

HEAT TREAT NEWSLETTER

Everything to do with heat treating



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INTRODUCTION

Our first issue of “**The Monty**” for 2020 provides the absolute, most up to date news about the worldwide heat treatment industry, including news items which you will not find at any other heat treat industry news source in the world. We hope you enjoy and look forward to your thoughts and comments.

Sincerely, Gord, Jordan and Dale Montgomery



Happy New Year!

HEAT TREAT NEWS

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

Diablo Furnaces, Rockford, USA-The End of the Line

Dec 30, 2019

Based in Rockford, Illinois, USA Diablo furnaces appeared almost from nowhere back in 2017 to start offering heat treat furnaces, primarily Batch IQ furnaces. The company claimed business was quite good and that they were rapidly gaining widespread acceptance in the North American heat treating industry, however just before Christmas the company closed down for good. The market for new furnaces in North American remains quite strong these days so we are not entirely sure what caused the company to close after such a short period of time. The news items below appeared on "The Monty" back in 2017 when the company was started and provide background on the company.

DECEMBER 1/2017; *"There is a relatively new furnace builder in Illinois by the name of Diablo Furnaces which we have run across a couple of times over the past year. The design of furnace they are marketing is very similar to the old Beavermatic design (Of course Premier Furnace Specialists Inc. of Farmington Hills, Mich., acquired the intellectual property assets of BeaverMatic Inc. of Rockford, Ill., back in early 2015). Well we certainly know why the design is similar, at least three of the employees at Diablo used to work at Beavermatic; Burk Glogowski, Richard Claeysen and Sue Harrod are all ex employees of Beavermatic proving once again that for good or for bad people entering the heat treating industry rarely leave the industry or wander far from home which in retrospect is probably a good thing."*

JUNE 14/2017 POSTING; *"MACHESNEY PARK, ILLINOIS – June 14, 2017 – A company that built a niche servicing and refurbishing million dollar machines in the gear industry launched a spinoff company to build a new line of heat treating furnaces for those same customers. The new operation, Diablo Furnaces, saved five employees from the unemployment lines and Diablo is looking to add more. Machine Tool Builders was founded in 1995 to rebuild and re-control – add new*

controls to modernize machinery – large machines that make gears or work on gears. The company does this work for large national conglomerates such as Boeing and Caterpillar but also for local firms including Forest City Gear and Rockford Toolcraft. MTB eventually diversified into selling foreign brands as well, such as Germany-based Burri Grinding and Dressing Machines, Switzerland’s Donner+Pfister and HERA Hobbing Machines from South Korea.

Several years ago, MTB saw an opportunity to break into a related industry. When a gear is finished it has to be baked in a furnace to make it harder. Without the heat treating, the soft metal would wear down in a day. Machine Tool Builders began servicing and refurbishing heat treating furnaces. Many of those furnaces were built by a decades-old Rockford, Illinois firm. When that company closed suddenly and its assets sold to a Michigan company, MTB added key personnel from that firm and began using that institutional knowledge to design and build new furnaces under the name Diablo Furnaces. Diablo builds internal quench, temper/draw, box and car bottom furnaces that are custom built for each customer, based on material, temperature range, volume and available floor space. Diablo launched in February with five employees and a goal to do \$6 million in sales this year. The company was 50 percent to that goal by the end of April. Diablo now needs more workers to keep up with market demand.”



Bodycote Acquires Ellison Surface Technologies

Dec 24, 2019

“Bodycote, the world’s leading provider of heat treatment and specialist thermal processing services, has entered into an agreement to acquire Ellison Surface Technologies (‘Ellison’), creating one of the world’s largest providers of thermal spray and engineered coating surface technology services to the aerospace industry.

Ellison’s business, based in North America, is highly complementary to Bodycote’s existing Surface Technology business. It is primarily focused on the aerospace market. It will be integrated into Bodycote’s surface technology and aerospace business, which itself has seen strong structural growth in recent years.

Gross consideration for the acquisition will be \$200 million (£154 million). When adjusted for tax benefits worth at least £30m, net consideration for the transaction is approximately £170 million. The consideration will be settled using Bodycote’s existing committed credit facilities.

Ellison’s business generated revenues of \$50m (£38m) in 2018, with associated pro-forma EBITDA of \$8m (£6m). Based on results year to date, it is anticipated that Ellison’s revenue for 2019 will be \$58m (£44m) with pro-forma EBITDA of \$12m (£9m). This expected revenue growth of 16%, and its associated 50% increase in pro forma EBITDA, reflects the fact that Ellison has been successfully gaining share in the civil aviation business, which will also provide a solid foundation for further revenue and profit growth in future years. It is anticipated that the Ellison business will be immediately earnings enhancing to the enlarged Bodycote business. Ellison employs almost 400 people across six sites located across the United States, Canada and Mexico.

