Rebuilt in 2009, Touch Screen Controls w/PLC, Wiring, Plumbing, Valves and Hot Zone”. It would appear to be in reasonable shape-will it sell? In a heartbeat. A used Abar, Abar Ipen or Ipsen vacuum furnace will always sell pretty well no matter what the condition-it is just a matter of price about how quickly it will sell. It’s interesting how many people get into the heat treating industry because their father or grandfather were heat treaters-such is the case with **Jason Orosz**. His father **Dave Orosz** worked with **H & S Heat Treating** in Port Robinson, Ontario, Canada for many years and also with **Nitrex Metal Technologies** in Burlington, Ontario (we should add that Dave had an ownership stake in Nitrex). Jason started working with Nitrex before it was acquired by commercial heat treater **Bodycote** in 2016.

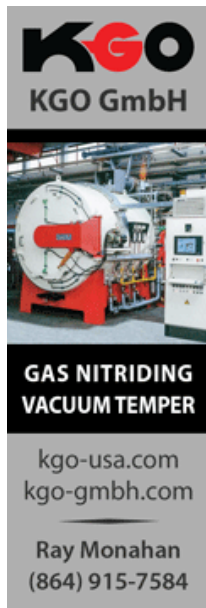
His position at Bodycote involved both the Burlington plant as well as responsibilities with a number of other facilities both in Canada and the US. Just last week

Jason made a bit of a career change and joined Nitrex based in Montreal. Jason is a good man who knows his stuff and we have no doubt but that his career in the industry will continue to prosper.

Our friends at **Texas Heat Treating** in the USA sent us this press release; *"Texas Heat Treating is proud to announce that it has received certification of its Quality Management System to the AS9100D standard. The AS9100D standard includes all requirements of ISO 9001:2015, and adds specific aerospace industry requirements. The scope of the certification is "Heat Treating, Mechanical and Non-Destructive Testing", and encompasses both the Round Rock and Fort Worth facilities."* Furnace builder **SECO/WARWICK** just held their 21<sup>st</sup> seminar last week, a seminar which took place at their facilities in Świebodzin, Poland an event which we understand was a real success. We have a couple of photos of the event to show you. ***"The 21st SECO/WARWICK seminar is behind us. The three-day event included: 1 Open Day, 2 days of seminars, 20 lectures, 4 thematic blocks, 150 specialists – both scientists and businessmen – these are the numbers summarizing the 21st seminar organized by SECO/WARWICK which has come to an end.*** This time, the organizers and the speakers focused on the optimization, transparency and automation of the heat treatment of metals. These are the issues that, in the coming years, will play the most important role in the industry development, largely affecting the market position of the companies. The "Heat Treatment 4.0" seminar was an opportunity to have a look at the trends and the forecast changes in this dynamically developing industry."



In the UK commercial heat treater **Wallwork** gives us an update about what they are up to these days. *"Advanced and precision engineers seeking metal heat treatment and PVD coatings*



*will see a much expanded offering from Wallwork Group on stand Q6 at the 2018 show. A new Newcastle facility is now fully integrated into the group. Cambridge has increased vacuum brazing capacity with an additional furnace and gained further Rolls-Royce accreditations. While at Birmingham more Aluminium processing has been added. Howard Maher, group sales manager, explains, "The 12 months since the last show has been all about meeting rising demand and customer expectations. With added reach in the North East and Scotland, existing and new customers there get an even faster turnaround on orders. Capacity for processing Aluminium at our Bury HQ, was being stretched and it made sense to expand this at Birmingham to provide an even faster service to customers in the midlands and south. Vacuum brazing capacity again was under pressure so adding a new furnace at Cambridge will*

*meet rising customer demand there." The company has also added new fully accredited mechanical testing facility and so no longer have to rely on external testing. Running tensile, compression and hardness tests on materials and components prior to and post heat treatment, is now much quicker and feeds data into refining existing metal heat treatment processes and component design."*



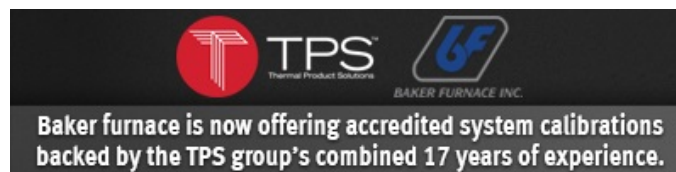
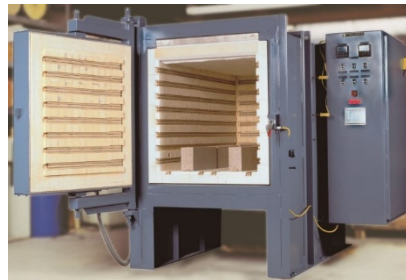
In Slovakia, Europe **Oerlikon Balzers** has just opened a new facility featuring nitriding systems. *"Oerlikon Balzers, a leading provider of surface solutions, has inaugurated its second production centre in Veľká Ida, Slovakia. The new plant marks another stage in Oerlikon's growth strategy in the automotive industry, a major investment which meets the highest quality and environmental standards and offers automotive manufacturers state-of-the-art heat treatment processes. Together with the service centre opened in 2015, the Veľká Ida plant now represents Oerlikon Balzers' largest and most important site for coating and heat treating*



*of automotive components. The nitriding process is carried out in heat treatment systems developed and manufactured by Oerlikon Balzers."*



In Louisiana, USA Valve part manufacturer **Gem-Trim** just received their fifth box furnace from L & L Special Furnace Co. "**L&L Special Furnace Co., Inc.**, has supplied an electric box furnace to a plant located in Louisiana that is a global supplier of large industrial valves for various industries. This is the fifth L&L furnace supplied to this facility. The furnace is used to both heat treat and temper various rings and seals deployed in the manufacturing of valves used in the power-generation field. It is also used for general heat treating of various steels prior to machining. The furnace has an effective work zone of 34" wide by 34" high by 32" deep." **September 24, 2018**



## Lindberg MPH/Alberta Industrial Heat Treating

Last year furnace builder Lindberg MPH based in Riverside, MI issued a press release about a nitriding furnace order they were very understandably proud of. We can now show you a picture of the unit. The furnace is now installed and operating at Alberta Industrial Heat Treating in Edmonton, Canada a company which is associated with Apollo Machine also

based in Edmonton. Alberta Industrial by the way is quite a new heat treater having opened within the past couple of years. **September 21, 2018**



## Jeff Lane Joins McLaughlin Furnace Group, Inc.

To this press release we will add that we interviewed Jeff McLaughlin earlier this year, an interview which can still be found at <https://www.themonty.com/jeff-mclaughlin-mclaughlin-services-june-2018/>

*"McLaughlin Furnace Group is pleased to announce that Jeff Lane has just joined their team in the role of VP of Operation. Jeff brings with him many years of experience in the heat-treating industry primarily in the position of Facilities Management. Jeff is excited about the opportunity to be working at McLaughlin Furnace Group where he states that he appreciates Jeff McLaughlin's passion and future growth plans. Jeff has been away from heat-treating for the last couple of years working for a company that makes custom portable pump packages. He is happy to be back after some time away and looking forward to seeing many of the great people he has worked with over the years. Jeff McLaughlin has this to say; "We have worked with Jeff Lane a number of times over the years and have always been impressed by his knowledge and dedication to the industry. We are excited that he will be working with us in the future". McLaughlin Furnace Group is based in Avilla, Indiana and designs and builds custom heat-*

*treating equipment, repairs and modifies existing equipment and provides troubleshoot and consulting. It is good to have Jeff back in the industry.” September 21, 2018*



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## **New Britain Heat Treat Fire**

Earlier this week we mentioned about the fire at New Britain Heat Treat in Connecticut, USA. The U Tube video below shows the fire but we will say that it is very upsetting for any heat treater to watch. **September 20, 2018**

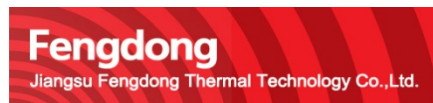


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## **StandardAero Component Services, New Repair Facility**

We mentioned a while ago how StandardAero was adding a new facility and more heat treating capacity. Here is an update. As an added bonus we have a photo of part of their heat treating department at one of their North American facilities (obviously this is one of their older facilities). Typically the company uses bottom load vacuums for their heat treating which is nothing unusual in the aerospace industry. *“StandardAero Component Services recently cut the ribbon on a new 206,000 sq. ft. repair facility, directly adjacent to its current 236,000 sq. ft. component repair facility in Cincinnati, nearly doubling its capacity to accommodate rapid growth in customer demands during 2018 and beyond. Hosting a ceremony to dedicate the new facility on September 14, StandardAero CEO, Russell Ford and Rick Stine, President of StandardAero Components, Helicopters & Accessories, were joined by employees and more than a dozen invited guests and dignitaries — including customers, city and state of Ohio officials, including representatives of U.S. Congressional offices, along with local economic development executives. The new facility has been converted into a high-tech*

aerospace component repair shop with new flooring, lighting and HVAC systems. StandardAero is actively moving parts, equipment and people into the building. During 2018, StandardAero also increased shop capacity by an additional 60,000 sq. ft. with expansions of its facilities in Hillsboro, Ohio and Miami locations. Overall investment to fund the expansions will exceed \$20 million in construction and capital equipment, when completed. StandardAero Component Services offers a comprehensive, One-Stop-Shop™ of repair and overhaul capabilities to provide industry leading turnaround times and meet customers' repair requirements. Some of the company's major process capabilities include cleaning, NDT and inspection; cold spray; thermal spray and coating; plating; welding/brazing and heat treatment; painting, stripping and surface prep; manual and CNC machining; and extensive composite capabilities." **September 20, 2018**



## **Total Solution for Heat Treatment**

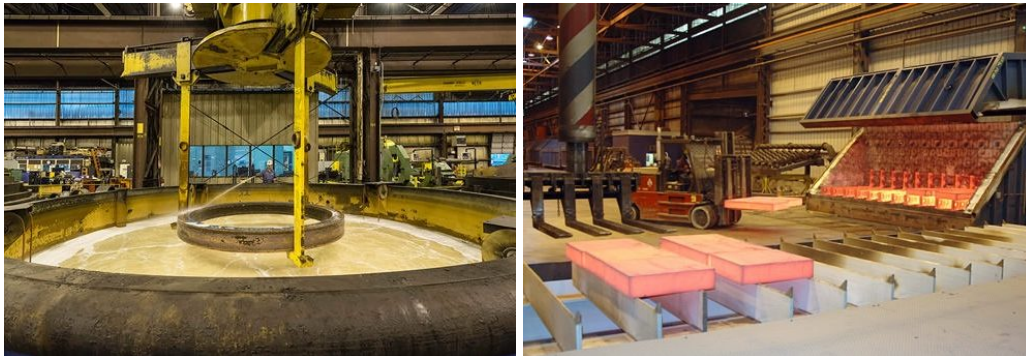
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### **Scot Forge, Spring Grove, Illinois, USA**

We see that forging company and captive heat treater Scot Forge is looking for an experienced Heat Treat Supervisor for their facility in Spring Grove, USA. While we have heard a lot about Scot we have never had the chance to visit this plant which is a shame because it has an enormous and very interesting heat treat department which includes a remarkable number of furnaces-in total 51 Car bottom, tip-up, and pit furnaces with



capacities to 76 ft long or 20 ft in diameter. One of these days we will have to see if we can do this company justice and take a tour of the facility. **September 20, 2018**



### **New Britain Heat Treating Corp., Fire/New Britain, Connecticut**

*"Firefighters battled a stubborn blaze at a Whiting Street heat treating plant Thursday afternoon as the fire continually reignited from the chemicals used in the business. Two firefighters were sent to the hospital to be treated for exposure to chemicals, Fire Chief Raul Ortiz said. The fire erupted at New Britain Heat Treating Corp. at 216 Whiting St. at 4 p.m. The company treats tooling and airplane parts and uses oil and propane as part of the process, Ortiz said. More than two hours after the blaze was called in, fire companies from Hartford, West Hartford and Waterbury were at the scene. "It's all hands on deck," Ortiz said. Heavy fire was showing from the front of building within minutes of firefighters arriving as a column of black smoke rose over Whiting Street. The blaze was immediately upgraded to a two-alarm fire. The state Department of Energy and Environmental Protection was called in to deal with any hazardous materials, Ortiz said. Crews sprayed foam from the outside the building. The metal roof was unstable and in danger of collapse so no firefighters could get inside, Ortiz said. After battling the blaze for about an hour and a half, the flames reignited. Apartments to the east side of the building were evacuated. Two hours later the blaze was melting the aluminum siding on the multi-family house next door. New Britain Heat Treating Corp. has been a fixture in New Britain for decades. The building appears to be a total loss."*



*Richard Ruiz was delivering air plane parts to the business at around 4 p.m., but when he pulled up he realized the building was in flames. "It was already gone when I got here," he said. "I've been delivering parts here for 15 years." Curious neighbors watched the scene and commented on what a loss it was for the city. "I drive by all the time," said Lexus Thomas who lives on nearby Maple Street. "It's been here I don't know how long. It's really a shame. Whoever worked there is now out of a job." **September 19, 2018***



## **Midwest Thermal Vac/Kenosha, Wisconsin, USA**

When Midwest Thermal Vac was formed by Fred Otto back in 1999 it was one of the very first commercial heat treaters in the world to offer vacuum carburizing. While VC has become relatively mainstream over the past number of years Fred can truly be considered a pioneer. Fred started off working with ECM all those years ago and has continued to do so, as a matter of fact he still processes many R & D loads a week for the company. After all these years Midwest is now a substantial operation with vacuum carburizing, vacuum heat treating and plasma heat treating, as a matter of fact Fred was the first in North America to purchase a system from Ion Heat in Colombia as you can see in the one photo below (Ion Heat's banner ad can be found on this page). Another photo below shows Fred in front of the original ECM VC system, a system which has the nickname "Mona" which explains the Mona Lisa picture over the furnace. Midwest is finding business to be so good these days that the company will shortly be adding another 8,000 square feet. We alluded yesterday to the fact that Fred has just received a brand new patent and we should say more about it. The patent was issued

August 21/2018 by the US Patent office (patent number 10,053,763 B2 to be exact) and covers “Carbo-Nitriding Process for Martensitic Stainless Steel and Stainless Steel Article Having Improved Corrosion Resistance”. The patent is in conjunction with SKF of Gothenburg, Sweden. Good for Fred, we can say that we met him when he was just starting out. *September 18, 2018*



## Good People Are Hard to Find

Every single captive and commercial heat treater in North America says the number one issue these days is finding good people, forget good people-any people would summarize the situation better. So this news item about the **Bluewater Thermal** (commercial heat treating) facility in Benton Harbor, MI caught our eye. We say good for Bluewater and good for the Offender Success program who put the wheels in motion. *“When Johnnie Walter got out of prison on parole in May 2017 he didn’t think he’d be able to get a job. Now, “He’s my biggest success story,” says Carolyn Moscardelli, general manager of Bluewater Thermal Solutions in Benton Harbor. Thermal Solutions heat-treats steel for mainly the automotive and construction industries. The company has 13 sites in the Midwest. At the Benton Harbor location, seven*

furnaces run for three shifts, seven days a week. The company will soon add two more furnaces, Moscardelli said. "It's hard to find people who want to work," she said. But Walter wants to, and so does his co-worker Bob Balay. Balay rides his bike to work, and Walter had been walking to work before recently buying a car. Walter said he's gotten his own place and is paying all his own bills. Balay said he just got his own place. "I got out of prison in March, and within about two months I was working here. They gave me a chance, and I've been busting butt ever since," Balay said. "Having spent 10 years in prison, I didn't expect to get a job. I didn't think anybody would hire me." Walter said when he first got out of prison he rode his bicycle to Michigan Works every day to work on job applications. He said he's "extremely grateful" to have been hired for a job after entering the Offender Success program at Kinexus. Historically, a person coming out of prison has a hard time getting a job. But human resources experts say labor shortages in some sectors are prompting employers to consider hiring ex-convicts to fill vacancies, especially in the manufacturing and construction industries. In Michigan, the Offender Success program strives to put felons to work by matching them with employers who are willing to hire them." **September 18, 2018**



## Monday Morning Briefing

We are going to start off today in Germany which we haven't done in a while. Commercial heat treater **Siegener Werkzeug und Haertetechnik GmbH** in Siegen (Germany) is getting pretty close to receiving a brand new vacuum nitridier from furnace manufacturer **Rohde** of Germany. We will let them give us the details. " This photo shows a chamber furnace for nitriding, nitrocarburizing and oxidation processes with working dimensions of 60/60/120 which is going to Siegener Werkzeug und Haertetechnik GmbH in Siegen (Germany) in a couple

of days. The photo was taken after run off and acceptance by the customer. In the picture below we see from left to right; Andreas Wiesemann (technical director of Rohde), Raphael Raatz (deputy technical director of Rohde), Joern Rohde (CEO) with Konstantin Rohde, Peter Haebel (technical plant manager at SWF) and Nils Voepel (head of technical operations at SWF)."



We now move to Wisconsin, USA to see how **Complete Heat Treating** is making some large investments. Good news is breaking out all over-it is unusual to find a heat treater these days who is not growing and adding capacity and Complete Heat Treating in Milwaukee,



Wisconsin is no exception (by the way if the name is familiar it is because we mentioned just a few weeks about how the company had acquired Commercial Heat Treating Inc., also of Milwaukee). Founded in 1939 as Wisconsin Steel and now operating under the names Complete Heat Treating, Wisconsin Steel Industries and Commercial Heat Treating this is a company which specializes in big work and we mean real big work-castings, forgings, weldments and plates up to 100,000 pounds. While the company is doing well at this market the decision of owners **Jake and TJ Dolhun** is that they want to add other processes and that is exactly what they have been doing. Recently the company purchased an aluminum drop bottom oven and a batch IQ furnace both of which will be installed in the near future. You see part of the team below in front of their largest furnace, a direct fired unit capable of 2100F and loads up to 1 million pounds which puts them in a very small group of companies able to handle loads this size.