Commenting on the transaction, Stephen Harris, Group Chief Executive of Bodycote plc, said ‘Ellison’s business is one that we have long respected and is a perfect strategic fit for Bodycote’s aerospace and Specialist Technologies’ businesses. Ellison has been successful in winning new business in recent years and it will be very complementary to Bodycote’s existing Surface Technology business.’

Completion of the transaction is contingent on various regulatory filings' processes; it is anticipated that the transaction will complete during the first quarter of 2020. Bodycote was advised by Credit Suisse on this transaction, while the sellers were advised by Lazard.

Acquisition Update Conference Call

Stephen Harris and Dominique Yates will be hosting a conference call for analysts and investors to discuss the acquisition in detail at 8.00am on January 7th.

Participant's dial in number : +443333009261 (Direct)

Participants will be asked for names only, no PIN required

For further information, please contact:

Bodycote plc

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Dominique Yates, Chief Financial Officer

Tel No +44(0) 1625 505300

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Accurate Brazing Adds Second Hot Isostatic Press from Quintus Technologies

Dec 20, 2019

To add to this recent press release we have this photo of Accurate Brazing getting ready for their new HIP unit.

“Västerås, Sweden, November 19, 2019 – Accurate Brazing, a full-service provider of specialized heat treating solutions, added Hot Isostatic Pressing (HIP) to its thermal processing capabilities earlier this year. “Based on overwhelming feedback from the marketplace, we are pleased to be moving forward with our second Hot Isostatic Press from Quintus Technologies,”



says Steven Francis, president of Accurate Brazing. Both presses are of the model QIH 122 M URC®. They are equipped with the Quintus proprietary uniform rapid cooling (URC) feature, which combines HIP and heat treatment in a single process. This process is called High Pressure Heat Treatment (HPHT), and it streamlines the steps involved in material densification and heat treatment. This innovative approach also enables all processed components to cool uniformly, resulting in minimal thermal distortion and non-uniform grain growth. “The Quintus technology allows us to shorten lead times, improve product metallurgy, and eliminate some additional outside operations, which is very attractive to our customers,” says Mr. Francis. Accurate Brazing serves the aerospace and power generation industries, as well as other sectors that demand high quality and short lead times. Many of Accurate Brazing’s customers utilize additive manufacturing (AM). “The versatility of the Quintus units makes them well suited for our service business model,” says Mr. Francis.

Wisconsin Oven Ships Conveyor Oven for Stress Relieving Automotive Parts

Dec 20, 2019

“Wisconsin Oven is pleased to announce the shipment of one (1) Natural Gas (Direct) Fired Continuous Duty Conveyor Oven to an American manufacturer. This conveyor oven will be used for stress relieving steel snap rings used in automotive parts. The oven has a maximum operating temperature of 650°F and a work zone of 2’2” W x 10’0” L x 1’0” H. Temperature uniformity of ±20°F at a set point of 550°F per the customer requirements was verified with a profile test to meet AIAG specification CQI-9. This stress relieving oven, when preheated, has sufficient capability to heat 350 pounds of steel parts per hour from 70° F to 550° F. Heated air will be delivered in a horizontal airflow configuration through a fully adjustable boxed duct (louvered openings are factory preset), located along the length and across the height of the work chamber.”



What's It Worth?

Dec 19, 2019

A scrap dealer approached us recently about a bunch of surplus heat treating equipment located in Indiana at a facility that use to produce hand tools. He had been tasked with the job of getting rid of all the equipment and he hoped to find some value in the furnaces and endothermic generators. All of the equipment was built by Surface Combustion a recognized brand and consisted largely of old mesh belt furnace lines and a couple of old 5600 CFH generators. While the dealer didn't like our answer the honest answer which we provided was that this equipment has scrap value only. The generators are the pre multi-retort style and lack air cooling and atmosphere control while the furnaces are relatively small and in very poor condition. It's always a shame to see equipment “scrapped out” but in this case it is a no brainer.



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Paulo, Monterrey, Mexico

Dec 19, 2019

It is now almost exactly two years since we had the news item below about commercial heat treater Paulo expanding into Monterrey, Mexico (the original press news item is below, please note that since that time Ben Crawford has left the company). Well obviously this has proven to be a very good decision on the part of Paulo as already the company is adding more furnace capacity as you can see in this photo.

“November 2017 PRESS RELEASE; *At the recent heat treat show in Columbus, Ohio we spent some time speaking with Ben Crawford, VP Operations for Paulo and one of the topics which came up was the new plant in Monterrey. While we can’t share all the details we heard we can provide this update.*

“Paulo is excited to announce Aldo Rodriguez as General Director of our Monterrey, Mexico location. Aldo is an experienced leader with 20 years leading Mexico based manufacturing operations. His roles have included positions in Quality, Engineering, and most recently General Manager at international aerospace suppliers. He earned degrees in Mechanical Engineering and Business and has continued his education earning Quality and Leadership certifications throughout his career. Aldo has been a leader in several manufacturing organizations including AMT, SME, and FEMIA (Federacion

Mexicana de la Industria Aeroespacial). Aldo is currently overseeing construction of the Monterrey facility and visiting other Paulo locations to learn our systems, including PICS,



and sharing his experience. In addition to those responsibilities Aldo has also begun recruiting key personnel for his team. Aldo’s focus on lean principles while generating high quality and financially productive results will benefit not only Paulo’s location in Monterrey, but all locations as his knowledge is shared.

Aldo reports to Ben Crawford, Vice President Operations, who comments “We are well into construction of Paulo’s first facility outside of the US. Most excitingly Aldo Rodriguez has joined as General Director overseeing the Escobedo facility. Aldo strengthens our experience in automotive, aerospace and doing business in Mexico. I’m thrilled to work alongside Aldo implementing our growth plans.” Aldo

added, "I feel very proud and honored to be part of this team. Paulo is a model company with great systems, business philosophy and strong values. With the addition of this Mexico operation, the company establishes its presence in a growing market that is actively seeking qualified Special Process service providers; Paulo is the answer to that need." Founded in 1943, Paulo is one of the largest providers of heat treating, brazing, and metal finishing solutions in North America. Headquartered in St. Louis, Paulo operates six divisions servicing the Midwest and Southeast regions of the United States and northern Mexico."

Item#VF350 Ipsen Bottom Load Vacuum Furnace - Price of Removal

Dec 18, 2019

The vendor of this bottom load vacuum furnace which is located in the US North East is offering this furnace for the price of removal jordan@themonty.com

Model VVFC, Serial number #57411. Working dimensions of 48" X 48". Max. temp 2300F. 225KW heating power. 2 speed 25 HP cooling fan. Increased internal heat exchanger coils. Insulated hot zone with moly hot face. Stokes 412 mechanical pump with ROOTS CONNERSVILLE 1016 booster. New SSI programmer/controller. Built 2/6/78. Graphite heating elements and graphite hearth. Installed but not in use. Good condition. Overall footprint dimensions = 15ft wide X 12ft 6" wide X 21ft high. Overall height includes safety barrier for personnel and aluminum channel beam assembly for fan motor removal.



Can you 'HIP' it? Investigating hot isostatic pressing

Dec 18, 2019

Recently we have had a number of news items about the Growth in “HIPPING” in the heat treatment industry. This article from commercial heat treater Paulo tells us why this process is growing in popularity;

“Additive manufacturing has steadily asserted itself as a viable method for producing complex components in aerospace, medical and other high-performance applications. And if you hang out in metallurgy circles (who wouldn't want to?), you can't hear “additive manufacturing” without also hearing about [hot isostatic pressing \(HIP\)](#). That's because the process, which applies high heat and high pressure to densify parts, has shown promise in improving the performance of high-performance additive manufactured components. While that's the most popular use case for HIP, it's far from the only one.

HIP applications

HIP is recently popular thanks to the prevalence of additive manufacturing for high-performance aerospace parts or medical devices like artificial hips, but the process is over 60 years old.

HIP was initially developed as a diffusion bonding technique. In diffusion bonding, high heat and pressure work together to weld similar or dissimilar metal surfaces without filler materials. Metallurgists soon observed that those process characteristics also improved mechanical performance by eliminating casting porosity (a term referring to the small bubbles of gas that can form during the solidification process of cast metals) and imparting a homogenous grain structure throughout the whole part.

Porous parts or parts with variable grain structures are less durable and cannot stand up to the stress of severe service.

A phenomenon similar to casting porosity occurs during an additive manufacturing technique called powder bed fusion. The process naturally leaves small voids within parts. Those small voids can cause big problems if they aren't eliminated. (We discuss the intersection of powder bed fusion, HIP and superalloys [in this article](#).)