Where are they now-**Norm McDonald**. We first ran across Norm a few years back when he was working for fastener manufacturer and captive heat treater **Dokka Fasteners** in Michigan. When the plant closed down we lost touch with him, however as it turns out Norm is like most of us and has stayed in the industry, and now he is at **MNP (Michigan Nut Product)** in Utica, Michigan. And guess what? MNP is a fastener manufacturer and captive heat treater (he is a good man we should add). By the way all the equipment at Dokka is currently in Viet Nam waiting to be installed which should happen later this year. We have this photo of the Dokka plant when it was in the process of being closed.



**Midwest Thermal Vac** out in Kenosha, Wisconsin, USA is absolutely booming these days and adding more capacity, the most recent addition being a "**Titan**" 12 bar vacuum furnace from **Ipsen**. We are going to have a full profile of Midwest and it's owner **Fred Otto** later on this week which will mention his most recent patent.





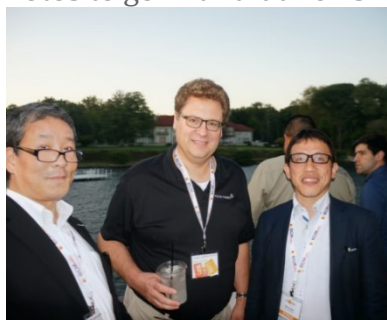
**Rex Heat Treat**, Lansdale, PA. Recently we ranked Rex Heat Treat as one of the largest commercial heat treaters in North America <https://www.themonty.com/largest-commercial-heat-treaters-in-north-america-august-2018/> When we ran across this



news item about electrical costs our first thought was good for Rex for being recognized for what they contribute to the local economy. *"The biggest electric customer in Lansdale plans to take advantage of a new borough discount, and borough officials say they're happy to hear it. Rex Heat Treat, a local fixture for nearly eight decades, plans to apply for the biggest discount available under the borough's recently updated electric incentive. "As far as I'm concerned, this is a win-win: for the borough, it's a win for them, and I think it's a great idea," said council President Denton Burnell. "They were looking at us, and they were looking at other locations, and because of this incentive they decided to stay here," Burnell said. Rex Heat Treat is located on West Eighth Street and specializes in hardening, treating and tempering metal products, from mining equipment to missile components and everything*

*in between. The company was founded by J Walter Rex and Elmer Erb in 1938 in a two car garage on third street before moving to the current location in 1958, and two subsequent generations of the Rex family have grown grown the company ever since. Rex is currently the largest electric customer in town, according to borough Manager John Ernst, who said the company's current electric bills run from \$70,000 to \$80,000 per month, and after a planned expansion project will grow to \$125,000 to \$140,000 per month, even after the discount.*

**ECM USA, 20<sup>th</sup> Anniversary.** We have already spoken a little about the 20<sup>th</sup> Anniversary Celebration of furnace builder ECM which was held in Pleasant Prairie, WI, USA last week. We have these two additional photos to go with that news item. **September 17, 2018**



*Toyo Tanso; Tex Morita, President, Jeff Bremmer, Sales Manager, Michio Ando VP, Director of Sales*



*Raul Medina, Bodycote, San Luis Potosi, Mexico, Henry Durnwald, Plant Manager*

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## FPM Heat Treating

Earlier this week we posted a photo of part of the management team of commercial heat treater FPM-it is now time to add some details to that photo. According to the infallible heat treat news source ***"The Monty"*** FPM is rated as the seventh largest commercial heat treater in North America <https://www.themonty.com/largest-commercial-heat-treaters-in-north-america-august-2018/> Founded in 1979 in a 13,500 square foot building FPM now has 3 plants in the US Midwest dedicated to commercial heat treating with a fourth plant basically handling all the needs of a single, large manufacturer. So from their rather humble beginnings the company has now grown to almost 300,000 square feet under roof and over 200 employees. We would describe the firm as being a full service operation with a total of 15 batch IQ furnaces, 9 vacuum furnaces all NADCAP approved rated at up to 10 bar, multiple mesh belt lines with a number of other processes thrown into the mix. In addition the company is quite proud of their "straightening" abilities which we have always (rightly or wrongly) considered more of an art than a science. It is always difficult to come up with one reason why a company is successful but in this case FPM puts a lot of it down to a lot of good long term employees, the fact that redundancy is built into every process and that they have been successful over the years in taking over the heat treating needs of captive heat treaters. For trivia time we have this; "Where does the FPM name come from"? The company was originally formed by 2 Feltner's, 1 Perrone (the accountant) and 1 Manseau-as you can see from the names



attached to the picture Jim Feltner and George Manseau are like many of us in this business, in it because our fathers and grandfathers were. **September 14, 2018**



*From the left; Jim Feltner, VP, Bill Koziel, President & CEO, George Manseau, General Manager, Bob Ferry, VP, Engineering & Quality*



## **ECM USA 20<sup>th</sup> Anniversary Technical Conference**

Furnace manufacturer ECM USA of Pleasant Prairie, WI., USA is celebrating their 20<sup>th</sup> anniversary in the USA with a Technical conference as we speak. The event started Wednesday September 12 and will conclude the evening of Thursday, September 13<sup>th</sup>. Attendance is a very robust 90-100 people and the event includes a number of technical sessions with some of the top suppliers in the industry. The photos below give you a good idea about what is happening as we speak. **September 13, 2018**



*Laurent Pelissier, CEO, ECM Technologies, Yvan Trouillot, GM, ECM Greentech, Dennis Beauchesne, GM, ECM USA*



*Jim Demarest, VP Sales, SAFE Cronite, Jeff Schlais, Absolute Furnaces Controls*



## **Ipsen, Rockford, Illinois, USA**

As one of the oldest and largest furnace manufacturers in the world, Ipsen needs little introduction. With that said, we at “The Monty” recently had the chance to tour the company’s manufacturing facility in Rockford, Illinois (Cherry Valley to be exact), a tour which is always interesting. While the Rockford facility has the ability to build any of Ipsen’s product lines, the main focus here is on vacuum furnaces. To take it one step further, in addition to their other vacuum furnace product lines, every one of Ipsen’s over 300 “TITAN” model vacuum furnaces have been built in this facility. While the plant itself is quite modern, it is steeped in history which makes for an interesting visit. For instance, the one photo below shows a Harold Ipsen designed prototype vacuum furnace from the 1950’s (this is the picture showing the “satellite” shaped object). A second photo below shows reproduced copies of patent drawings sketched by Harold. This sketch and others like it are displayed throughout their brand new training room. The two other photos show vacuum furnaces in various stages of construction. It is truly fascinating to see row upon row of brand new furnaces, all in various stages of construction. During our visit a fascinating story was

shared with us, a story which we hope to be able to share in more detail in the future. Ipsen recently completed the largest vacuum furnace they have ever built, a furnace which is believed to be the largest vacuum furnace ever produced anywhere in the world. All we can share with you is that due to its size it was built in a specially engineered annex to Ipsen's Cherry Valley facility, and it shipped to an Ipsen customer located in the USA. We hope to share more details and photos of this furnace in the near future. ***September 13, 2018***





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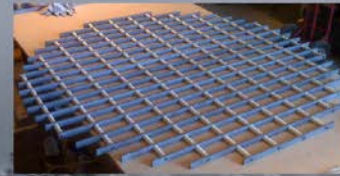
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## **Contour Hardening Appoints Ben Crawford As CEO**

*"Contour Hardening is proud to announce the appointment of Ben Crawford as its new CEO and President. Ben's proven leadership abilities and more than twenty-five years of experience in the heat treat industry, will prove invaluable as Contour Hardening enters a new phase in the company's development. Contour Hardening, based in Indianapolis, Indiana (United States) with additional operations in Silao, Mexico, is an innovation-driven company with a strong portfolio of products and services that significantly improve heat treat processing techniques for products across multiple industries around the globe.*

*The appointment of Ben Crawford follows the recent passing of Contour Hardening's founder, CEO and President, John Storm. Ben Crawford officially took the helm of Contour Hardening on July 30th, 2018. Prior to that, Ben was involved with three of North America's largest providers of heat treat services: Bodycote, Bluewater and Paulo. With those companies, Ben held a number of titles, including COO, Vice President and Regional Operations Manager and was responsible for directing up to \$100 million in revenues, twenty-facilities and seven-hundred employees in three-countries.*

*When addressing his plans for Contour's future, Ben Crawford said, "To lead Contour as a global provider of heat treat services is exciting. Contour Hardening has an extensive team of scientific problem solvers including metallurgical, controls, mechanical and electrical engineering". Asked about his strategy for Contour Hardening's immediate future, Ben said, "With the installation of robotics, Contour Hardening will advance treatment applications with controlled and repeatable processing methods. Our recent award of General Motors- Supplier of the Year demonstrates our commitment to processing to the strictest standards by eliminating variation". Ben Crawford has proven track record of excelling in diverse management positions. We are confident that Ben's background will be an asset for Contour Hardening going forward and extend a warm welcome to him.*

**ABOUT CONTOUR HARDENING.** *Contour Hardening ([www.contourhardening.com](http://www.contourhardening.com)) is a full service induction hardening system manufacturer, specializing in induction hardening systems, contract processing, and application development work. The company was founded in 1986 and brings more than 30 years of industry leading research and innovation in the discipline of heat treat techniques and processes."* **September 13, 2018**



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## Tri-City Heat Treating Company Expanding

Out in Rock Island, Illinois, USA commercial heat treater Tri-City is expanding. This family owned business was founded in 1960 and is now into it's fourth generation with Rick Damewood the President representing the third generation. It now has over 50,000 square feet under roof, 60 employees and is able to offer quite a few different processes however lets talk about their expansion plans. Phase 1 of the plan is a brand new batch IQ furnace with water quenching which will be ordered shortly. Phase 2 involves greatly expanding the company's aluminum processing equipment to meet increasing demand from their customers. These are the good times in the heat treating industry and progressive company's



such as Tri-City are taking advantage of the good times by investing in new equipment. **September 12, 2018**



*Rick Damewood, President Tri-City Heat Treating, Gord Montgomery*



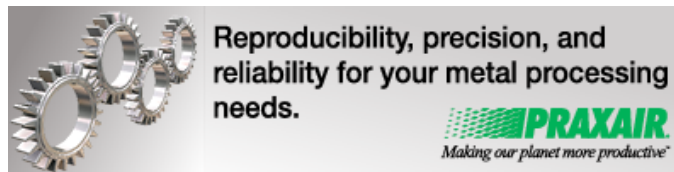
## Uttis Romania/Wesman India

To this interesting news item we can add that we received another very interesting news item from Uttis Romania back in April of 2017 when they announced that they had secured a very nice order from Daimler in Romania (this news item is below the most current one).

*"We are pleased to announce that at the beginning of September, Wesman India and Uttis Romania entered into a license agreement for manufacturing industrial furnaces in India based on Uttis design projects. Wesman has a long and good reputation on Indian market and together with Uttis team will build a strong cooperation focused on top equipment design and process knowledge. The furnaces that will be installed and commissioned will have Wesman-Uttis name on them."* **September 12, 2018**

*APRIL 2017 PRESS RELEASE; "UTTIS has recently commissioned a case hardening line in controlled atmosphere and technology for planetary gears production at Daimler plant in Romania. The case hardening line comprises 2 units sealed quench furnaces, washer unit, tempering furnace, endogas generator, loading/unloading devices, other auxiliary equipment. Maximum gross weight of a batch is 1000 kg and the equipment technical availability is 98%.*

*The monitoring/control system for batches controls case hardening programs, batches traceability and process simulation. Cooling of the agitators and quenching oil from the atmosphere furnaces is ensured by a heat exchanger air-oil, without any cooling water. The endogas generator provides automatic adjustment of the endogas flowrate and dewpoint, maintaining uniform pressure at evacuation.”*



## **“The Monty” Weekly Updates**

Subscribers to “**The Monty**” will have noticed that you are now receiving a brief weekly news update-e mailed to you Monday Mornings. This is a new feature we are offering and it consists of a quick summary of the top news items from the previous week along with recent used equipment additions and job postings. If you feel this is too much of a good thing please let us know, conversely if you would like this on a more regular basis we would also appreciate hearing that also. The full “The Monty” all 150 pages will continue to be mailed to you at the beginning of each month and the website will of course be updated Monday through Friday. ***September 12, 2018***





# Increasing Production and Profitability

## 5 reasons to consider a vacuum upgrade

### 1. Optimize Production

If you are looking at a new furnace simply because you need more production, you should first consider whether you can get enough added production out of your old furnaces. If you can get a 10% boost in production from your 10 furnaces by shortening your cycle time with faster pump down, you effectively have an extra furnace.

### 2. Reduce Energy Burden

Strategies like storing electrical power for use in peak demand hours is a new example of the lengths to which some heat treaters are going in order to keep the lights on. An alternative solution is to use less power on existing furnaces, and a great way to accomplish that is to use more power efficient diffusion pumps and roughing pumps. Smart diffusion and roughing pumps can be put in standby condition when not in use, they also use 30% to 50% less power during steady state processing. You could save as much as 10KW per furnace just by upgrading your vacuum system.

### 3. Maximize Footprint Utilization

If you have plenty of expansion room, footprint may not be a barrier to increasing production, however most do not have this luxury. If you are limited in space and need more production, demolishing that old furnace could hurt your top line and bottom line for quite some time. This is another reason to try to upgrade your current furnaces first.

### 4. Reduce Cost Per Batch

The argon and nitrogen you use at your facility are expensive. These gases require very high pressure and low temperatures to produce, which means they require great quantities of electrical power. Over time, as power prices rise, these gases will get even more expensive. Extracting more production from existing equipment means you are able to keep your inert gas cost stable, reducing your costs per batch

### 5. Focus on Process vs. Maintenance

It seems every heat treat facility we visit is short-handed. Good maintenance and operations workers are harder to find than ever. Old and outdated vacuum equipment is expensive, time consuming and takes a certain level of finesse to maintain. Upgrading those vacuum systems removes a great deal of the maintenance burden, freeing up people within your facility to operate and optimize existing equipment. Modern vacuum equipment will radically reduce your maintenance requirements, make your whole factory much quieter and cleaner, and make your best workers more likely to stick around.

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## Commercial Heat Treater Thermetco Expands Capacity with AFC-Holcroft Furnace Equipment

Canadian commercial heat treater Thermetco, located in Montreal, Quebec, Canada, has expanded their heat treatment production capability with the purchase of a new AFC-Holcroft UBQ (Universal Batch Quench) furnace and a UBT (Universal Batch Temper) furnace. The equipment will be used for general heat treating and offers the capability of providing metallurgical processes such as carburizing, carbonitriding, annealing, tempering, stress relieving, and other processes. AFC-Holcroft UBQ batch furnace equipment is designed to not only encompass a wide range of metallurgical processes, but thru its modularity and expandability, offers flexibility in production capability as needs change. Thermetco is the largest commercial heat treater in Quebec, offering several different heat-treating processes, with well-known customers in the automotive, aerospace, energy and petrochemical industries. "The Thermetco team has a history of building thermal processing equipment in the past and were able to quickly identify many of the key factors that make the UBQ an industry leader, including recovery rates, maintainability, Batchmaster™ controls, Remote

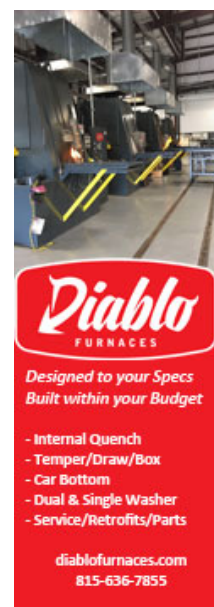
Diagnostics™, energy saving high/low endo flow, multiple speed quench, etc.”, states Tracy Dougherty, Sales Manager at AFC-Holcroft. “This order marks the first purchase of AFC-Holcroft equipment by Thermetco. We’re very excited about the opportunity to be a part of the Thermetco expansion plans.”

Delivery took place in the first quarter of 2018. The equipment was installed and commissioned at the company’s newly built manufacturing facility in Chateauguay (suburb of Montreal). About Thermetco. Founded in 1982, Thermetco began operations in stress relief treatments. Since then, they’ve made it their priority to build a team of professionals who can master the latest and most sophisticated heat-treating technologies. Today, Thermetco is recognized as a leader in heat-treating throughout the metallurgical industry, and offers services in the following applications:

- Heat treating
- Non-destructive testing (NDT)
- Metallurgical testing services
- Consulting services and training

**About AFC-Holcroft:** Founded in 1916, AFC-Holcroft, is one of the US market leaders in the production of industrial furnace equipment for ferrous and non-ferrous metals. The company manufactures turn-key heat treating systems for applications including commercial heat treating, bearings, automotive, aerospace, mining, aluminum heat treatment, gear manufacturing, fastener manufacturing, and alternative energy industries. Headquartered in Wixom, Michigan, AFC-Holcroft operates its own subsidiaries in China and Switzerland and has a global presence through a network of partners located in Australia, Brasil, China, India, Mexico, Poland and Spain.