In addition to use alongside additive manufacturing and diffusion bonding of parts, HIP is typically specified as a densification process complementary to powder compaction and sintering and metal injection molding. It's most often specified in aerospace, medical & dental, oil & gas, power generation, firearm and jewelry manufacturing.

Our HIP equipment

The HIP vessel recently installed in Paulo's Cleveland Division is a Quintus Technologies QIH 122 unit with uniform rapid cooling capabilities. Its work zone is 25.9 inches in diameter and 68.9 inches in depth. It can process parts in a maximum of 12 layers at five inches deep each. [Our initial testing](#) of the unit has revealed some pretty impressive capabilities:

- *Max temperature = 2,425 F (1329 C)*
- *Max pressure = 30 ksi*
- *Max cooling rate = 900 F (500 C) per minute under select conditions*
- *High temperature uniformity = typically ± 10 F throughout the work zone*

The rapid cooling capability of our HIP vessel is comparable to [vacuum furnace quenching](#). These properties make it possible to HIP and [solution treat](#) parts simultaneously, imparting decidedly better metallurgical properties while reducing turnaround time.

Materials ideal for HIP

A wide array of materials can be HIP'ed in the high-pressure argon environment our unit creates. Such an atmosphere is ideal for:

- *Carbon steel*
- *Tool steels*
- *Duplex, martensitic and austenitic stainless steels*
- *Nickel-based alloys*
- *Cobalt-based alloys*
- *Titanium*

We're still evaluating how well we can HIP aluminum and magnesium. Trials currently in progress will help us determine whether residue left behind after processing these materials will impact future HIP cycles.

HIP advantages

A common critique of HIP among some manufacturers is that it's a costly, unnecessary extra step in the manufacturing process. The word "overkill" comes to mind, and it's true that some thermal processors aggressively market the process to manufacturers who make parts for which HIP may not be a metallurgical necessity. But when it's appropriately specified, HIP gives manufacturers several compelling advantages both upstream and downstream in their production process.

Design & manufacturing freedom – Some parts feature highly complex shapes that are too complicated for traditional forging or casting. In response, manufacturers have either sacrificed performance with watered-down designs or added costly processing time by designing parts in pieces and then joining them via brazing. But the pressurized gas used in HIP finds its way into internal passages and blind features of complex parts, ensuring they achieve specified metallurgical characteristics while reducing the traditional failure risks.

Mechanical characteristics – HIP has been shown to enhance key mechanical characteristics such as ductility, toughness, yield strength and corrosion resistance. Fatigue, impact, wear and abrasion resistance can also improve. We've also observed that HIP'ed parts end up with less "data scatter." Reducing data scatter enables design engineers to more accurately understand material performance and to know more precisely where the material's limit exists. They can then design according to that known information.

Optimized manufacturing – Whether parts are additive manufactured, cast or forged, integration of HIP can streamline manufacturing. First, the combination of additive plus HIP's densifying and solution treating capabilities mean more manufacturing stages can be accomplished in fewer steps. Second, manufacturers concerned about porosity can allow it to occur knowing that HIP can correct the issue.

Simultaneous treatment – Older hot isostatic presses were typically designed with thicker walls which impeded quick cooling. That eliminated simultaneous treatment from the equation (and led some to believe the process was unsafe). Rapid quenching is built into our new HIP vessel, allowing simultaneous heat

treatment and hot isostatic pressing. The resulting time savings is significant. Improved performance of parts treated in this manner has also been observed.

Reducing scrap – *There’s always variability in manufacturing; the risk of scrapping some parts is ever-present. But HIP can help reduce scrap in two ways. First, it can be incorporated into regular production of parts with tricky designs to make up for potential upstream process deficiencies. Second, it can be applied as needed if a one-off problem occurs in a single batch. In either case, the potential savings is compelling.*

As we said above, HIP isn’t new. But new doors are opening. As modern manufacturing methods continue to emerge, the competitive landscape will change.

Are you ready for it?



Carmine Filice, Vac Aero

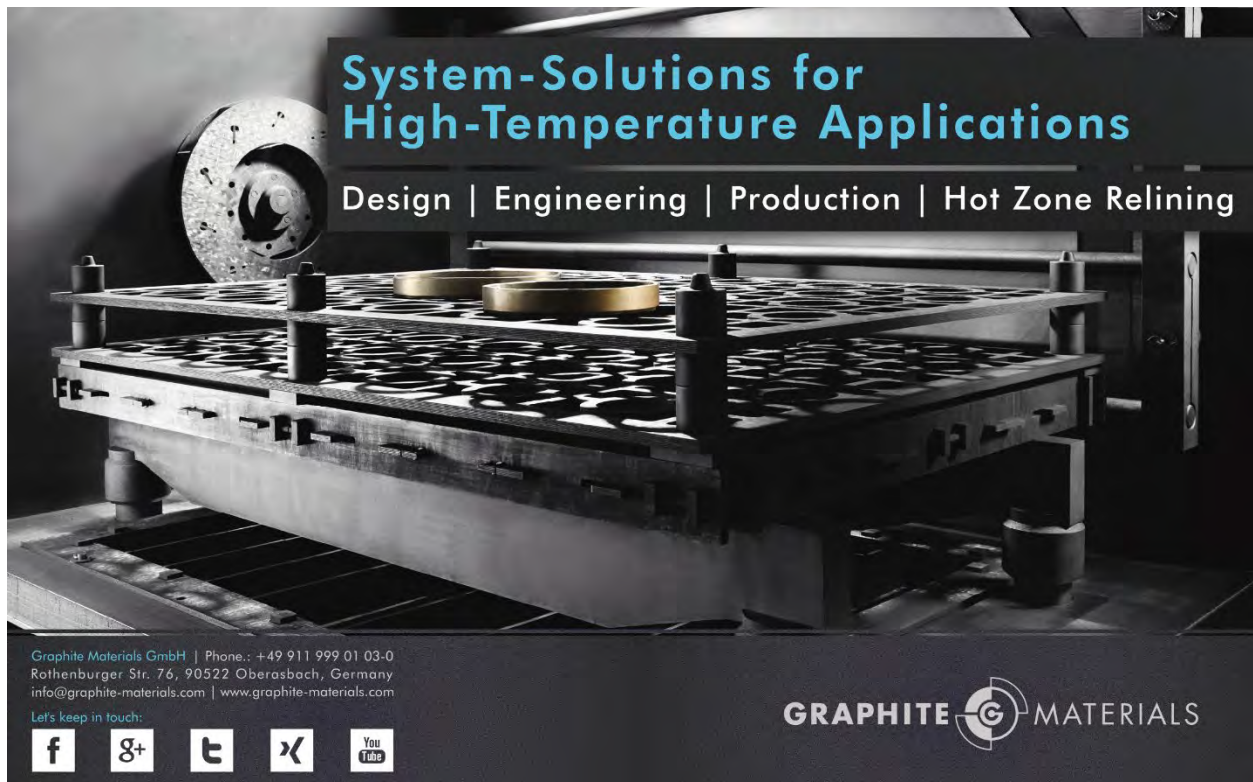
Dec 18, 2019

As you can see Carmine has worked at commercial heat treater Vac Aero in Oakville, Canada for 33 years but next week will be his last day. Carmine is a good man who did a very competent job running one of the largest commercial heat treats in Canada. This photo shows Carmine and his wife just a few weeks ago.

“Just sending you this email to inform you that after over 33 years of service at VAC AERO International, I have decided to retire my position as Director of Oakville Thermal Processing Division effective December 23, 2019. This was not an easy decision to make as I passionately enjoyed my time at VAC AERO. Throughout the years,



I have grown with the company and have met some fascinating people. I would like to take this opportunity to thank you as you have definitely helped me forge a successful career.”



Solar Atmospheres, Western PA Adds Machining Capacity

Dec 18, 2019

“To support rapid growth within their mechanical testing department, Solar Atmospheres of Western Pennsylvania has recently invested in a new Haas ST-10 CNC lathe.

The Haas ST-10’s 6000rpm spindle features an automatic tool changer with a 12-station, bolt-on tool turret, allowing Solar’s machining center to automatically change tools at the push of a button. This results in significant time- and cost-savings over Solar’s original TL-1 Haas lathe, which requires up to five manual tool changes to produce one tensile specimen. The investment in an automated lathe results in a 50% savings in the production of a variety of round tensile specimens. The TL-1 lathe will be retained as back-up in the case of an unexpected breakdown.

The increased machining efficiency of the Haas ST-10 improves turnaround for the customer at the final stage in the thermal process, obtaining the tensile test results of processed materials. Previously

performed by an outside company, the opportunity to bring this testing in-house saves the customer time and money. Says Bob Hill, President of Solar Atmospheres of Western Pennsylvania, "This new CNC machining center will ultimately support our overall goal of becoming Nadcap Laboratory Testing AC 7101 approved. We have learned in the past that keeping these processes in-house is a benefit not just to Solar, but to our customers, as well."