**About AICHELIN Holding:** The AICHELIN Group, as part of the BERNDORF Group of companies, is a manufacturer of industrial furnace equipment for different industry segments and provider of after-sale services. AICHELIN Group also operates in the field of induction heating and in the manufacturing of industrial gas burner systems. The group’s production sites are located in Austria, Germany, France, Slovenia, the US, China, and India. Altogether, the AICHELIN Group has 1,100 employees worldwide and ranges among the largest producers of heat treatment





plants globally. For more information, contact [media@afc-holcroft.com](mailto:media@afc-holcroft.com). **September 11, 2018**

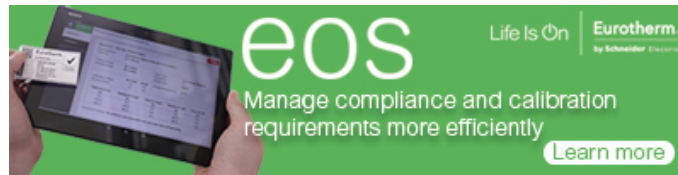


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## PlaTeG Plasma Nitriding System

PlaTeG is relatively well known in Europe for their Plasma (Ion) Nitriding systems but the company is almost completely unknown in North and South America. Having said that PlaTeG sent us this photo of a really cool installation they have in Korea. What you are looking at is a horizontal PulsPlasma Nitriders PP800 4300×10500 H. It has working dimensions of 3.000 x 1.500 x 7.000 mm and a maximum load weight of 40t (this translates into 118" X 59" X 275" for us North Americans). This is a damn big nitriders by any standards. **September 11, 2018**





## FPM Heat Treating

Recently we ranked commercial heat treater FPM in the US Midwest as the 6th largest commercial heat treater in North America. So who are these good looking fellows framing the FPM sign? Later on this week we will introduce you and tell you a bit more about FPM. *September 11, 2018*



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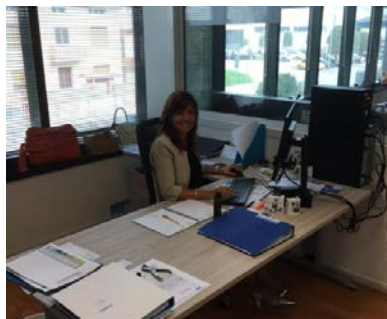
## Monday Morning Briefing

Friday we announced how **Aalberts Industries** of the Netherlands had acquired a surface treatment facility in Greenville, SC to compliment their existing heat treating facilities in North America. To round this story out we can say that their **Accurate Brazing** division in Greenville has just added a second facility. **Steve Francis**, President of Accurate has this to say; "Yes Gord you are correct, the Pelham Road Facility is our 2nd plant in the Greater Greenville area and yes, it is brand spanking new. We now operate 4 facilities along the east coast ... and growing. The new Pelham Road facility has also achieved AS9100 and NADCAP accreditation within the last few months." We have these two photos of the new plant and it certainly looks extremely impressive. *September 10, 2018*





In July we had a news item about new ownership at furnace builder **Meapfornin** in Italy, this will refresh your memory; *“Italstart announces today that it has aquired Meapforni, a company that specializes in the design, manufacturing, and servicing of industrial furnaces. Italstart is a holding company founded by Mr. Francesco Pieropan and Ms. Paola Canal and others colleagues and investors . Both executives have extensive experience in the industry, having held positions at Cieffe Forni Industriali, as Vice President of Sales and General Manager respectively. Meapforni is based in the Northeast of Italy, a short drive from the international airport of Venice. This is a region that is well known internationally as a pole of high quality industrial production and technology innovation. The company was started in 2015 by Arcangelo Pessot, the original founder of Cieffe and its President from 1984 to 2014. Mr. Pessot will stay on with the new company, assuming the position of Vice President of Business Development and R&D.”*We are expecting an update about how the company is doing but for the time being we have this photo of **Paola Canal** at her desk.



According to MTI figures sales for commercial heat treaters in Texas are roaring back after a long painful period due to the slump in the oil and gas industries. We are certainly seeing this and a good example is **Lark Heat Treat** in Houston, Texas. Lark Heat Treating was



founded in 1978 by brothers Frank and Gene Clark and over the years it has grown into one of the larger heat treaters in Texas offering most heat treating processes including vacuum heat treating. The company is in the process of adding two more vacuum furnaces including a real beauty, a 5 bar Ipsen bottom load furnace with working dimensions of 72" OD X 96" high. Originally this was installed at a Pratt & Whitney in Florida and it is an extremely impressive furnace. Lark is a company we have always had a high opinion of. To go with this news item about Richard Sisson we have this photo taken at a IFHTSE event in SC earlier this year. Richard is on the left; ***Richard Sisson Jr.,*** *George F. Fuller Professor of Mechanical Engineering and director of the Manufacturing and Materials Science and Engineering programs at Worcester Polytechnic Institute, has been named a fellow of two*

*materials science professional societies, the International Federation for Heat Treatment and Surface Engineering and the American Ceramic Society. Sisson, a Dartmouth native who directs the Center for Heat Treating Excellence, part of WPI's Metal Processing Institute, received the first fellowship at a South Carolina conference in June, where he also delivered one of three keynote addresses, "Challenges and Opportunities for the Heat Treating Community: Threats, Risks, and Benefits."*



The **Performance Review Institute** was originally set up to administer **NADCAP** which is why the organization is of interest to any heat treaters involved in the aerospace industry. October 25th the PRI will be hosting a free event in Pittsburgh, PA-these are the details; ***Could you shape the Aerospace Workforce of the Future?*** On October 25, leading aerospace manufacturers, airlines, training providers and technical experts will gather at this unique

conference and networking event. "Our involvement with eQualified has given Abaris the opportunity to enhance the content of our aerospace training courses and build lasting relationships with aerospace industry stakeholders. Our membership is invaluable because it gives us the opportunity to work alongside our customers (and potential customers)." – Mike Hoke, President, Abaris Training. This is a free event taking place on October 25, 2018 at The Engineers' Society of Western Pennsylvania, 337 Fourth Avenue, Pittsburgh, PA 15222, USA.



**Addressing A Challenging Situation;** There is a critical shortfall of qualified special process personnel in the aerospace industry, as well as a skills gap created by an increasingly globalised workforce. This has increased pressure on all organisations to reduce the time required to train new personnel and ensure they achieve adequate standards of competency at all levels. Confirmed speakers include Abaris Training, Honeywell, and Solar Atmospheres. **Register online** or contact Bethany Bauer at [bbauer@p-r-i.org](mailto:bbauer@p-r-i.org) or via telephone on +1 724 772 8644."

Furnace manufacturer **Rubig** of Austria recently announced that they are expanding into China and it would appear that the team is coming together. In this photo we see Leon Zhao completing his training at Rubig in Wels, Austria. Leon will be responsible for after sales service and sales in China.



We started off today talking about Greenville, SC, USA so we might as well finish with Greenville. This photo shows the **Bodycote** facility in Greenville which is both Nadcap and AS9100D certified. This division reports amazing growth these days.



## Aalberts Industries Acquiring Roy Metal Finishing Company

You might be scratching your head as to what the heck this has to do with heat treating, well we will tell you. Aalberts Industries in the Netherlands is a very large conglomerate which includes amongst their many divisions Hauck Heat Treatment which in Europe is one of the largest commercial treaters with over 30 plants. In North America Aalberts has four heat treating/brazing operations, Ionic Technologies in Greenville, SC and Accurate Brazing in Goffstown, New Hampshire, Manchester, Connecticut and Greenville, South Carolina. What this press release is telling us is that Aalberts has taken the very logical step of adding a Surface Treatment facility to compliment their existing heat treating and brazing plants-the fact that the new acquisition is just down the street from their two plants in Greenville, SC is an added bonus. Make sense now? **September 7, 2018**

*"Aalberts Industries N.V. has reached an agreement to acquire 100% of the shares of Roy Metal Finishing Company, Inc. (RMF) based in Greenville, South Carolina, USA, generating an annual revenue of approximately USD 30 million with 200 FTE. RMF, founded in 1961 by Donald Roy and built by Clifford Roy, operates from three service locations and is specialised in corrosion protection surface technologies for the automotive, general industries and aerospace*

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*end markets. The service locations are strategically positioned near many OEMs in the southeastern region of the USA. RMF is an industry leader in areas of process technology, innovation, customer service and operational efficiency. While working in close cooperation with its customers, RMF's process development team continuously focuses on R&D and improving their self-developed surface treatment lines. The experienced management team of RMF, led by John Pazdan, will continue to manage the company. They will also drive a jointly made business plan aimed at expanding our Aalberts surface treatment business in North America. We will add new surface treatment technologies to the portfolio, accelerate business with our global Key Accounts and further expand our Aalberts surface treatment service network."*



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## **Delta Star Orders Pyradia Oven**

Want to see an example of a Pyradia Oven? We just listed an almost unused one on our "Draw/Temper" Page <https://www.themonty.com/draw-temper/> "Pyradia was recently awarded a contract for a Walk-in oven for Delta Star Inc., a company specializing in engineering and manufacturing of high quality transformers. Delta Star power transformers are individually designed and manufactured to exceed the highest industry standards and the exact specifications for the particular application. The walk-in oven will be heated electrically and will be used for drying applications." **September 7, 2018**





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## Southwest Heat Treat, Houston, Texas, USA

We used the photo below in our September, 2018 issue of “The Monty” which went out earlier this week to over 8,000 subscribers. The photo was taken at “Southwest Heat Treat”, in Houston, Texas one of the Bluewater Thermal Solutions facilities in North America. We would like to think that this represents the sun shining again over the Texas heat treating market which has suffered over the past few years because of the low oil and gas prices. **September 6, 2018**



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## Four Solar Atmospheres Facilities Obtain AS9100D & ISO 9001:2015 Certifications

*All four Solar Atmospheres facilities have recently obtained certifications to AS9100 Revision D and ISO9001:2015. Solar has held AS and ISO quality management systems registration certificates since 2001. These latest releases are the most demanding international standards required of suppliers to the aviation, space, defense and medical industries. The certification preparation followed a rigorous process of evaluating existing procedures and aligning them with the new requirements. Solar's Quality Management Systems ensure continuous improvement in productivity, efficiency and high class product quality.*

Edward Engelhard, Corporate Quality Manager, states: "A key portion of this latest revision highlights the need for top management's commitment and risk assessment. We at Solar have a daily commitment to quality vacuum thermal processing, from senior management on down. The adherence to strict specification requirements and to uncompromising process execution provides a service that not only meets, but often surpasses our customer's expectations." Solar management wishes to thank all of our hard working staff for their continued commitment to maintaining these highest quality standards. Please visit our website for all current certifications and approvals. [www.solaratm.com/why-solar-atmospheres/certifications](http://www.solaratm.com/why-solar-atmospheres/certifications) For additional information about Solar Atmospheres, call 1-855-WE-HEAT-IT (1-855-934-3284), and visit us at [solaratm.com](http://solaratm.com). **September 6, 2018**



## Akron Steel Treating Company Day? You Bet.

Akron Steel Treating Company Day in the City of Akron was declared on Friday, August 31, 2018 by the Mayor of the City of Akron in recognition of 75 years in business. Joseph Powell, Steve Powell, Matt Moldvay, all of the ASTC Family and I enjoyed reminiscing and we all look forward to our next chapter in business! **September 5, 2018**



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## C3 Data forms partnership with CCPI Europe



*"US-based software company: **C3 Data** announces **CCPI Europe Ltd.** as its exclusive UK & European distributor for its furnace compliance software products. Here are the details of the press release: Nathan Wright, CEO and founder of C3 Data, states "CCPI has a long history of technology innovation in the field of temperature measurement. This, combined with their highly experienced sales resources in both the UK and Europe, makes them the ideal partner for C3 Data. We are excited to introduce our innovative software to the UK and European aerospace and automotive manufacturing industry."*

*Jonathan Golding, Managing Director of CCPI Europe, added, "CCPI Europe is delighted to partner with C3 Data to take this technology forward into Europe. CCPI Europe; a Marmon Engineered Wire & Cable / Berkshire Hathaway company, is well positioned to promote this new technology across multiple industries and corresponding applications. Our depth of application knowledge and industry ties in heat treatment and thermal processes in Europe, now with the support of the C3 Data team, will allow CCPI Europe to support this technology in cooperation with forward-thinking customers"*

**About CCPI:** *Founded in 1984, CCPI Europe provides high-quality temperature measurement solutions to the aerospace, automotive, aluminum, and other industries. They are experts in the fields of manufacturing and calibration of temperature sensors, working in partnership with customers to ensure their customer expectations are exceeded. <http://ccpi-europe.com>*

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 **Bodycote**

**About C3 Data:** C3 Data provides software products to simplify the furnace compliance process for heat treaters and pyrometry calibration labs seeking to comply with Nadcap (AMS2750) & CQI-9. Providing real-time visualization of furnace compliance through cloud-based and mobile software, C3 Data's solutions are streamlining pyrometry testing processes to drive efficiency and provide peace of mind, knowing furnaces are qualified and audit-ready. <http://c3data.com>

To learn more about C3 Data's software solutions in the UK & Europe, please contact: Julian Bloomfield [jbloomfield@ccpi-europe.com](mailto:jbloomfield@ccpi-europe.com)

To learn more about C3 Data's software solutions in North America, please contact: Matthew Wright [mwright@c3data.com](mailto:mwright@c3data.com)  
September 4, 2018



## Ipsen-How Large is the Company?

As one of the older companies in the furnace manufacturing business it would be a very unusual heat treater who is not familiar with the Ipsen name. We happened to run across a rather dry press release about Ipsen recently and tacked on to the end of the press release was this rather interesting summary about the size of the company; "IPSEN ([www.ipсен.de](http://www.ipсен.de)), based in Kleve, Germany and Rockford, USA, and with several facilities in Asia, manufactures high temperature heat treatment systems for a wide range of industrial purposes, including but not limited to aerospace, automotive and industrial machinery end-markets. With 25 global subsidiaries and a workforce of approximately 900 employees, IPSEN generates revenues in excess of €220m. On the basis of more than 10,000 active systems, IPSEN maintains the largest installed base in the market. This, together with a comprehensive offering (incl. spare parts, installation and maintenance services as well as software upgrades and retrofit), allows IPSEN to obtain almost half of its revenues from the aftermarket segment." **September 4, 2018**

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## Codere Says Business is Great!

Furnace builder Codere SA in Switzerland is updating us on 2018 furnace orders; *"Codere SA want to inform readers on recent pre-receptions which have taken place in our workshop over the last week for Slovakian and Russian customers. Codere's workshop is at full capacity at present and have orders to be realised with a number of installations in Switzerland, France and Hungary to come before the end of the year. In the photo below is a customer from Slovakia who is a leading commercial heat treater as our flexible System 250 compliments his wide range of customer requests for case hardening processes. They bought the first line in 2007 for 500 kg brutto (Size 70/100), which was followed by a furnace (1000°C) extension in 2015 due to increasing work orders. In 2018 this customer has obtained an order to heat treat train components in large quantities and Codere customised their batch size to respect 1150 mm useful height in their batch line for carbursing case depths up to 3-4 mm.*

*The second photo is for commercial heat treater based in Russia for research and development as they invested in a high temperature furnace with options of oil & water quench on various materials with gross weight of load being 30 kg with required washing, tempering & annealing processes. Codere has unique advantages against traditional batch furnaces. There has been growth especially in salt quenching processes (ADI, martempering, bainitic hardening), titan treatment, aerospace projects respecting AMS 2750E or Automobile (CQI9) and multi product series (Flexibility needed for temperature & atmosphere). Codere suggests you follow us on Twitter for the most recent updates @Codere\_CH & if you have any questions on our website, please don't hesitate to contact David Howard at [info@codere.ch](mailto:info@codere.ch) for further information or call + 41 32 465 1010" **September 4, 2018***



## BULTEN Orders Cast Link Belt Furnace

*"Swedish fastener manufacturer BULTEN has commissioned heat treatment specialist AICHELIN with the production of a cast link belt furnace for heat treating of high-strength steel screws and nuts. At 80 meters in length, the furnace plant has a capacity of 2 tons per hour and is scheduled to be shipped by December 2018. It is the second industrial furnace plant for the Swedish Hallstahammar site. Ten years after its first delivery for this site, AICHELIN has now been able to land the follow-up order for a second 2000 kg/h cast link belt furnace plant. Thanks to the positive references at BULTEN, the current project was finalized within a few months only between the first request and the final negotiation. The plant line measures 80 x 10 meters and weights around 180 tons; counting liquids and components, even 230 tons. AICHELIN is delivering the electrically heated high-temperature hardening furnace and the protective-gas-tight tempering furnace with oil or emulsion hardening baths. Moreover, measuring and switching systems are included, as well as the process control system FOCOS 4.0 for the new plant (as well as an update of the data acquisition of the existing plant) and a protective gas generator. As with the previous order, the customer provides the loading and unloading device and the component washing machines under their own direction."* **September 4, 2018**



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## Labor Day Holiday

Due to the international Labor Day Holiday the offices of WG Montgomery Ltd., will be closed for Monday, September 3/2018. Regular news updates will resume Tuesday September 4/2018. **September 3, 2018**

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# BATCH FURNACES

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## *Quick Jump To Items:*

- Item # B460** Super 30 Batch IQ
- Item # B459** Surface Combustion Batch IQ
- Item # B458** Box Furnace, 70" X 42" Retort 2,000F
- Item # B455** Lindberg Box Furnace
- Item # B454** Lindberg Box Furnace
- Item # B453** Williams Industrial Batch IQ's (2 Available)
- Item # B452** Applied Heat Technologies (AHT) Fluidized Bed Furnace
- Item # B451** Surface Combustion "Super 30" Allcase
- Item # B449** Air Atmosphere Box Furnace 2,000 F
- Item # B448** Tip Up Furnaces (3 Available)
- Item # B445** Surface Combustion "Super 36" Furnaces (3 available)
- Item # B444** BOREL Furnace 550 °C
- Item # B443** SOLO Heat Treatment Line
- Item # B442** SOLO Quenching Machine
- Item # B441** GM Batch IQ with Top Cool
- Item # B439** Surface "Super 36" Allcase
- Item # B438** Holcroft Batch IQ Furnace
- Item # B437** Ipsen Recirculating Box Furnace
- Item # B436** 36" x 60" Pit Gas Nitrider
- Item # B426** Plasma Nitriding Unit 1000 kg Capacity
- Item # B425** Box Furnace 2000 F
- Item # B415** J.L. Becker Car Bottom 1800 F
- Item # B399** Car Bottom Furnace 10' x 12' x 8'
- Item # B398** Sauder Batch IQ Line 24" x 24" x 36"
- Item # B397** "Lift-Off" Atmosphere Box Furnaces (2)
- Item # B374** Atmosphere Box Furnace 2100 F



**Item # B352 Pacific Scientific Box Furnace**

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**ITEM # B460**

**SUPER 30 BATCH IQ 30" X 48" X 30"**

**Surface Combustion "Super 30" Allcase Batch IQ furnace.** Working dimensions of 30" x 48" x 30". Serial number BX 37769. Early 1970's vintage. Alloy in good condition and comes with a new spare trident tube. 2,000 F operating temperature, gas fired. Updated SSI controls. Currently installed and in good condition.

**Asking Price \$45,000 USD**



**ITEM # B459**

**SURFACE COMBUSTION BATCH IQ**

**Surface Combustion batch IQ furnace.** Serial number BX 36347-1. Gas fired, 1750 operating temperature. Endo atmosphere. 800 pound capacity. Does not require a pit. Complete and installed. Updated SSI controls with oxygen probe. Alloy and brickwork in fair condition. Working dimensions of 24"W x 36" deep X 20" high. Some cast fixturing is also included.

**Asking Price \$25,000 USD**



## ITEM # B458

### BOX FURNACE, 70" X 42" RETORT 2,000F

**Box Furnace, 70" X 42" Retort 2,000F.** Manufactured by Noble Furnaces this is a gas fired box furnace capable of 2,000F. Furnace has a vertical lift front door with a charge car and retort. Furnace has working dimensions of 8' X 8' X 6" high (approximate). 330SS retort has working dimensions of 70" diameter X 42" high. Vendor has been processing aerospace parts in an argon atmosphere in the retort, however furnace can be used without the retort. Excellent condition, currently installed and in operation.

**Asking Price \$80,000 USD**

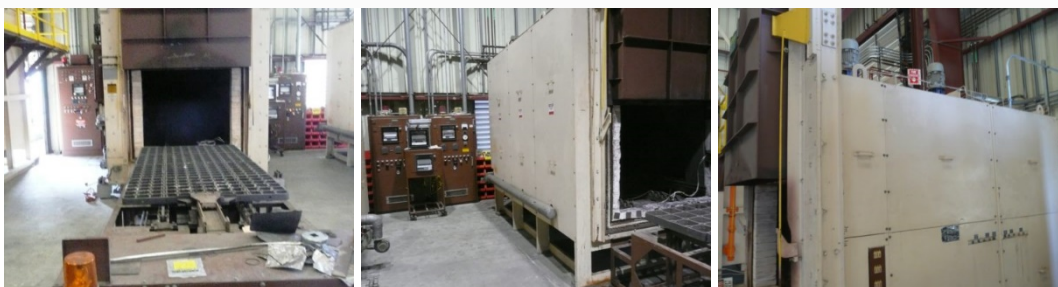


## ITEM # B455

### LINDBERG BOX FURNACE

**Lindberg Box Furnace 2000F.** Lindberg Box Furnace Model 11-ROMT-489336-20F. Serial Number 88810-L. Electrically heated, voltage 480/3/60/190kW. Maximum operating temperature of 2000F. Working dimensions of 48" wide X 36" high X 96" long. Controls: Mounted and wired in a free standing control panel includes SCR for heating elements, digital temperature controllers for control and high limit, strip chart recorder etc. Description: Standard Lindberg design box furnace with "Rod Overbend" heating elements, vertical lift door, roller rail hearth, cast alloy tray, two (2) roof mounted fans and stationary powered loader/unloader. Very good condition.

**Asking \$95,000 USD.**



## ITEM # B454

### LINDBERG BOX FURNACE

**Lindberg Box Furnace.** Model #11-MT-489336-14. Serial #888809-L (9/1989). Electrically heated. Operating temperature of 1400F. Voltage: 480/3/60/164 kW. Working dimensions of 48" wide X 36" high X 96" deep. Controls: Mounted and wired in a free standing control panel includes SCR for heating elements, digital temperature controllers for control and high limit, strip chart recorder etc. Description: Standard Lindberg design box furnace with "Moldatherm" heating elements, vertical lift door, roller rail hearth, cast alloy tray, alloy air plenum for air distribution, roof mounted fan and stationary powered loader/unloader. Very good condition.

**Asking \$75,000 USD.**



## ITEM # B453

### WILLIAMS INDUSTRIAL BATCH IQ'S (2 AVAILABLE)

**Williams Industrial Batch, high temperature, electric, Internal Quench furnaces.** 24" W X 36" deep X 24" high load size. Mid 1990s built. 2 identical units available. Currently used for solution heat treat, water and Polymer quench. Max temp. 2100F, very tight  $\pm 10$ F or better uniformity. Set up for Nitrogen atmosphere. Waukee meters for air and N<sub>2</sub> with solenoids tied to recipes. SSI Oxygen probe with panel/display. Sand Lion PLC touch screen controls for recipes, charting, temp, agitator, atmosphere control etc. Horizontal SiCarbide glow bars for heating. SiCarbide rails make up the hearth for tray support and transfer. Chain guide and roller rails over the quench vestibule. Air operated inner and outer doors. Units are in use but ready to take out for the floor space. Transfer car not included.

**Asking price \$25,000 each.**



## ITEM # B452

### APPLIED HEAT TECHNOLOGIES (AHT) FLUIDIZED BED FURNACE

**Applied Heat Technologies (AHT) Fluidized Bed Furnace.** Applied Heat Technologies (AHT) fluidized bed furnace. Treatment chamber is 300 mm diameter x 900 mm deep (roughly 12 in diameter x 36 in deep.) Maximum temperature is 1050 °C (1922°F). Maximum load is rated at 50 kg at 1000 °C (110 lb at 1832 °F) and 90 kg at 570 °C (198 lb at 1058 °F.) Mark® fluid bed furnace controller software. Silicon carbide heating elements, 25 kW, configured in delta. Piping is set to accept nitrogen, argon, hydrogen chloride (HCl), and hydrogen gasses. Inert material is P120 grit aluminum oxide (Al<sub>2</sub>O<sub>3</sub>) powder. The fluidized bed is designed to deposit vanadium carbide (and other carbides with correct chemistry) onto steel. The fluidized bed system comes with a propane burner, HCl detection system, and scrubber system. The system also has a hood and quench bed that came with it but these have not been used and it cannot be verified that they work. The fluidized bed system with scrubber is currently operational but is not being used. Almost new heating elements with one spare included.

**Asking \$99,000 USD**



## ITEM # B451

### SURFACE COMBUSTION "SUPER 30" ALLCASE



**Surface Combustion “Super 30” Allcase.** Manufactured by Surface Combustion this is a batch IQ furnace. Working dimensions of 30” wide X 48” deep X 24” high. Gas fired. Nitrogen/Methanol with updated controls and an Atmosphere Engineering SmartMeth panel. Included datalogging and trending. SSi oxygen probe. Honeywell overtemp. Currently installed, complete and in good condition. Ready to go and available immediately.

**Asking \$40,000 USD.**



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**ITEM # B449**

### **AIR ATMOSPHERE BOX FURNACE 2,000 F**

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

**Asking \$60,000 USD.**



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**ITEM # B448**

### **TIP UP FURNACES (3 AVAILABLE)**

**Tip Up Furnaces (3 available).** Manufactured by Kleenair Products these “Tip Up” style furnaces have working dimensions of 60” wide X 60” high X 72” long. Natural gas heating-

1200CFH. Maximum temperature 1500F & 2000F. 460/6/60 electrical. External dimensions of 8'W x 10'6"H (closed) x 14'L Each, 13'6"H when open. Controls: Temperature controls are missing. There is one (1) control cabinet which houses the flame relay modules, motor starters etc. and is common to all three (3) furnaces. Description: Currently available are two (2) 1500°F furnaces and one (1) 2000°F furnace. There is also one (1) loader and one (1) quench tank. Furnaces are ceramic fiber lined with Eclipse "TJ" direct fired burners. Burners fire from top rear and bottom front under the refractory piers. Dual hydraulic cylinders open/close the furnace cover. One (1) common hydraulic power unit for all three (3) furnaces. We will separate the line to sell individually or as a whole. We can provide hydraulic power units for each furnace. Very good condition.

**Asking \$55,000 USD each or \$150,000 for all three.**



### ITEM # B445

## SURFACE COMBUSTION "SUPER 36" FURNACES (3 AVAILABLE)

**Surface combustion gas fired batch IQ furnaces model "Super 36".** Working dimensions of 36" wide X 48" deep X 32" high. Late 1980's vintage. Casemate controls, SBS quench oil filter. Set up for endo atmosphere with ammonia addition. Currently installed, furnaces were in operation until February 27th 2018. Complete and in good operating condition. Pricing to come.



### ITEM # B444

## BOREL FURNACE 550 °C

**BOREL Furnace 550 °C.** Built by BOREL in 2006. Technical data: Power 20 kW – Frequency: 50 Hz – Tension: 400V 3LNPE – Maximum temperature: 550 °C – External dimensions: Length 135 cm, Width 130 cm, Height 175 cm – Internal dimension: Width 74 cm- Depth 82 cm – Height 39 cm. Located in France.

**Price on request [jordan@themonty.com](mailto:jordan@themonty.com)**



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**ITEM # B443**

## **SOLO SWISS HEAT TREATMENT LINE**

**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 [jordan@themonty.com](mailto:jordan@themonty.com)**



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**ITEM # B442**

## **SOLO QUENCHING MACHINE**

**SOLO Quenching Machine** 209-30/30 6981 – 1150 °C. Built by Solo of Switzerland this is a SOLO 209-30/30 model. This furnace was manufactured in 1991. Quenching machine for self-hardening and oil quenching. Composition: quenching Bell Furnace, nitrogen quenching unit, tempering furnace, oil quenching unit, controller / programmer, operator panel, temperature controller, hydraulic control. Dedicated for austenitizing, annealing, tempering, oil quenching, quenching under nitrogen. Max. temperature: 1150°C. Main voltage: 3 x 400 V – 50 Hz. Power input: 10 kW. Effective load dimensions: Diameter 300 mm\*Height 300 mm. Max. loading weight: 20 kg. Protective gas: N2 or mixture N2 to max. 5 % H2. Overall dimensions: Height 2200mm, width 2070mm, depth 2250m. Possibility of mounting and commissioning by the manufacturer (SOLO). Located in France. Good condition. All manuals included.

**Price on request [jordan@themonty.com](mailto:jordan@themonty.com)**



## ITEM # B441

### GM BATCH IQ WITH TOP COOL

**GM Batch IQ with Top Cool.** Manufacturer: GM. Type: Integral Quench Furnace with Top Cool. Heated: Natural Gas – 1.2 M BTU's/Hour. Max. Temperature: 1450-1875 deg. Voltage: 460/3/60. Work Area: 36"W x 36"H x 48"L.

Controls: All mounted in two freestanding panels next to the furnace Includes motor starters relays, pushbuttons, signal lights etc. Honeywell indicating controller and overtemp. Honeywell circular chart recorder for recording temperature. Carbon control system.

Description: Furnace has (4) "U" shaped radiant tubes mounted vertically, (2) on each side wall. Heated by recuperated burners. Alloy roller rail hearth, alloy circulating fan, dual quench cylinders, top cool chamber and heated quench tank. Brick lined with fiber roof. Rear handler system, 1998 vintage. Installed, complete and operational. Condition: Very Good. Availability: Immediate.

**Asking Price: \$150,000.00**





## ITEM # B439

### SURFACE "SUPER 36" ALLCASE

**Surface "Super 36" Allcase.** Surface Combustion "Allcase" batch IQ furnace with working dimensions of 36" X 48" X 30" high. Natural gas heating, 1 MBTU's/Hour. Maximum operating temperature of 1750F, voltage 460/3/60. External Dimensions: 10'W x 12'H x 15'L. Controls: All mounted in a panel attached to the furnace includes motor starters relays, pushbuttons, signal lights etc. Honeywell digital strip chart recorder for recording temperature, indicating controller and overtemp. Partlow controls for oil heating/cooling. Description: Surface Combustion Allcase Furnace with (6) "U" shaped radiant tubes mounted vertically 3 on each side wall. Fiber lined. Alloy roller rail hearth, alloy circulating fan, dual quench cylinders, top cool chamber and heated quench tank. Furnace has some missing components (temperature controls, pressure switches, ignition transformers, regulator) which will be replaced prior to shipment. Condition: Very Good.

Please call for pricing.



## ITEM # B438

### HOLCROFT BATCH IQ FURNACE LINE

**Holcroft Batch IQ Furnace Line.** Model GP2500. Serial Number S/N #CJ-4233. Installed new in 1980. Gas fired, working dimensions of 30" X 48" X 30" and a capacity of 2500 pounds. Furnace was operational until shut down on 11/30/17 when plant closed. Also included is a double ended charge car (Holcroft) to handle loads of 30" X 48", a Holcroft

Spray/Dunk washer with heating system 30" X 48" X 30" and 2 load tables, 1 stationary and 1 scissor lift. Complete, in very good condition and ready to go.

**Asking \$125,000 USD for everything.**



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### ITEM # B437

## IPSEN RECIRCULATING BOX FURNACE

**Ipsen Recirculating Box Furnace** 38" high x 43" wide x 48" deep. Gas fired, 1,000,000 BTU/hr with a max temperature: 1400 deg.F. Model Number: DL-3036. Serial Number: 60458. Updated controls, Honeywell indicating controller and overtemp. High temperature tempering furnace. Vertical lift air operated door with overhead air cylinder. Fiber board insulation. Alloy roller rail hearth. Direct fired furnace, but the heating chamber is separate from the work chamber and has a high velocity roof mounted circulating fan. Top mounted package burner. Complete combustion controls and safeties. 460/3/60 power. Test fired prior to shipment.

**Asking Price: \$39,500.00**



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### ITEM # B436

## 36" X 60" PIT GAS NITRIDER

**36" x 60" pit gas nitrider** (Lindberg Homo Nitrider – electric) built in late '70's, c/w with Super Systems Gas Nitriding Control system built in 2012. System was operational up until decommissioning last year, when it was replaced with new equipment. Price includes fixtures shown in pictures.

**Asking Price \$50,000 USD.**



## ITEM # B426

### PLASMA NITRIDING UNIT 1000 KG CAPACITY

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

**Asking 98.000 Euro.** Located in Turkey.



## ITEM # B425

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

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



**Asking \$85,000 USD.**



**ITEM # B415**

### **J.L. BECKER CAR BOTTOM**

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

**Asking Price: \$95,000.00 USD.**



**ITEM # B399**

### **CAR BOTTOM FURNACE**

**Car Bottom Furnace.** Manufactured by Huber this is a gas fired car type furnace. Maximum operating temperature of 2000F. Working dimensions of 10' 4" wide X 12' 8" long X 8' high. Overall dimensions of 16' wide X 16" long X 14' high. Gas fired. Electricity requirements; 480 Volts, 3 Phase, 60 Hertz. Controls; Watlow digital controller, Honeywell digital overtemp and Honeywell digital recorder. Power driven car with (3) three sets of axles.



Door is attached to furnace. Furnace is fibre lined and equipped with (4) four power flame model JD 130 package burners. Approximately 1,300,000 btu's each.

**Asking \$85,000 USD.**



## ITEM # B398

### SAUDER BATCH IQ LINE

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

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

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

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

Quench: 106" x 10'H x 72"

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

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

Misc. skids, flow panel, SBS, spare parts

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



## ITEM # B397

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

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

**Asking \$325,000 USD each.**



## ITEM # B374

### ATMOSPHERE BOX FURNACE

**Atmosphere Box Furnace.** Manufacturer: R&G Services, Inc. Inside Dimensions: 18" high x 32" wide x 36" deep. Heated: Electric, 230/3/60, 60 KW. Temperature: 2100 deg. F Model Number: EB-183236 Serial Number: 77021 Temperature Controls: Updated indicating controller and overtemp. Description & Features: Air operated vertical rising door. Slanted

face plate. Brick lined with silicon carbide hearth. Heated by heavy Nichrome ribbon heating elements. Atmosphere inlet and burn-off. Flame curtain with controls and safeties. Condition: Very good. Furnace will be cleaned & painted, repaired as necessary, checked out & test fired prior to shipment.

**Asking Price: \$18,000.00 USD.**



**ITEM # B352**

## **PACIFIC SCIENTIFIC BOX FURNACE**

**Pacific Scientific Box Furnace.** Working dimensions of 72" wide X 120" long X 48" high, Gas fired radiant tube, maximum operating temperature of 2050F. Air operated vertical lift door, fiber lines, new refractory piers (12), hi-temp horizontal radiant tubes (6 above, 6 below), full safeties, side exhaust guard. Free standing control panel-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 FURNACES

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## *Quick Jump To Items:*

**Item # C335** Compact Belt Furnace

**Item # C330** Mesh Belt Furnace Line

**Item # C327** Rogers Engineering Continuous Brazing Furnace

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

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

**Item # C322** Surface Combustion Rotary Hearth Line

**Item # C321** Austempering System 500 lbs/hr

**Item # C319** CI Hayes High Temperature Pusher Furnace

**Item # C317** CI Hayes High Temperature Pusher Furnace

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

**Item # C308** AFC Mesh Belt Furnace 54" Wide Belt

**Item # C301** Cast Link Belt Line 4000 lbs/hr

**Item # C283** Rotary Hearth Furnace System

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

**Item # C265** Sunbeam Pusher Carburizer 3000 lbs

## ITEM # C335

### COMPACT BELT FURNACE

**Compact belt furnace** 321-7-90 6677 1000°C. Built by Solo of Switzerland this is a SOLO 321-7-90 model. This furnace was manufactured in 1990. Composition: Loading frame, heating part with frame, cooling part with frame, unloading frame, driving system, conveyor belt, NH3 cracker 3m3/h, distribution for treatment and cabinet gas, operator panel. Dedicated for annealing under cracked ammonia, brazing and hardening. Max.



temperature of 1000 °C Heated length: 900 mm, cooled length: 1500 mm, channel section: 80 x 40 mm, Main voltage: 3 x 380 V – 50 Hz / TN, power input: 10,5 kW, gas generated: 75% H2 and 25% N2 (NH3), effective height with belt: 30 mm, conveyor belt width: 70 mm, external dimensions: L 5300 mm x l 800 mm x H 1250 mm. Perfect condition, ll manuals included. Located in France.