For additional information about Solar Atmospheres, contact Mike Johnson at 1-855-934-3284 or mikej@solaratm.com, and visit us at www.solaratm.com."

American Heat Treating Adds Capacity

Dec 17, 2019

"Armida Oradei, General Manager at American Heat Treating, a leading heat treating facility in the Northeast, is pleased to announce a substantial expansion in their capacity with the installation of a new batch furnace. The newly installed line is composed of a 36" x 48" x 36" IQ BeaverMatic oil quench furnace with a stainless steel spray/dunk post wash and two tempering furnaces with nitrogen capabilities. An endothermic generator and a charge car are also included in the line.

"This installation enables us to bring in new business and new customers to AHT. We have a great team here at AHT. Everybody is very motivated, enthusiastic and dedicated to our company," said Oradei. This is the second large investment the company has made since Ms. Oradei joined AHT. The first one was the introduction of an induction machine, which at the time was a new technology offering that helped to expand AHT's ability to support its customers.

Visit www.americanheattreating.com <<http://www.americanheattreating.com>> for more information about AHT.

About AHT; American Heat Treating, Inc. (AHT) located in Monroe, CT, was founded in 1981 to serve the saw blade and tooling businesses. Today the company serves a wide variety of industries, and it has become one of the finest and most versatile heat treating facilities in the Northeast. AHT provides pick-up and delivery services in the southern and central areas of Connecticut. AHT offers

several heat treating processes including continuous austempering, tempering, neutral hardening in salt, batch and continuous hardening, carburizing, carbonitriding and induction hardening. We can carbon restore, normalize, and homogenize. Vacuum processes such as hardening, annealing, brazing, tempering, aging, precipitation hardening, and stress relieving are also available. AHT strives to maintain a high level of customer satisfaction and is committed to strengthening the business by reinforcing the emphasis placed on quality, service, and on time delivery. These are just a few of the things that make American Heat Treating a valued partner to our customers.”



Hardservice, Sweden Installs Ipsen Low Pressure Carburizing System

Dec 17, 2019

We recently mentioned heat treater Hårdservice in Sweden adding vacuum capacity. We now have this rather cool photo of their brand new, Ipsen2Treater M with LPC low pressure carburizing being lifted into position at their Halmstad location.



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Michael Smith Joins Magnetic Specialties

Dec 17, 2019

“Magnetic Specialties, Inc. is pleased to announce the addition of Michael K. Smith as our Business Development Manager.

Having extensive experience in the custom magnetics industry in electro-mechanical engineering and business development, Mike brings a well-rounded experience to Magnetic Specialties.



Mike Afflerbach, President of Magnetic Specialties, says, “We feel extremely fortunate to be adding Michael Smith and his talents to our team. Mike’s prior sales experience within the custom magnetics industry brings a wealth of knowledge to MSI. Mike’s professionalism will cultivate new business and exciting opportunities for our company today and in the future.”

Joining Magnetic Specialties, Mike will utilize his experience and leadership skills to maintain and promote marketing and sales for MSI. We are confident Mike will provide our customers with outstanding support.

Mike lives in Pennsauken NJ and enjoys life with his wife, Kathryn. They have 2 married daughters.

For additional information, contact Michael K. Smith at 267-384-5231 x1108 or michaels@magspecinc.com and visit us at www.magspecinc.com.”



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Monday Morning Briefing

Dec 16, 2019

This past Friday we promised you an update on some of the recent auctions featuring used heat treat equipment—we start off with **Angstrom Precision Metals** of Mentor, Ohio, USA. This auction featured a total of 7 older Surface Combustion “Standard Allcases” which typically have working dimensions of 24” X 36” X 20” high and a couple of old Surface endo generators. Our feeling was that this equipment was not going to excite many people and our prediction proved correct. As far as we know captive heat treater **Pace Engineering** in nearby Willoughby, Ohio (who currently run 6 standard Allcases in their heat treat department) bought some of the equipment with the remainder being sold for scrap. This photo shows part of the heat treating department at Pace.



Aerojet Rocketdyne Auction, California, USA. We have already provided an update about this auction which featured a monster Abar Ispen vacuum furnace (photo below). However if you missed the update to cut a long story short the auction took place December 10th and the furnace remains on the used equipment market.