**Price on request [jordan@themonty.com](mailto:jordan@themonty.com)**

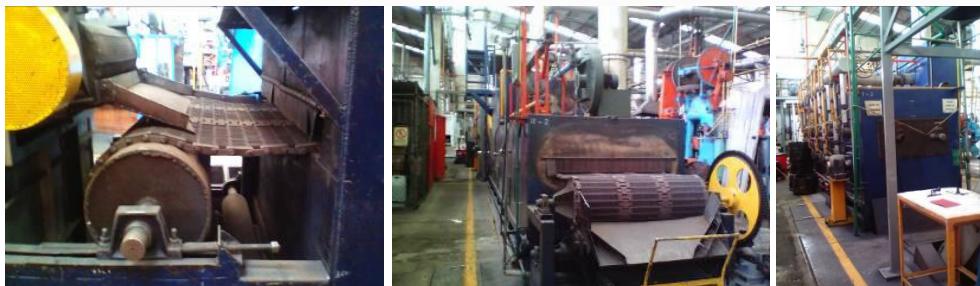


## ITEM # C330

### MESH BELT FURNACE LINE

**Mesh Belt Furnace Line.** Lobo Hornos built this mesh belt furnace line with all the engineering coming from Sunbeam. The line consists of a loader, high heat furnace, quench tank, wash, temper, and post wash. It has Honeywell, Shinha, and Siemens controls that are approximately 12 years old. The furnace has a heated length of 6 meters and a tempering length of 11.09 meters. Both the high heat and tempering lines can handle 500 KG/Hour each. The high heat furnace has an opening of 7" high by 40" wide. The tempering line has an opening of 6" high and 47" wide. Max temperature is 930 C. This mesh belt line is capable of either controlled atmosphere or Nitrogen gas. The alloy (AISI I-330, AISI I-310) and brickwork (T23& ceramic fiber) are in good condition. The quench oil is Equimsa 770 and there is a washer included. The furnace is complete in good condition and currently installed in Mexico.

**Best offer.**



## ITEM # C327

## ROGERS ENGINEERING CONTINUOUS BRAZING FURNACE

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

**Asking \$250,000 USD.**



**ITEM # C324**

## C.I. HAYES MESH BELT FURNACE

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

**Please call for pricing.**



**ITEM # C323**

## AICHELIN CAST LINK FURNACE LINE

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

**Best offer.**



**ITEM # C322**

## **SURFACE COMBUSTION ROTARY HEARTH FURNACE LINE**

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

**Asking \$50,000 USD.**



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## ITEM # C321

### AUSTEMPERING SYSTEM

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

**Asking \$20,000 USD or best offer.**



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## ITEM # C319

### CI HAYES HIGH TEMPERATURE PUSHER FURNACE

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

**Asking \$100,000 USD.**





## ITEM # C317

### CI HAYES HIGH TEMPERATURE PUSHER FURNACE

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

**Asking \$110,000 USD.**



## ITEM # C314

### ROLLER HEARTH FURNACE (ATMOSPHERE)

**Roller Hearth Furnace (Atmosphere).** Manufactured by Wellman in 1982. Model #AL-81-180 RH, S/N 180. Working dimensions of 60" Wide x 42' Long x 14" High – 4800#/HR. Electric – 480/3/60 – 469 KW (over (4) Zones of Control). Operating temperature of 1650° F. Brick Lined Atmosphere Capable Roller Hearth Furnace complete with (4) Zones of Control, Heating Elements above and below Rolls, Transformers, 25' Slow Cool Chamber

(Air Cooled with Fans), and Variable Speed Drive. Free Standing Control Panels with Watlow Digital Controllers ((1) Per Zone), Watlow High Limits, and SCR Power Controls. Overall dimensions; Entrance Chamber: 12' Wide x 14' Long x 10' 6" High. High Heat Chamber: 10' 6" Wide x 30' Long x 10' 6" High. Cooling Zone: 12' Wide x 27' Long x 10' 6" High. Approximate weight 80,000 pounds. Very good condition.

**Asking \$225,000 USD.**



## ITEM # C308

### AFC MESH BELT HARDENING FURNACE

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

**Asking \$75,000 USD.**



## ITEM # C301

### CAST LINK BELT QUENCH AND TEMPER LINE

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

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

The sequence of this furnace is as follows:

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

Includes:

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

Very good condition, available immediately.

**Asking \$650,000 USD.**





## ITEM # C283

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

#### **Denton Thermal Systems (O'Brien & Gere) 2150°F Rotary Hearth Furnace**

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

**Asking price: \$29,000 USD.**



## ITEM # C269

### CI HAYES MESH BELT FURNACE

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

**Asking \$39,000 USD.**





## ITEM # C265

### SUNBEAM PUSHER CARBURIZER

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

**Asking \$40,000 USD.**



# DRAW/TEMPER OVENS

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## *Quick Jump To Items:*

**Item # T354** Surface Combustion "Super 30" Temper

**Item # T353** Surface Combustion "Super 30" Temper

**Item # T352** Pyradia Oven 48" X 48" X 48"

**Item # T351** Mesh Belt Temper Furnace

**Item # T349** Recirculating Box Type Draw Furnace

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

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

**Item # T341** Temper Furnace

**Item # T340** Safed/Borel Annealing Furnace

**Item # T339** Box Tempering Oven

**Item # T336** Mesh Belt Temper Furnace 48" Wide

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

**Item # T325** 3-Station Despatch Temper Furnace

**Item # T320** Pifco Conveyor Oven

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

**Item # T303** Pifco Temper Furnace

**Item # T290** Tempering Ovens 36" X 48" X 36" (2 available)

**Item # T286** Tempering Ovens 36" X 48" X 36" (2 available)

## ITEM # T354

### SURFACE COMBUSTION "SUPER 30" TEMPER

**Surface Combustion "Super 30" temper.** Model HFC 36-54, Serial number BX 37159-7. Gas fired, maximum operating temperature of 1400F. The unit needs some minor brick work and the circulation fan reinstalled to be ready to run. The fan was removed from service, has a new shaft which has been balanced. Footprint; 9' 7" Deep x 6' Wide x 141" High (door frame only). Weight capacity is 2000 lbs. Installed and overall in good condition.

**Asking Price \$15,000 USD**



## ITEM # T353

### SURFACE COMBUSTION "SUPER 30" TEMPER

**Surface Combustion "Super 30" Temper.** Model HFC 36-54, Serial number BC-39843-1. Maximum temperature of 1400F. Gas fired. Footprint; 10' Deep x 6'-8" Wide x 141" Tall (door frame only) weight capacity is 2000 lbs. Currently installed. Complete and in very good condition.

**Asking Price \$22,500 USD**



## ITEM # T352

### PYRADIA OVEN 48" X 48" X 48"

**Pyradia Oven 48" X 48" X 48".** Electrically heated oven manufactured by Pyradia. Model P06P048048048HMTGV, Serial Number 2002-12-15977-1. Working dimensions of 48" X 48" X 48". Operating temperature of 1200F. Recirculating fan. 600 volts, 3 phases, 54KW. Vertical lift Door with double pivots. Convection style, 32,000 CFM. Built in 2004 this oven has been used for a total of 40 hours and should be considered like new.

**Asking Price \$39,000 USD**



**ITEM # T351**

## **MESH BELT TEMPER FURNACE AVAILABLE**

**Mesh Belt Temper Furnace Available.** Manufactured by Electric Furnace Company in the early 1980's. Gas fired with one burner, recirculating fan. Operating temperature of 1200F. 48" wide belt, rated for 3,000 pounds per hour. 480V. 24' heated length. Currently installed and in operation. Good overall condition.

**Asking \$20,000 USD.**



**ITEM # T349**

## **RECIRCULATING BOX TYPE DRAW FURNACE**

**Recirculating Box Type Draw Furnace.** Manufacturer: Eclipse. Inside Dimensions: 30"high x 42"wide x 96"deep. Heated: Gas fired. Temperature: 1250 deg.F. Model Number:



Box Draw. Serial Number: 3424-00773. Temperature Controls: Updated controls, Honeywell indicating controller and overtemp, circular chart recorder. Description & Features: Vertical lift air operated door. Brick lined. Alloy roller rail hearth. Seven adjustable roof baffles. Rear combustion chamber with atmospheric burner and high velocity recirculating fan. Complete combustion controls and safeties. Includes manual load table. Condition: Very Good, Operational.

**Asking Price: \$39,500.00**



## ITEM # T343

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

**Batch Temper 36"W X 36"H X 96"L.** Manufactured by Wisconsin Oven, Model SDB-6616-10G, S/N 033899307. Natural gas fired, 1 MBTU's/hour. Maximum temperature rating 1000F. Voltage 480/3/60/16 amps. External dimensions of 96" wide X 13' 4" high assembled (10'6"H shipping) x 11'L. Controls; Mounted and wired in an enclosure with fused disconnect attached to the side of the furnace. Temperature controls consist of a digital Barber Colman 560 digital for temperature and a Barber Colman digital "Limitrol" 75L high limit. ATC process timer to control heating cycle. Allen Bradley switches for control power, circulation fan, ignition and gas valve reset. Signal lights for control power, air flow, high/low gas pressure, purge, etc. Eclipse package burner with Honeywell flame safety, UV scanner and spark ignition.

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

**Asking \$49,900.00 USD.**



## ITEM # T342

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

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

**Asking \$16,500 USD.**



## ITEM # T341

### TEMPER FURNACE

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

**Asking \$91,000 USD.**



## ITEM # T340

### SAFED/BOREL ANNEALING FURNACE

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

**Price on request.**



## ITEM # T339

### BOX TEMPERING OVEN

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

Overall dimensions of 13'2" Wide x 23' Long x 17'8" High (includes Door Structure). Approximate weight of 32,000 pounds. Excellent condition.

**Asking price is \$72,500 USD.**



### ITEM # T336

## MESH BELT TEMPER FURNACE 48" WIDE

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

**Asking \$29,500 USD.**



### ITEM # T335

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

**Batch Oven 37"H X 37"W X 25"D.** Batch type recirculating oven manufactured by Despatch, Model V-29-STD. Inside dimensions of 37" high X 37" wide X 25" deep. Electrically heated 480/3/60, 12 KW. Serial number 126552. Temperature Controls:



Partlow indicating controller and Honeywell overtemp, timer. Double swing open doors. Side mounted recirculating fan. Adjustable horizontal air flow. Provisions for 12 shelves, 4 shelves included. Powered exhaust blower. Oven has been checked out and test fired and is ready for immediate shipment. Excellent condition.

**Asking \$8,000.00 USD.**



**ITEM # T325**

## **STATION DESPATCH TEMPER FURNACE**

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

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



**ITEM # T320**

## **PIFCO CONVEYOR OVEN**

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

**Asking Price: \$59,000 USD.**



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**ITEM # T318**

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

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

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

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

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

**Asking Price: \$72,500 USD each.**



## ITEM # T303

### PIFCO TEMPER FURNACE

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

**Asking Price: \$38,000 USD.**



## ITEM # T290

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

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

**Please call for pricing.**



**ITEM # T286**

## **LINDBERG BOX TEMPER**

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

**Asking Price: \$65,000 USD**





# GENERATORS

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## *Quick Jump To Items:*

**Item # G201** Ammonia Dissociator 250 SCFH

**Item # G198** Endothermic Generator 3000 CFH

**Item # G197** Ammonia Dissociator 1000 CFH

**Item # G196** Surface Combustion 5000 CFH Endo Generator

**Item # G189** Surface Combustion 2400 CFH Endo Generator

**Item # G178** Ammonia Dissociators 3000 CFH

**Item # G176** Surface "Multi-Bottle" Endo Generators

**Item # G173** Lindberg Endo Generator 4500 CFH

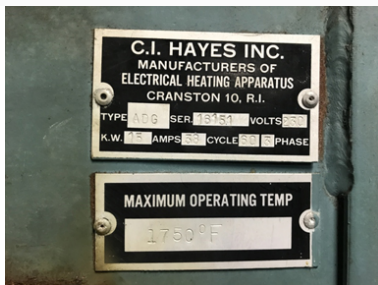
**Item # G169** Gasbarre Endo Generator 3000 CFH

## ITEM # G201

### AMMONIA DISSOCIATOR 250 SCFH

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

**Best Offer**



## ITEM # G198

### 3,000 CFH ENDOTHERMIC GENERATOR

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

**Asking \$22,500.00 USD.**



## ITEM # G197

### AMMONIA DISSOCIATOR

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

**Asking Price \$11,500.00 USD.**



## ITEM # G196

### SURFACE COMBUSTION 5000 CFH ENDO GENERATOR

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

**Asking \$31,500.00 USD.**



## ITEM # G189

### SURFACE COMBUSTION 2400 CFH ENDO GENERATOR

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

**Asking \$59,000 USD.**



## ITEM # G178

### AMMONIA DISSOCIATORS (4 AVAILABLE)

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

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

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

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

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

**Asking \$29,500.00 USD each.**



**ITEM # G176**

## **SURFACE "MULTI-BOTTLE" ENDO GENERATORS**

**Surface "Multi-Bottle" Endo Generators.** Manufactured by Surface Combustion. Natural gas heated 675 CFH/HR. Model # RX 35-75-3V. Maximum temperature 1950F. 7500 CFH



capacity. Controls are complete, water cooled. SSi atmosphere controls and Atmosphere Engineering "Endo Injector". Very good condition, ready to go.

**Asking \$75,000 USD.**



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### ITEM # G173

### LINDBERG ENDO GENERATOR

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

**Asking \$17,500.00 USD.**



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### ITEM # G169

### GASBARRE/SINTERITE FURNACE DIVISION ENDO GENERATOR

**Gasbarre/Sinterite Furnace Division Endo Generator.** 3000 CFH, electrically heated 460/3/60/63 Amps/50kW. New in 2006. External dimensions of 106" wide x 75" deep x 116" high. Controls are enclosed in a panel attached to the side of the generator. Honeywell UDC 3200 digital temperature controller and Honeywell UDC 2500 digital high limit safety. Control switches with indicating lights are flush mounted in the enclosure. Flange mounted fused disconnect switch for control power. Separate non fused disconnect for the main power. Waukee flow meters are manifold mounted for incoming and outgoing gases. Flow

meters include: Natural Gas 0-1000 CFH, Air 0- 2500 CFH, (3) Mixed Gas 0-1500 CFH and Endo 0- 3500 CFH. Step down transformer for reduced voltage to the heating elements. Electrically heated 3 retort generator. Refractory lined shell with vertically mounted retorts. Total of twelve (12) silicon carbide heating elements, 6 on each side are mounted through the chamber for good uniform heating of the alloy retorts. The natural gas and air pass through a Waukee "mixer" valve then into the Waukee gas pump. Mixed gas enters the 3 "mixed gas" flow meters, through the Sela 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 HEATING SYSTEMS

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***Quick Jump To Items:***

**Item # I178** Inductoheat Pick & Place Induction System 100kW

**Item # I177** 2 Station 24" Single Spindle Scanners

**Item # I175** Inductoheat /Lepel Induction Power Supply

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

## ITEM # I178

### INDUCTOHEAT PICK & PLACE INDUCTION SYSTEM 100KW

**Inductoheat Pick & Place Induction System 100kW.** Used Inductoheat Automated 100kW, 400 khz pick and place heat treating machine. This machine has been taken out of production due to completion of a contract. It is in good working condition and is still connected to power. It can be run for the buyer prior to shipping. It was used to harden a gear part 45" in dia. Could possibly be retooled for different part processing within the limits of the machine capabilities. This machine includes a SOLID STATE TRANSISTOR (Thermatool) power supply. These are very heavy-duty power supplies which are generally made by Thermatool for tube welding operations that usually run 24/7. This machine includes:

- Input conveyor with gating and part pickoff locator.
- Three arm Pick and Place mechanism that picks one part from the infeed position, one part from the heating position and one part from the cooldown station. All are transferred at the same time.
- Head Position includes placement into the heating coil, air operated part hold down, rotation, heating and quenching. Quick Change Coil Adapter is also included.
- Cooldown/Exit Idle position includes cooling quench flow.
- Exit position with push off onto exit conveyor with reject station
- Auto Lube System • Quench cooling and recirculating system with bag filter
- Water cooling and recirculating system.
- PLC Control with Panelmate interface

- Most Drawings and DVD Manual Included.
- Optional 6 Ton Chiller available.



## ITEM # I177

### 2 STATION 24" SINGLE SPINDLE SCANNERS

This is an integrated **Ajax 2 Station** (single spindle per station) 150 kW, 10 kHz Scanner System. It has a single SCR type power supply with a transfer switch to send power to station A or B. It has a single shared Quench Recirculating System with bag filter, single shared Water Recirculating System. Each station has a PLC Control and servo control. PLC is A/B SLC 5/03, Pacific Scientific Servos, and Nematron MMI. Also has Quick Change Coild Adapters (would cost about 4-5k today). This was built in 1998 but appears to have been well maintained and contains currently serviceable components.

**Asking Price: \$99,500 USD**



## ITEM # I175

### INDUCTOHEAT /LEPEL INDUCTION POWER SUPPLY

**Inductoheat /Lepel Induction Power Supply.** This is a Lepel/ Inductoheat SP5-40 kW, 3/10 kHz SCR type induction heating power supply with a separate Heat Station (I believe



this could be operated at 3 kHz but the heat station is currently arranged for 10 kHz). This is an “HS-3” Heat Station with 3 capacitors and a Jackson Transformer with ratios of 5-3 to 17-3. The Inductoheat SP5 has been a proven reliable power supply for heating and heat treating for many years. It can be used for short heat times as it has fast and consistent ramp up to set power. There is no warranty but it is sold with the assurance it is in good working order. It has recently been connected and tested in our facility. I can supply a video of the unit in operation. Start up and Training service is available at extra cost by an experienced induction heating service engineer. Excellent condition.

**Asking \$19,500.00 USD**



#### ITEM # I174

### AJAX/TOCCO INDUCTION HEATING POWER SUPPLY & HEAT STATION

**Ajax/Tocco Induction Heating Power Supply & Heat Station.** Manufactured by Ajax/Tocco in August 2005. 480V three phase input is rated to be 1.2MW (1200KW). 660V three phase input is rated to be 2.2MW (2200KW). Unit requires three phase input of 480V, 2500A. System is designed to work at 2.5 kHz in frequency. Requires 65 GPM of cooling. Buyer must have a dedicated transformer at the three phase input for this machine. Buyer must provide their own coils, bus, and water-cooled cables to attach power supply to heat station and heat station to coils. Limited warranty available. Note: Currently set up to work at 480V input voltage. In order to switch to 660V, buyer needs to change the input breaker. Excellent condition.

**Asking \$129,000 USD.**



# LAB EQUIPMENT

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***Quick Jump To Items:***

**Item # L8** Tensile Testing Machine

**Item # L7** Leco Micro Hardness Tester

**Item # L3** Laser Diffraction Particle Size Analyzer

**Item # L1** Detroit Testing Brinell Hardness Tester

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## ITEM #L7

### LECO MICRO HARDNESS TESTER

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

**Asking \$7,000.00 USD.**



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## ITEM #L3

### LASER DIFFRACTION PARTICLE SIZE ANALYZER

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

**Asking \$20,000** for complete system.



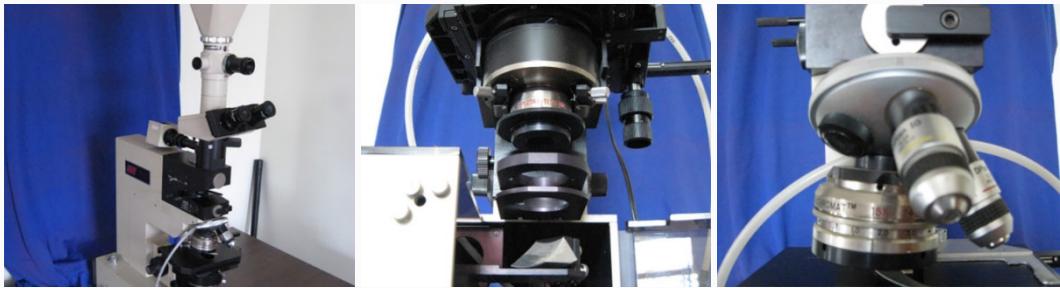
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## ITEM # L1

### SPECTRA-TECH 0044-003 INFRARED MICROSCOPE

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

**\$6,500.00 USD.**



# MISCELLANEOUS HEAT TREAT EQUIPMENT

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## ***Quick Jump To Items:***

**Item #M423** Dunk/Spray Washer 36" X 72" X 36"

**Item #M422** Dunk/Spray Washer

**Item #M421** Berg Chiller

**Item #M420** SBS "Quench Airs", (9 available)

**Item #M417** Soluble Oil Dunk Tank

**Item #M416** Wheelabrator 6' Diameter

**Item #M415** Surface Combustion Parts Washer

**Item #M414** Vacuum Residual Gas Analyzer (3 available)

**Item #M412** Atmosphere Engineering "Endoinjector"

**Item #M411** SBS Quench Oil Coolers (2 available)

**Item #M408** Surface Combustion Power Loading Table 30" Wide

**Item #M406** Surface Combustion Parts Washer

**Item #M400** Nitrogen Generating System 99.999 Purity

**Item #M396** Surplus Cast Link Belt HT Material

**Item #M381** Water Cooling System

**Item #M380** Bronco Wheelabrator 36" Meshbelt

**Item #M366** Wheelabrator Rubber Belt Tumblast

**Item #M363** SBS Large 3 Fan Unit

**Item #M348** Ipsen Dunk/Spray Washer 36" x 48" x 24"

**Item #M346** SBS Quench Air Single Fan Unit

**Item #M341** AFC Charge Car 36" x 48" Tray

**Item #M334** Berg Water Chiller Nearly New

**Item #M314** Holcroft Dunk/Spray Washer 24" x 24" x 36"





## ITEM #M423

### DUNK/SPRAY WASHER 36" X 72" X 36"

**Williams Industrial Dunk/Spray parts washer.** Working dimensions of 36" X 72". X 36". Gas fired, capable of 210F. 30A, 3 Phase. Built in 1993. Footprint; 71"Wide x 126"Deep x 196". Weight capacity 5,000 pounds. Oil skimmer not included. Installed, complete and in very good condition.

**Asking Price \$29,000 USD**



## ITEM #M422

### DUNK/SPRAY WASHER 36" X 48" X 36"

**Dunk/Spray Washer 36" X 48" X 36"**. Manufactured by Surface Combustion this is a Dunk/Spray batch IQ washer with working dimensions of 36" X 48" X 36". Electrically heated.

**Asking \$22,500 USD.**



## ITEM #M421

### BERG CHILLER

**Berg Chiller.** Brand: Sterling. Model: GPAC-20 (2014 mfg. year). Capacity: 5 ton. Voltage: 460V/3/60. In good condition.

**Asking Price: \$8000.00 obo**



## ITEM #M420

### SBS "QUENCH AIRS", (9 AVAILABLE)

**SBS "Quench Airts", (9 available).** We have available 9 SBS air to oil quench oil coolers "Quench Air". These are all in good condition and range in size from 2' long up to 10' long with a total of 5 different models. All are 460V. Asking from **\$1,000 USD** for the 2' units up to **\$5,000 USD** for the 10' long model.



## ITEM #M417

### SOLUBLE OIL DUNK TANK

#### **Soluble Oil Dunk Tank**

Working dimensions of 30" X 48" X 30". Tank has a capacity of 2500 pounds. Includes chart recorder, cooler, recirculation pump, and controls. This could easily be modified or used to water quench aluminum. Good condition.

**Asking \$8,000 USD.**



## ITEM #M416

### WHEELABRATOR 6' DIAMETER

**Wheelabrator 6' Diameter.** 6" Diameter table blast wheelabrator. 30 HP belt drive. Installed and in use until March 2018. Recently reconditioned with rebuilt auger. Brand New wheel and wheel housing. Good controls with pneumatic operated control and timer to shut down wheel and notify operator when cycle is complete. Very reliable machine in excellent condition. Table is mounted on the door with full access for overhead crane.

**Asking \$75000.00 USD.**



## ITEM #M415

### SURFACE COMBUSTION PARTS WASHER

**Surface Combustion Parts Washer.** Manufactured by Surface Combustion of Ohio this is a spray washer with working dimensions of 30" X 48" X 30" high. Radiant tube gas heat and rotary drum oil skimmer and separate skim tank located on back of wash. This is partially reconditioned . It is in overall good condition.

**BEST OFFER**



## ITEM #M414

### VACUUM RESIDUAL GAS ANALYZER (3 AVAILABLE)

**Vacuum Residual Gas Analyzer (3 available).** Pfeiffer Vacuum PrismaPlus QMG220 Compact Mass Spectrometer, Mass Range 1-200 amu, Catalog # PT M06 211 111, Residual Gas Analyzer. Unused these were new in Dec. 2015 and are still in original factory packaging. Warranty expired, but still factory supported. Each set consists of the following;

1. 1 Each, Quadrupole electronics QME220, P/N PTM28612
2. 1 Each, Quadrupole analyzer QMA200, P/N PTM25253
3. 1 Set, QMS220, Accessories & Spare Parts
4. 1 Each, SP 220, (033-0038 43202) Power Supply 90-264VAC, 2.1mm R/A (24 V Output)
5. 1 Each, 45-0007 43024 UTP-Patch-Cable, 3m, Crossed, Red
6. 1 Each, B4564309YX Inficon Mains Cable (USA) LNPE, AWG 18, 2.5m
7. 1 Each, 45-0006 UTP-Patch-Cable, 3m, 1:1, grey 43024
8. 1 Each, PT882400-T Quadera-software, Version 4.61 12/10/2015 for Windows 7 or XP (32-bit Pro)
9. 2 Each, PrismaPlus QMG220 Operating Instructions (1-English & 1-German)
10. 1 Each, Test Reports and Configuration
11. 1 Each, PT R 26 002 Compact Full Range Vacuum Gauge PKR 251, DN 40 CF F
12. 1 Each, PT 448 250-T Sensor Cable

**Price: \$8,800/Set (3 Available) Free Shipping included in price**



## ITEM #M412

### ATMOSPHERE ENGINEERING "ENDOINJECTOR"



**Atmosphere Engineering “Endoinjector”** 3 year old Atmosphere Engineering Endoinjector for controlling output on an endothermic generator. S/N 0601-DP1, Endo Output 600-3000 CFH. Includes PLC. Good condition and less than a third of the price of new.

**Asking \$6,500.00 USD.**



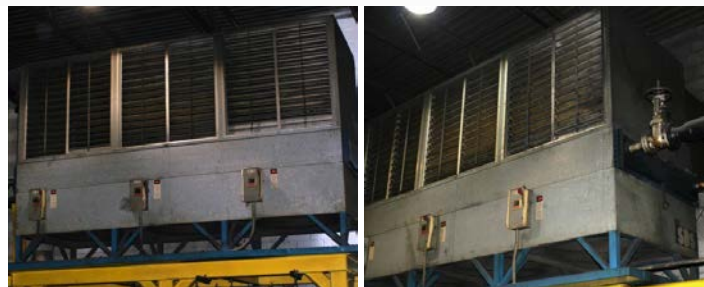
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### ITEM #M411

### SBS QUENCH OIL COOLERS (2 AVAILABLE)

**SBS Quench Oil Coolers (2 available).** Air to oil quench oil coolers manufactured by SBS Corporation. 480V/6/60. External dimensions of 6' wide X 5' high X 21' long. This unit has three (3) NEMA type disconnect switches mounted on side of unit. Standard “SBS Quench Air” air cooled heat exchanger with removable tube manifold, propeller fans for moving air across the tube bundle, flanged inlet & outlets, three (3) NEMA type disconnect switches mounted on the side of the heat exchanger. This unit has a removable top that has louvers for directing the air horizontally instead of vertically. Good condition.

**Asking \$13,500.00 USD Each.**



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### ITEM #M408

### SURFACE COMBUSTION POWER LOADING TABLE 30" WIDE

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

**Asking Price: \$1,000 USD**



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**ITEM #M406**

**SURFACE COMBUSTION PARTS WASHER**

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

**Asking price of \$12,500 USD**

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**ITEM #M400**

**NITROGEN GENERATING SYSTEM**

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

**Asking \$82,500.00 USD.**



## ITEM #M396

### SURPLUS CAST LINK BELT

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

**Please call for pricing – Gord: 905.271.0033**



## ITEM #M381

### WATER COOLING SYSTEM

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

**Asking \$7,500.00 USD.**



## ITEM #M380

### WHEELABRATOR – BRONCO

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

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



### ITEM #M366

### WHEELABRATOR RUBBER BELT TUMBLAST

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

**Asking: \$55, 000.00 USD.**



### ITEM #M363

### SBS UNIT

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

**Price: \$15,500.00.**





## ITEM #M348

### IPSEN AUTOMATIC DUNK/SPRAY WASHER

**Ipsen Automatic Dunk/Spray Washer.** Model #WRD-11, Serial Number 57690. Working dimensions of 36" wide X 48" deep X 24"+ high, 2200 pound capacity. Electrically heated, 72KW. Companion washer-In/Out or straight through design. Door each end, Cal Rod element bundle. 12" wide belt oil skimmer, air operated-full width elevator rack for submerged oscillation, overhead spray rinse. Overall dimensions of 7' 5" wide X 5' 4" long X 11' 8" high. Rebuilt,

**Excellent condition asking \$35,000 USD.**



## ITEM #M346

### SBS "QUENCHAIR"

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

**Asking \$5,500.00 USD.**



## ITEM #M341

### AFC CHARGE CAR

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

**Asking \$28,500.00 USD.**



## ITEM #M334

### BERG WATER CHILLER

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

**Asking \$5,500.00.**



ITEM #M314

## HOLCROFT DUNK/SPRAY WASHER

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

**Asking \$18,500.00 USD.**



# VACUUMS FURNACES

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

[Contact Us](#)

## *Quick Jump To Items:*

- Item # VF343** Bottom Loading Vacuum Furnace
- Item # VF342** Ipsen Bottom Load Vacuum Furnace 48" X 54"
- Item # VF341** Ipsen VFC-424-R Vacuum Furnace
- Item # VF340** Vac Aero 2 Bar Vacuum Furnace
- Item # VF339** Centorr Vacuum Furnace
- Item # VF337** Oil Quench Vacuum Furnace
- Item # VF336** C.I. Hayes Vacuum Furnace
- Item # VF335** ALD Vacuum Carburizing Furnace
- Item # VF334** Degussa Vacuum Hardening Furnace
- Item # VF333** Low Temperature Vacuum Tempering Furnace
- Item # VF332** IVA Vacuum Furnace 6 Bar
- Item # VF331** High Temperature Vacuum Furnace 2300°
- Item # VF330** Surface 2-Bar Quench Vacuum Furnace
- Item # VF328** Abar Ipsen Model HS-26 Vacuum Furnace
- Item # VF327** Surface Combustion Vacuum Temper Furnace
- Item # VF326** Ipsen 924 Vacuum Furnace
- Item # VF321** Ipsen Vacuum Furnace
- Item # VF320** High Temperature Vacuum Furnace
- Item # VF319** Vacuum Induction Melting System
- Item # VF317** Twin High Temperature Vacuum HT Sintering Furnaces
- Item # VF316** AVS Vacuum Furnace 24" x 24" x 48"
- Item # VF315** AVS Vacuum Furnace (Rebuilt)
- Item # VF314** Ipsen Bottom Load Furnace 60" x 96"
- Item # VF313** Top Loading Vacuum Furnaces 2100 C
- Item # VF312** Vacuum Furnace 2400 C
- Item # VF299** Sunbeam Vacuum Furnace 36" x 120"



**Item # VF294** Vacuum Annealing Furnace 8" x 90"

**Item # VF289** Ipsen Vacuum Temper 12" x 16" x 24"

**Item # VF282** AVS Vacuum Debinding/Sintering Furnace

**Item # VF271** Sintering/De-Wax Furnace 1400 C

**Item # VF267** Semi-Continuous Titanium Diffusion Bonding Hot Press

**Item # VF266** Kinney 75 CFM Vacuum Pump

**Item # VF243** 35" Diffusion Pump

**Item # VF242** 35" Diffusion Pump

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## ITEM # VF343

### BOTTOM LOADING VACUUM FURNACE

**Bottom Loading Vacuum Furnace.** Built by Mut Advanced Heating GmbH of Germany in 2008 this is a bottom loading vacuum furnace with working dimensions of 1040 mm x height 1200 mm and a load capacity of 660 kg.

- Operation under inert gas, vacuum, and process gas
- Temperature maximum up to 2000 ° C
- Temperature uniformity +/-10 K
- Double-walled water cooled vacuum chamber
- Control Siemens S7
- Rapid cooling, including unused side channel blowers
- Graphite retort, very good condition
- Primary cooling circuit with heat exchanger
- Nominal voltage 3 X 400 V
- Power 335 kW
- Degree of protection IP 23
- Type of current AC, 50 Hz

The furnace was built for SGL Carbon Group for manufacturing ceramic brake discs and was only used for two years. It is currently in indoor heated storage in Germany. This furnace is in excellent condition and includes all drawings and documentation. New it was almost \$900,000 USD, asking \$192,000 USD packaged and loaded on a truck.

**Asking Price \$192,000 USD**



## ITEM # VF342

### IPSEN BOTTOM LOAD VACUUM FURNACE 48" X 54"

**Ipsen Bottom Load Vacuum Furnace 48" X 54".** Completely Re-Manufactured IPSEN 48" Dia x 54" High Vertical Bottom Loading Vacuum Furnace for your Heat Treating and Brazing requirements. This furnace complies and meets the SAE Aerospace Material Specification AMS2750 Latest Revision E (AMS2750E) and NADCAP. Operating temperature from 800°F (427°C) to 2400°F (1315°C). Temperature uniformity  $\pm 10^{\circ}\text{F}$  ( $\pm 6^{\circ}\text{C}$ ) between 1004°F (540°C) to 2400°F (1315°C). Equivalent to Class 2 Furnace in AMS2750E standards. Circular one-piece gas plenum/hot zone support structure provides strong, uniformly expanding support for elements Work Zone Dimensions are 48" (1219 mm) Diameter x 54" (1372 mm) High. Hot Zone Insulation is composed of the following layers:

Hot Face

First Layer

Second Layer

- 0.060" Thick Graphite Foil with CFC Sheet at ends
- 1.00" Thick High Purity Graphite Felt
- 1.00" Thick High Purity Graphite Felt

Hearth gross load weight capacity of 3000 lbs (1361 kilograms) at 2400°F (1316°C). Ultimate Vacuum (nominal) 10-5 Torr Range. Re-manufactured Stokes 412H-11, 300 C.F.M. (8,500 litres per minute) mechanical roughing pump. Re-manufactured Stokes 900-615, 2,000 C.F.M. (56,600 litres per minute) as blower pump. Re-manufactured Varian NHS-35" Diffusion pump, pumping speed 50,000 litres per second. Comes with Safety Guard against hot body surfaces. New Leybold Trivac 8B, 5.7 C.F.M. (161 litres per minute) Rotary Vane Vacuum pump as holding pump. New Oil Mist Filter System for pumping system exhaust. One (1) Re-manufactured External 4400 CFM 50HP Spencer Turbine Co. Gas Fan Cooling Motor and heat exchanger system. One (1) Re-manufactured step-up transformer for Gas Fan Motor. One (1) Backfill Reservoir Gas Tank @ 120 p.s.i.g of 5,000 litres capacity. Argon Quenching To Maximum 2 Bar. Consider this basically a new furnace with a 12 month warrantee. Asking \$525,000 USD with start up and training included. Half the price of new.

**Asking Price \$525,000 USD**



## ITEM # VF341

### IPSEN VFC-424-R VACUUM FURNACE

Manufactured by **Ipsen this is a Model VFC-424-R vacuum furnace**. Serial number 59089, built 8-83. Working dimensions of 24" x 36" x 18". 460 Volts, 3 PH, 60HZ. 142 Amps Max PWR Current. 112.5 KW Max PWR Input. Stokes vacuum pump Model 212-11, S/N 0086100. Loader and base tray included. Unit is complete, installed and under power but not currently being used. Only item missing is the data recorder. Hot zone like new. Diffusion pump. Overall in very good condition.

**Asking Price \$35,000 USD**



## ITEM # VF340

### VAC AERO 2 BAR VACUUM FURNACE

**Vac Aero Model VAH 4848 HV-2**. Working dimensions of 48" X 48" X 48". Furnace includes controls, vacuum pumps (Stokes 412 roughing, 615 booster, 20" diffusion, holding), furnace quench system (gas blower, heat exchanger, gas accumulator), water cooling system (cooling tower, similar to EVAPCO LRWB).