November 20th there was an auction at **Ashland Precision Tooling** in Ashland, Ohio. Of interest to heat treaters were a reasonably nice **Plateg Ion Nitrider** and an electrically heated **Surface Combustion** batch IQ furnace with working dimensions of 36” X 48” X 36”. The Ion nitrider sold to a commercial heat treater in the Cleveland, Ohio area for a supposed \$50,000 USD and the Surface Allcase was bought by a used equipment dealer.



December 5th the equipment at what was once **Bluewater Thermal Processing** in Kitchener, Ontario, Canada went on the auction block. This included two older mesh belt lines, several batch IQ furnaces and two large systems for processing aluminum engine blocks. One of the Surface 36" X 72" batch IQ's sold to a customer in Texas for over \$300K USD, one was sold to a customer in Canada and supposedly 2 units were sold to an individual in Ontario who is planning on opening up a brand new commercial heat treat shop in the province, one of the mesh belt lines was also bought by this individual. The aluminum furnaces were not sold which is no real surprise, nice looking systems but a limited market. The photo below shows the furnace which went to Texas.



Last Friday, December 13th we had the photo below-when we posted it we suggested that the fellow on the left looked a great deal like David Crosby of the musical group "**Crosby, Stills, Nash & Young**". We of course were having some fun with a good friend of ours, **Mr. Henry Beckley** of commercial heat treat **Rochester Steel Treating** in Rochester, NY, USA. On his left is the General Manager of the company, **Mr. Keith Heiden**. The company made our news section recently when we announced that they had just achieved NADCAP certification.



In people news we hear that **Anne Miner** has parted ways with furnace builder **Diablo** of Rockford, IL., USA. Anne has been in the heat treating industry for many, years, generally in a marketing position. The rumor mill is in high gear

these days about one of the **Larger Commercial Heat Treating Groups** in North America being on the auction block. We say rumor, however we are pretty sure it is true. More to come on this in the near future. **Metex Heat Treat** (who we see are billing themselves as the largest commercial heat treat in Canada) just keeps on growing. The company which is based in Mississauga, Canada will shortly be installing a 36" X 72" X 36" batch IQ furnace which will compliment their existing 5 or 6 batch IQ's (we're losing track). This photo shows the founder of the company Mr. Surjit Bawa with Gord Montgomery in the firm's induction department.



From Pennsylvania, USA we have this press release from **Vacu-Braze**; *"Vacu Braze continues to expand its capabilities for the Aerospace Industry by receiving the GE Aviation Supplier Approval for Vacuum Heat Treating. The GT193 verifies that a review has been completed of Vacu Braze's technical resources and quality system controls used in heat treating and has found our process to be capable of satisfying certain GE Aviation requirements and specifications. Vacu Braze offers a variety of services catering to the aerospace industry. These include precision vacuum heat treatment for parts such as fasteners, bearings and bushings, weldments, and many other aircraft components. As Vacu Braze continues to expand capabilities and technical certifications, we look forward to the opportunity to provide more high-quality services to customers in all the industries we serve."*



Our friends at furnace builder **SECO/WARWICK** landed a nice order from an aerospace company in China." *SECO/WARWICK designed, manufactured and commissioned a 25-kg (55-pound) single-crystal furnace and a 50-kg (110-pound) vacuum melting and casting furnace for the production of high-quality, premium castings for a producer of aviation engines in China. The order includes a high-temperature vacuum gas-quench furnace that will be used for scale- and pollution-*

free thermal treatment of metals. SECO/WARWICK will also provide professional technical services to ensure smooth start-up and operation of the equipment.” And to wrap things up today we understand that aerospace supplier and captive heat treater **Northstar** in Bedford Park, Illinois, USA is about to start up some more equipment at their in house heat treat department. If you recall the Northstar facility in Milton, Ontario, Canada closed down at the end of 2017 and some of the equipment including furnaces and press quenches were transferred to Illinois after rebuilding.

Heat Treat Equipment Auctions-What’s It Worth?

Dec 13, 2019

Recently there have been a slew of auctions featuring heat treat equipment, Bluewater Thermal, in Canada, Aerojet Rocketdyne in California, USA, Angstrom Precision Metals in Ohio, USA, and Ashland Precision Tooling again in Ohio, USA all come to mind. We are prepared to give you an update on where all (or most of) this equipment went to of didn’t go to Monday of next week as part of our “Monday Morning Briefing”. In some cases we can give you an idea about what it sold for. The bottom line is that the equipment went to both captive and commercial heat treaters scattered all over North America.



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David Crosby

Dec 13, 2019



You could be forgiven for thinking the fellow on the left in this photo is the famous David Crosby of “**Crosby, Stills, Nash & Young**” but you would be incorrect. Monday we will tell you who he is and what company he is with.