**Asking Price \$220, 000 USD**



## ITEM # VF339

### CENTORR VACUUM FURNACE

**Centorr Vacuum Furnace.** Working dimensions of 12" X 12" X 36". Operating temperature of 2000C. All stainless steel construction (outer and inner wall) Graphite hot zone. No quench blower. Leybold mechanical pump, S/N L981300832. Ultimate vacuum of 1 micron. 1991 vintage. Good condition.

**Asking Price \$25,000 USD**



## ITEM # VF337

### OIL QUENCH VACUUM FURNACE

**Oil Quench Vacuum Furnace** (with gas quench capability at 1000 m bar). Manufactured in 2004 with working dimensions of 500 mm W x 420 mm H x 710 mm L. Loading Capacity : 280 kg. Max. Temperature : 1250 deg C. Heating Power : 100 kW. Vacuum Level : 10exp-1 mbar range.

**Price : 120.000 Euros.** (quench oil and loading truck included, located in Turkey)





## ITEM # VF336

### C.I. HAYES VACUUM FURNACE

**C.I. Hayes Vacuum Sealed Quench Furnace Model:** VSQ-182436; S/N: 16007. Working Dimensions: 18" High x 24" Wide x 36" Long. Graphite Heating Elements. Max Operation Temp: 2400°F (1093°C). Temperature Uniformity: 25°F Total Spread. Connected Load: 90 KVA. Total Load: 120 KVA. Gas Backfill Requirements: 160 SCF. Typical Loading and Quenching Capacity: 500 lbs. at 1600°F. Quench Tank Capacity: 685 Gallons. Compressed Air Requirements: Small Demand at 100 psig. (must be maintained at  $\pm 10\%$ ). Sight Port: 5" Dia. Hearth Level: 25-1/4". Cooling Water: 5-15 GPM (60°F). Quenching Speed: <10 Seconds (heating chamber into quench tank). Furnace needs work in order to run parts. System was originally installed with a Stokes 412 vacuum roughing pump.

**Asking Price: \$20,000**



## ITEM # VF335

### ALD VACUUM CARBURIZING FURNACE

**ALD Vacuum Carburizing Furnace.** Working Dimensions 400 mm Wide x 400mm Deep x 400 mm high. Weight Capacity : 80 kg max. Cooling Fan Motor : 75 kW, 3000 rpm for 10 bar N<sub>2</sub>. Vacuum System : Leybold SV100 Mechanical Pump. Leybold WA501 Roots Pump. Leybold E250 Mechanical Pump. Leybold WA1001 Roots Pump. Vacuum Level : <5x10<sup>-2</sup> mbar. Leak Rate : <5x10<sup>-3</sup> mbar l/s. Heating Zone : 120 kW, 2 zones. Plasma Chamber : 60 kW, 1 zone. Diffusion Zone : 180 kW, 3 zones. Max. Temperature : 1250 °C (Heating chamber). Operating Temperature : 800-1100°C. Process Gases : Nitrogen,

Methanol, Argon, Hydrogen. Installed Power : 700 kVA, 3x400V 50 Hz. Built in 2002. Currently in storage in Germany. Complete and in very good condition.

**Price: FOT/Germany : 75.000. Euro**



### ITEM # VF334

## DEGUSSA VACUUM HARDENING FURNACE

**Degussa Vacuum Hardening Furnace.** Year of construction 1990. The furnace name is VKSQ 80/80/120. The maximum temperature is 1350 °C, the max. The load is 1500Kg gross, the heating capacity is 250kW, the working space is 800x1200x800mm, the permissible pressure of the system is 6bar absolute and the furnace has the possibility of convective heating. The furnace control was renewed a few years ago (Demig). Located in Germany.

**Price : FOT / Germany Euro 60.000**



### ITEM # VF333

## LOW TEMPERATURE VACUUM TEMPERING FURNACE

**Low Temperature Vacuum Tempering Furnace.** Maximum temperature is 500 C. Located in Turkey.

**Price : FOT/Germany Euro 28.000**



## ITEM # VF332

### IVA VACUUM FURNACE 6 BAR

**IVA Vacuum Hardening Furnace.** Useful Dimensions: W300xL500xH300 mm. Capacity: 100 kg. Max. Temperature: 1300 C. Temperature Uniformity: +/- 5 C. Heating Power: 50 kW. Vacuum Level:  $10^{-2}$  mbar. Cooling Pressure: 6 bar. Year of Manufacturing: 1993. Located in Turkey.

**Price : FOT/Germany Euro 28.000.**



## ITEM # VF331

### HIGH TEMPERATURE VACUUM FURNACE 2300

**High Temperature Vacuum Furnace 2300.** Manufactured by Elnik this is a MODEL T-3000 unit, built in 1993. The vacuum furnace consists of a watercooled cylindrical chamber, a molybdenum hot zone with tungsten heaters, a roughing pump, a holding pump, a diffusion pump, a heat exchanger assembly, and all associated valving.

- The furnace runs on 480 volts
- Stokes roughing pump Model 148 H-9
- Holding pump (Walsh) 1402
- Varian diffusion pump – VHS-6
- Water system – Model WCS 305-ET with a 300 gallon stainless steel recirculating tower model 1CT4-64
- 2300F operating temperature



- Ut35 temperature controller controls the temperature of the furnace as programmed by the operator via the computer's profiler utility
- Complete and in Good Condition

**Asking \$19,950.00 USD**



**ITEM # VF330**

## **SURFACE 2-BAR QUENCH VACUUM FURNACE**

**Surface 2-Bar Quench Vacuum Furnace.** Model# HVPI 484824. Maximum Temperature: 2400F. Power requirements: 460/3/60, 275 KW. Hot Zone Dimensions: 48" Wide x 48" Deep x 24" High. External Dimensions: 12' Wide x 12' Deep x 11' High. Features: Horizontally Loaded Vacuum Furnace complete with 412 Stokes Vacuum Pump, Roots 615 Booster Pump, 2 Bar Quenching, Graphite Heating Elements, "Autoclave" Style Swing-Out Front Door, and Powered Big Joe Loader. Also Included is (1) Crate of New Spare Heating Elements and Connectors. Controls: Free-Standing Control Panel complete with Marathon Monitors Digital Temperature Controller, Honeywell Digital High Limit, and Honeywell Round Chart Recorder. Condition: Very good – Operational. Approx. Weight: 25,000 lbs

**Asking Price: \$119,000**



**ITEM # VF328**

## **ABAR IPSEN MODEL HS-26 VACUUM FURNACE**



**Abar Ipsen Model HS-26 Vacuum Furnace.** Model HS-26 Abar Ipsen vacuum furnace. Working dimensions of 24" wide X 18" high X 36" deep. Working capacity of 750 pounds. Stocks vacuum pumps and Varian Diffusion pump. 1 zone of temperature control. Honeywell controllers with Honeywell paper chart recorder. MKS vacuum instruments. Operating temperature of 2400F. 480 volts. Was used in an aerospace facility before it was very recently removed. Complete. Please ask for pricing and more details.

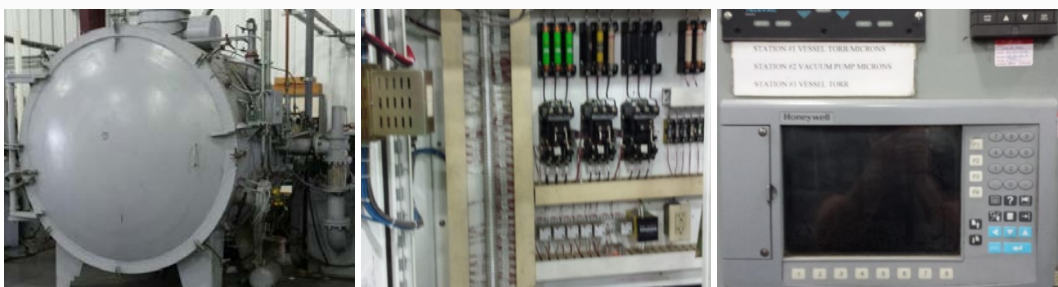


ITEM # VF327

## SURFACE COMBUSTION VACUUM TEMPER FURNACE

**Surface Combustion Vacuum Temper Furnace.** Working dimensions of 36" x 48" x 24" and is approximately 23 years old. The equipment is in good condition with Honeywell HC900 Controls, Telvac Vacuum Control & Sensors, Honeywell UDC 2000 overtemp control, Stokes 412 Vacuum Pump, Controls Concepts SCR, McLeen Cabinet Cooler. Brand New Heating Elements ready to be installed. Internal Fan Circulation. This unit was pulled from service to make room for a new Vacuum furnace just recently. Max Temp 1500° F, 480 Volt / Three Phase.

**Asking Price: \$50,000 USD**



ITEM # VF326

## IPSEN 924 VACUUM FURNACE

**Ipsen 924 Vacuum Furnace.** Ipsen VFC-924-R Vacuum Furnace. Working dimensions of 32" wide X 53" deep X 26" high. Maximum operating temperature of 2400F, recently

surveyed from 1400-2000F at +-25F. Stokes vacuum pumps and Varian Diffusion pump. One zone of control. Honeywell controllers. Good operating condition, currently installed but not in use. 480 Volts.

**More details and asking price available upon request.**



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## ITEM # VF321

### IPSEN VACUUM FURNACE

#### **Ipsen Vacuum Furnace:**

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

**Price: \$58,000 USD.**



## ITEM # VF320

### HIGH TEMPERATURE VACUUM FURNACE

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

**Asking \$100,000 USD for everything.**



## ITEM # VF319

### VACUUM INDUCTION MELTING SYSTEM

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

**Asking \$285,000 USD.**

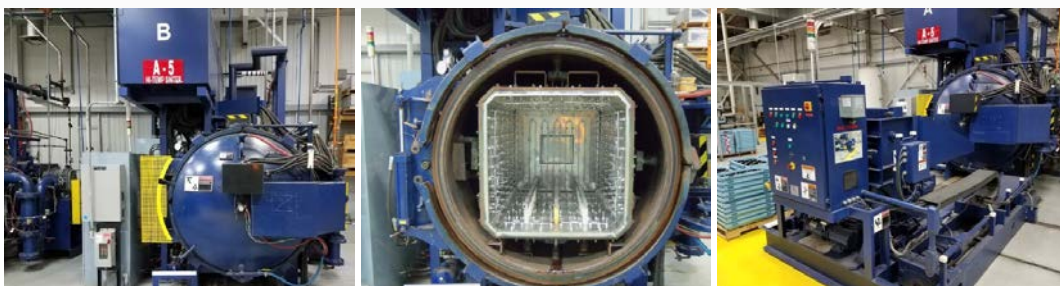


## ITEM # VF317

### TWIN HIGH TEMPERATURE VACUUM HT & SINTERING FURNACES

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

**Asking \$275,000 USD for Both.**





## ITEM # VF316

### AVS VACUUM FURNACE

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

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



## ITEM # VF315

### AVS VACUUM FURNACE (REBUILT)

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

**Asking \$195,000 USD.**



## ITEM # VF314

### IPSEN BOTTOM LOAD VACUUM FURNACE

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

**Asking Price: \$325,000 USD.**



## ITEM # VF313

### TOP LOADING VACUUM FURNACES (6 AVAILABLE)

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

**Asking \$175,000 USD each.**



## ITEM # VF312

### 2400C VACUUM FURNACE

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

**Asking \$149,000 USD.**



## ITEM # VF299

### SUNBEAM VACUUM FURNACE

**Sunbeam Vacuum Furnace.** Model # 40236, Serial Number F-170-82. Working dimensions of 36" wide X 120" long X 36" high. Maximum operating temperature of 2552F (1400C). 460 volts, 400Kw, 3 phase. Honeywell digital program control, Honeywell digital overtemperature control, Honeywell strip chart (inoperative) and Granville-Phillips 375 Convectron vacuum controller in enclosed panel. Double walled water cooled horizontal load vessel. Interior has a molybdenum liner with graphite heating elements on both walls, roof and floor. 20 HP cooling fan mounted in rear. Pumping system consists of a Stokes



412-11 mechanical pump with Roots booster. Power to the heating elements is through VRT's. A battery powered loader is included. Some of the heating elements were damaged during shipment and will need to be replaced by buyer.

**Asking Price: \$95,000 USD.**



**ITEM # VF294**

## **VACUUM ANNEALING FURNACE**

**Vacuum Annealing Furnace.** Manufactured by Thermionics this is a custom designed vacuum annealing furnace designed to heat treat wire up to 210 cm long. The vacuum chamber has an 8" Dia. X 90" effective working length. The operating temperature was developed for a maximum operating temp of 1200° F, The vacuum nominal level (continuous) duty was developed as  $1 \times 10^{-6}$  Torr. Maximum vacuum level to operate in continuous duty is  $5 \times 10^{-8}$  Torr. The unit was designed to use N<sub>2</sub> 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**

**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<sup>-1</sup> mbar, operating pressure 1000 mbar. Maximum vacuum level 5.0 X 10<sup>-2</sup> mbar. Circulated nitrogen atmosphere gas. Elements Cr-Ni Steel. Stokes model 149H vacuum pump. SS hot zone. Class 3 furnace with a temperature uniformity of +/- 8C. Used in an aerospace heat treat facility until it was replaced with a new furnace. Complete although missing the temperature recorder. Included are a manual loader and 3 baskets. Excellent condition.

**Asking Price: \$59,500 USD.**



## ITEM # VF282

### AVS VACUUM DEBINDING/SINTERING FURNACE

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

**Asking Price: \$169,000 USD.**



**ITEM # VF271**

## **SINTERING / DE-WAXING FURNACE**

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

**Asking Price: \$299,000 USD.**

**ITEM # VF267**

## **SEMI-CONTINUOUS TITANIUM DIFFUSION BONDING HOT PRESS**

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

Preheat Chamber. 35" diffusion pump / 100 CFM holding pump Moly Pin walking system rated for 2720 kg load 44" w x 54" d x 6.5" high product size in semi continuous mode Stokes 300 CFM mechanical pump 5 x 10<sup>-5</sup> 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

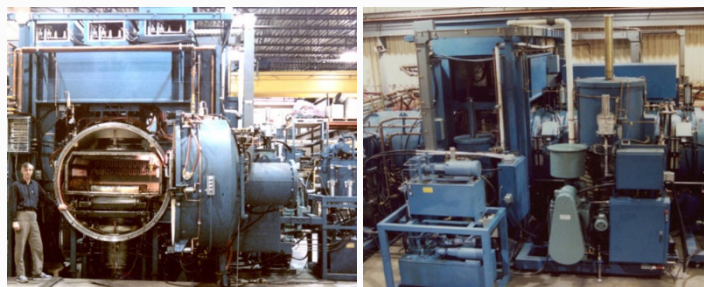
6.5" high product size in semi continuous mode Constant 1100°C Heated Platens, Moly pressing surface 1000 tons of force, up pressing ram 300 kW heater power (Hunterdon) Moly Hot Zone Mounted on roll out frame

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<sup>-5</sup> Torr in 20 minutes Fast Backfill Port Mounted on roll out frame

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

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

**As is \$890,000.00 USD**

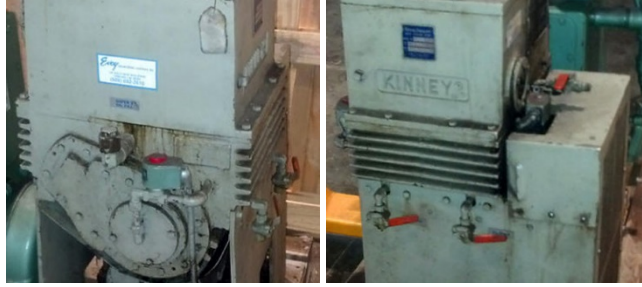


**ITEM # VF266**

## **KINNEY 75 CFM VACUUM PUMP**

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

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



## ITEM # VF243

### 35" DIFFUSION PUMP

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

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



## ITEM # VF242

### 35" DIFFUSION PUMP

**35" Diffusion Pump.** CVC Model PMC-32C, 35" Diffusion Pumps (Today this is the Varian HS-35. Varian purchased CVC rights to this pump.) Can be purchased either in As-Is condition or in Rebuilt condition with a warranty. 35" Throat Diameter. Bolt Circle is approx. 38-3/4" with 14 Holes on approx. 8-9/16" Centers. Flange O.D. is 41-3/4". O-Ring Center Diameter is 36-1/8". Approx. 72-3/4" Overall Height (79" on 48" x 48" shipping



pallet). Note: Mating 35" Cryo-Baffle is also available for improved low-range vacuum and elimination of backstreaming (See Item# 3161 Below). 6" Foreline with approx. 9-1/2" Bolt Circle with 8 Holes on approx. 3-5/8" Centers. 1/4" dia. O-ring is approx. 8-7/8" diameter to center. Shipping Wt. with pallet approx. 2050 lb.

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

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



# HEAT TREAT CENTRAL

- High Quality Low Cost Base Trays
- **Investment cast only**
- Fast Delivery for in-stock trays<sup>1</sup>
- **Surface Combustion Allcase Tray**
- UBQ Furnace Tray
- **Site-specific custom trays**
- Based on existing castings
- **No setup or pattern fees<sup>2</sup>**
- Industrial alloy grades available
- **HU, HT, Super NA22H, ...**

Please send your enquiries to:

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

<sup>1</sup>While supplies last

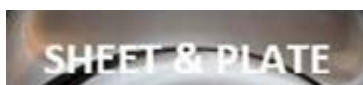
<sup>2</sup>Applies to standard design trays only. Some restrictions apply.

©Heat Treat Central

# Moly

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

**Bob and Ben Grammer welcome the opportunity to help with your requirements [Sales@gvtinc.com](mailto:Sales@gvtinc.com) Phone: 208 765-6854**



# NEW EQUIPMENT

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

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## AFC-Holcroft



**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.

<https://afc-holcroft.com/en/>

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## ALD Vacuum Systems



**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.

<https://www.ald-web.de/en/>

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## Cooley Wire Products



**Cooley Wire Products:** When it comes to fabricated 330 SS baskets we are unbeatable! A quality manufacturer of heat treating and corrosion resistant fabrications. We manufacture industry standard and custom designed baskets and fixtures. We can manufacture to your drawing, or design something based on your submitted part or part drawing.

<http://www.cooleywire.com/>

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## Custom Electric Manufacturing



**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.

<https://custom-electric.com/>

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## Dry Coolers



**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.

<http://drycoolers.com/>

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## **Grammer Vacuum Technologies, Inc. (Molybdenum)**

Grammer Vacuum Technologies, Inc. (Molybdenum): Molybdenum Mill Products, Custom Moly Fixtures and Grids, & Custom Moly Mill Products. All of these are stocked in the USA. Phone Number: 208-765-6854, [Sales@gvtinc.com](mailto:Sales@gvtinc.com).

<http://www.gvtinc.com/pages/MolybdenumProducts.htm>

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## **Graphite Materials**



**Graphite Materials** is your reliable partner for carbon and CFC (Carbon Fibre Composite) components for high temperature applications. We have years of experience designing, manufacturing and testing fixturing for high temperature applications such as vacuum furnaces and vacuum carburizing systems. Carbon and CFC components offers you a product which is light, precise and will offer years of service with no cracking or distortion. More and more heat treaters around the world are considering carbon and CFC fixtures as an alternative to fabricated and cast fixturing.

<http://www.graphite-materials.com/en/>

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## **Heat Treat Central**



Based in Michigan HTC is your supplier for high quality, low cost investment cast base trays. Investment cast trays offer you a longer service life, less porosity and tighter tolerances than standard sand cast base trays at a substantially lower cost. Standard trays available within 1 week.

<http://www.heattreatcentral.com/>

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## Idemitsu



**Idemitsu** is one of the largest suppliers in the world of Quench Oils and Polymer Quenchs. Cold, Semi-Hot or Hot quench oils- we have a product that will work for you. We are able to ship typically in less than 5 days from multiple locations around the world. You will find us fast, responsive, cost competitive and we offer free analysis of your current quench oils.

<http://www.idemitsu.com/products/lubricants/index.html>

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## South-Tek



**South-Tek.** 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. For more information on PSA Nitrogen Generators and heat treating applications, please visit:

<http://www.southteksystems.com/>

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## Super Systems



**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.

<http://www.supersystems.com/>

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# EMPLOYMENT OPPORTUNITIES

## ADVERTISING

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

### Employment Opportunities

#### *Quick Jump To Items:*

**Item # 0354** Metallurgist

**Item # 0353** Controls Engineer

**Item # 0352** Sales Positions

**Item # 0351** Metallurgical Engineer Wanted

**Item # 0350** Sales Agents Wanted

**Item # 0349** Heat Treat Engineer

**Item # 0348** 1st. Shift Maintenance Technician / Supervisor

**Item # 0345** Multiple Positions Available

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### ITEM # 0354 METALLURGIST

**POSITION SUMMARY:** There is currently an opening for a senior metallurgist in the RBC Bearings New Product and Process Development Center, located within our Oxford CT headquarters. We are looking for a corporate level, technological leader in metallurgy and materials science who is a hands-on, team player. The person will be expected to act as consultant and metallurgical expert to all divisions of RBC, as necessary, responding to queries about materials, material acceptability, specifications, failure investigations, material performance improvements and material quality issues both internal and with our supplier base. The successful applicant will be expected to take a leadership role in material development as RBC expands its current product offering into new applications with structural and environmental challenges beyond our current knowledgebase and capability. The candidate is required to have excellent inter personal and communication



skills, be a team player that is driven to succeed within in a fast paced, challenging, and demanding environment.

### **RESPONSIBILITIES:**

- New Product Development: Research and Development of performance enhancing materials and material heat treatments.
- Design: Support RBC engineers on materials selection and evaluation, testing, fabrication, heat treatment, and plating.
- Manufacturing: Support the evaluation of material quality, obtain and maintain NADCAP heat treat accreditation where required, consult and assist with internal/external customer concerns regarding product quality, customer audits and approvals, materials and testing, failure analysis, destructive testing, procedures, evaluation of vendors for heat treating and plating
- Metallurgical Analysis: Improve existing metallurgical laboratory and maintain a list of vendors that can provide services outside of the labs capabilities.
- Manage Corporate Metallurgy Function: Conduct bi-weekly department update meetings, coordinate the projects of two Fellow level metallurgists with more than 80 years combined experience, and oversee a lab. Technician.
- Oxford Heat Treat Department: Technically oversee and support a newly implemented heat treat department within the Oxford, CT, manufacturing facilities.

### **REQUIREMENTS / QUALIFICATIONS:**

- BS/MS/PhD in Metallurgy, or Metallurgical Engineering, or Materials Science
- 10 + years of related experience.
- Expertise in metallurgy, thermal processing, machining, chemical processing, plating, stress relieving, material standards, material processing and potential process changes affecting material performance.
- Keen knowledge of the causes of fatigue and failure of metals, especially — but not limited to – the field of bearings.
- Anticipate travel requirements to various customers, suppliers, and RBC facilities of approximately 25%.

Please Send Resumes To **[WSamuelson@rbcbearings.com](mailto:WSamuelson@rbcbearings.com)**

## **ITEM # 0353 CONTROLS ENGINEER**

**Controls Engineer.** About Super Systems Inc.: Super Systems Inc. is a light manufacturing company located in northern Cincinnati, Ohio with 65 employees. We are a leading integrator in the thermal processing industry with a dynamic workplace that includes manufacturing, software development, field service engineers and a robust research and development department. Company website: <http://www.supersystems.com>  
Company address: 7205 Edington Drive, Cincinnati OH 45249

JOIN OUR TEAM! SIGN ON BONUS!! Exciting opportunity with Excellent Benefit Package including 401K match on day one! Super Systems Inc. is a growing industrial automation systems integrator looking for full time Controls Engineer. We are a leading integrator in the metal treating industry with a dynamic workplace that includes manufacturing, software development and field service engineers. Positions for field service/project engineers are currently available in Cincinnati Ohio. We are looking for talented people with a good work ethic, enthusiasm and a customer centric attitude. We offer exciting opportunities to work on challenging projects that encompass a variety of technologies. Super Systems Inc. offers a complete package of benefits including Health, Dental, Long Term disability, 401K, paid vacation and holidays.

Project Engineer to design and retrofit control systems and for thermal processing equipment. Our customers are heat treating facilities across the United States. Candidate will be responsible for analyzing customer requirements, designing and commissioning controls and SCADA equipment. FSE will be responsible for PLC programming, instrument configuration and setup, SCADA screen design, customer support, project management and end user training. This job will require 75% travel, but always home on weekends. Knowledge / Studies / Experience:

- Electrical/electronics
- PLC programming a must; Allen Bradley a plus
- Ladder logic
- PID control
- SCADA software
- Field wiring
- Control system integration
- Familiarity with industrial atmosphere and vacuum furnaces a plus
- SQL

Education and Experience:

- Required: 4-year Electrical or Electro-Mechanical Engineering Degree
- Required: 5 years experience

Other:

- Ability to travel required, approximately 50-75% U.S. travel. Always home on weekends/holidays
- Company car
- Will pay to relocate to Cincinnati
- Sign-on Bonus!

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## ITEM # 0352 SALES POSITIONS

**Mountain Rep**, ([www.mtnrep.net](http://www.mtnrep.net)), a Manufacturer's Representative Firm, since 1983, is looking to open multiple offices in the United States, concentrating in the Thermal

Processing Industry. Searching to mentor younger persons who want to take a stab at sales and/or looking for that retired person who is bored and wants to get back in the industry. Management and Ownership opportunities available. Please call Rosanne Brunello at 216 217-7769 or email her at [rosanne@mtnrep.net](mailto:rosanne@mtnrep.net)

## ITEM # 0351 METALLURGICAL ENGINEER

Plymouth Tube is a privately held manufacturing leader in alloy, carbon, stainless steel tubing and engineered shaped tubing. We are committed to providing extraordinary service and value to our customers. We have 8 mills across the United States and have been in business since 1924.

We are currently seeking a **Metallurgical Engineer** to be our Subject Matter Expert in our furnace operations.

### POSITION SUMMARY

This position will develop the technical deliverables for industrial process systems that will be focused on furnaces. A successful candidate will have strong metallurgical or material science expertise, the desire to get their hands dirty and to work with mill manufacturing teams to develop best standards practice for furnaces.

### ESSENTIAL RESPONSIBILITIES

#### SME Functions (50-75%)

- Coordinate Capital project development to improve furnace expertise and improvement of process control, simplifying jobs (automation) and expanding technical capabilities.
- Helps to improve and audits standard work for furnace processes.
- Brings thought leadership to the table for 'next generation' technologies on furnace processes.
- Ability to understand customer requirements.
- Assist mills in technical capabilities.
- Assist in development of training tools and guides that are universal across all mills.

#### Additional engineering functions (25-50%)

- Provide engineering support to all tube production and finishing facilities.
- Aide in solving equipment, quality, safety, infrastructure and environmental problems and issues
- Assist with the creation of functional specifications to conform to production and manufacturing requirements.
- Uses computer assisted engineering and design software and equipment to perform engineering tasks.
- Communicates and interfaces with all levels of the manufacturing sector to coordinate projects, achieve goals and conform to production requirements.

### QUALIFICATIONS and EDUCATION REQUIREMENTS

- Bachelor's Degree in Metallurgical or Material Science Engineering.

- 5 – 10 years of strong industry experience in manufacturing and steel heat treatment; tubing and metals experience a plus.
- Solid understanding of heat treating both carbon and stainless steel alloys.
- Experience with metallurgical lab equipment and procedures.
- Field Work: Ability to perform furnace system accuracy tests (SAT) and temperature uniformity surveys (TUS).
- Solid understanding of NADCAP, CQ-I9 and AMS 2750.
- Experience working with data acquisition systems.
- Experience with industry specification review.
- Background in maintenance, helpful.
- Big picture understanding of machines.
- Design Tools: Experienced with AutoCAD® and Windows Office Suite. Solidworks experience a plus
- Willingness to travel 40% of the time

Plymouth Tube provides a total compensation package including competitive salary, annual incentive, medical, dental, vision, HSA (Health Savings Account), FSA (Flexible Spending Account), short-term & long-term disability, life insurance, vacation, paid holidays, 401K Retirement savings program, education assistance, and wellness programs.

To apply: please click on the link below or go to our careers page at [www.plymouth.com](http://www.plymouth.com) and apply to job: Subject Matter Expert – Furnace

<https://usr54.dayforcehcm.com/CandidatePortal/en-US/Plymouth/Posting/View/979>

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## ITEM # 0350 SALES AGENTS WANTED

**Sales Agents Wanted.** Hi-Temp Products Corporation; an enduring 25+ year Supplier of high temperature heating elements, furnace hardware, controls and an aftermarket furnace rebuilder within the thermal processing industries is looking to recruit commission based sales agents throughout North America. Please submit queries or line cards to [info@hi-tempproducts.com](mailto:info@hi-tempproducts.com) Phone: 1.800.822.4335 or Hi-Temp Products Corporation. Address: 88 Taylor Street. Danbury, CT 06810, [www.hitempproducts.com](http://www.hitempproducts.com), [info@hi-tempproducts.com](mailto:info@hi-tempproducts.com)

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## ITEM # 0349 HEAT TREAT ENGINEER

AAM is a premier, global leader in design, engineering, validation and manufacturing with over 25,000 associates operating at more than 90 facilities in 17 countries.

We're hiring a **Heat Treat Engineer** who will be based out of our world headquarters in Detroit, MI. The ideal candidate has:

- A degree in Mechanical, Electrical or Metallurgy Engineering



- A minimum of 5 years experience with heat treat processes and equipment
- Detailed knowledge of carburizing and induction equipment operation and process controls
- Basic knowledge of facilities operations
- The ability to use AutoCAD
- Familiarity with PLC controlled equipment

Responsibilities include, but aren't limited to:

- Planning, designing and writing specifications for the purchase of heat treat furnaces and tooling or retrofitting of equipment
- Troubleshooting and supporting all heat treat processes, including carburizing, induction and other heat treat furnace operations
- Leading new capital projects to implement the inspection, installation and PPAP of heat treat equipment
- Monitoring and assisting the maintenance organization to develop and/or maintain a detailed preventative maintenance program
- Working on new alloy designs and testing new alloy material for material performance improvements
- Traveling: 50% minimum, U.S. and International

We offer competitive wages and employer-paid benefits, including medical, dental, 401(k), annual profit sharing, annual pay rate increases, and much more. For more information or to apply, **visit [aam.com/join-us/careers](http://aam.com/join-us/careers)**. AAM is an equal opportunity employer.

## ITEM # 0348

### 1ST. SHIFT MAINTENANCE TECHNICIAN / SUPERVISOR

**1st. Shift Maintenance Technician / Supervisor.** Rockford Heat Treaters is a family owned business, we have been in business for 50 years. We are looking for a person who would like to join our team. We offer health, dental, vision, life and disability insurance. We also offer 401K plan with a company match, paid bonus, vacations and holidays. Qualifications: Education: High School diploma or equivalent. 5 years in the heat treating industry. Must be able to interact and work with co-workers, and be a self-starter. Must be able to read blue prints for both electrical and mechanical equipment. Must be able to trouble shoot equipment (PLC and Relay Logic) and make repairs as needed. Must understand the basic operation of Vacuum, Atmosphere, Pusher, Gas Nitride furnaces ect. Good communications skills. Job Duties: Perform general maintenance duties on all building and equipment as needed. Basic machining and welding skills would be a plus, but not required. Must be able to lift 50 lbs. and be able to climb, bend and stand for long periods. Work with electrical, pneumatics, water and hydraulic systems as they relate to the heat treating industry. Work independently and with co-workers as required. 40-50 hour work weeks – some weekends as needed. Compensation: We offer competitive wages that will be based off of your knowledge and experience. Please email resume to **[tom@rockfordheattreaters.com](mailto:tom@rockfordheattreaters.com)**

## ITEM # 0347

### HEAT TREATING MANAGER/METALLURGIST/MATERIALS ENGINEER

**Heat Treating Manager/Metallurgist/Materials Engineer.** Reports To: Director of Manufacturing. Essential Function: 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.

#### Primary Responsibilities:

- Procure and establish a metallurgical lab to support the heat treating operation. The initial in-house processes will be normalizing, quench and tempering and Ion Nitriding.
- Establish work procedure for each process in accordance with customer specification or specific ASM specifications.
- Develop procedures in accordance with AMS 2750E for SAT and TUS for each equipment and train personnel to perform these tests as required.
- Hire qualified heat treat operators and also establish a training program for new hires using the guidelines of customer specifications and SAE ARP 162 (Training of Heat Treat Personnel).
- Coordinate and work closely with the quality manager to insure all procedures are followed.
- Insure that lot integrity is adhered to and that materials are segregated and identified until the metallurgical results confirm compliance.
- Establish rework procedures for heat treating when allowed.

#### Knowledge, Skills and Abilities:

- Must be able to achieve NADCAP certification for the in house processes.
- Must be able to establish an audit plan for outside heat treating services to insure compliance with written procedures.
- Manage and train Lab personnel in preparing metallurgical mounts to examine carburized and nitrided case depths and train personnel in using hardness testing equipment.
- Organize calibration services for all lab equipment as required by customer specifications or ASTM requirements.
- Establish a plan for continuous process improvement.
- Insure outside suppliers; gases, thermocouples, etchants and others meet the

requirements established

by the customer and or AMS or ASTM specifications.

- Provide leadership and team building to the department.

#### PRECISION GEAR INCORPORATED

##### Education and Experience

- College diploma or equivalent is required.
- A minimum of 5 years' experience in a manufacturing plant is required
- Strong supervisory and management skills
- Strong knowledge of plant and manufacturing operations required
- Good training skills
- Ability to read blueprints and parts lists and to apply the metric system
- Ability to work independently and as part of a team in a fast paced environment with little direction
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance a plus

#### REQUIREMENTS

- Must be a U.S. citizen or lawful permanent resident

Please send resumes to Pelay Tran [hr@precisiongearinc.com](mailto:hr@precisiongearinc.com).

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### ITEM # 0345 MULTIPLE POSITIONS AVAILABLE

Vesco-McLaughlin located in East Windsor, CT and McLaughlin Services located in Avilla, IN are looking to expand and hire people in the industry with any of the following experience:

- Hot Zone Design
- Vacuum and Atmosphere Furnace Design
- Vacuum and Atmosphere Furnace Service Experience
- Vacuum and Atmosphere Furnace Manufacturing Experience
- Electrical and Controls Experience

Please send all resumes and questions regarding positions to Ben Tackett, [btackett@vacuumengineering.com](mailto:btackett@vacuumengineering.com), Main: (860) 627-7015, Fax: (860) 627-9964.

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# SEEKING EMPLOYMENT ADVERTISING

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

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## Sales Position

Seeking employment as a 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.com](mailto:reply12345@yahoo.com)

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## Metallurgical Engineer Looking For a Position

Metallurgical Engineer Looking for a fulltime, part time or contract position in the Heat Treating industry. Skilled in metallurgical processes with more than 20 years of experience as a Heat-Treating Manager/Metallurgist/Material engineer with strong knowledge of heat treating, forging, and metal castings for manufacturing industries.

-Advanced Knowledge and experience of heat treating processes (gas and plasma nitriding, vacuum heat treating, flame and induction hardening of gears, controlled atmosphere, carburizing and carbo-nitriding, salt baths, precipitation hardening, cryogenic treatments, corrosion protection, etc.).

-Achieved certification for in house heat treating processes of Nuclear Plant products - Manage and train Lab personnel in preparing metallurgical coupons to examine heat treated (carburizing, nitriding, induction hardening and other processes) parts as per AGMA, ASTM or ASM standards.

-Establish TUS procedure as per AMS 2759 for temperature survey.

Please Email: [lidiadan92@hotmail.com](mailto:lidiadan92@hotmail.com)

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## 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](http://www.themonty.com).

**Gord Montgomery,**  
William G. Montgomery Limited  
Phone: 905 271-0033  
Email: **[gord@themonty.com](mailto:gord@themonty.com)**

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