Aerojet Rocketdyne Vacuum Furnace Auction, California, USA

Dec 12, 2019

Remember this auction which was held yesterday (December 10)? Well the furnace is still available as it turns out.

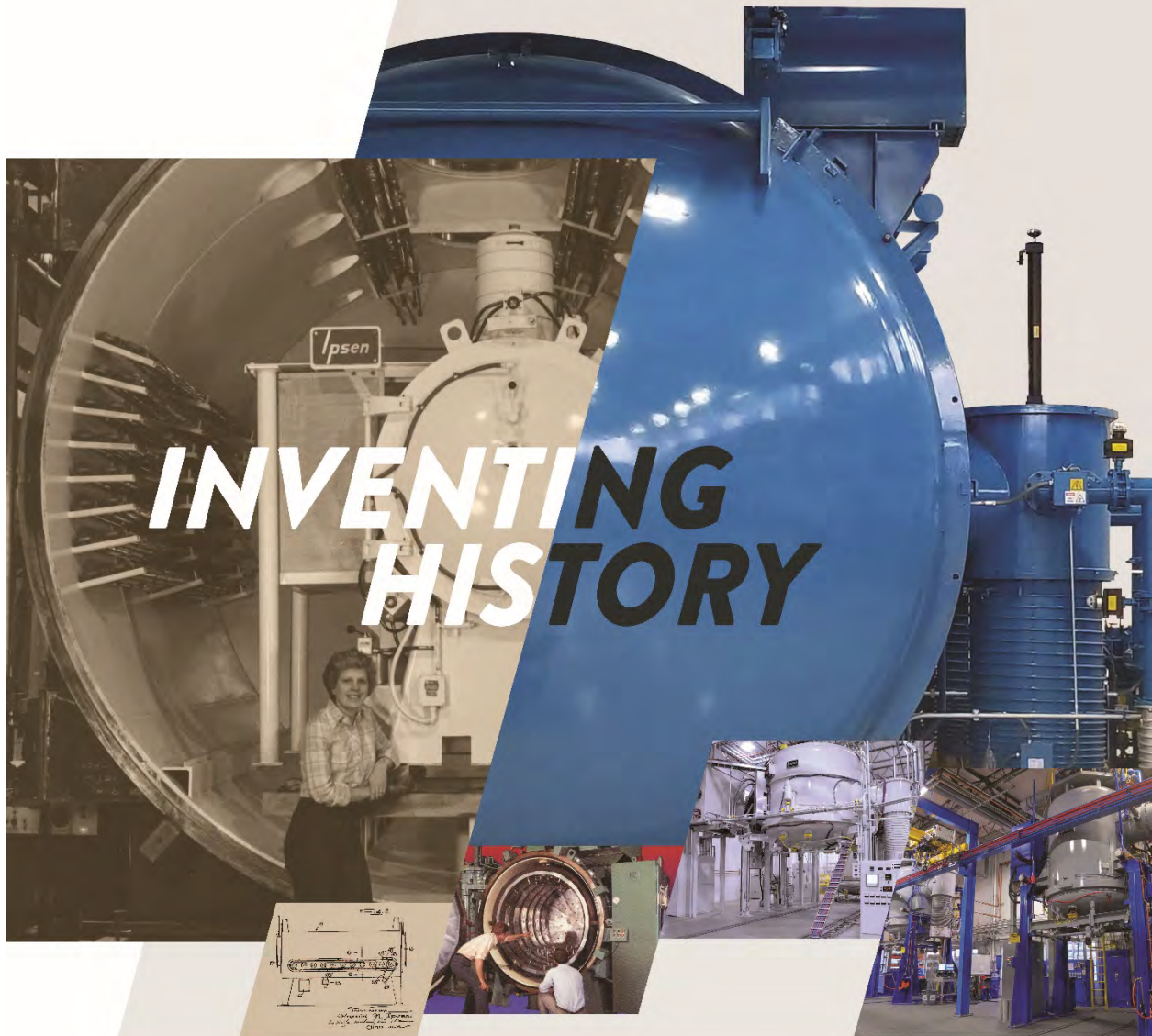
“Machinery Marketing International, in collaboration with Hilco Industrial, has announced a large industrial auction of Aerojet Rocketdyne manufacturing equipment. Aerojet Rocketdyne is a rocket and missile propulsion manufacturer based out of California. The auction of this 800,000+ sqft manufacturing facility features advanced large capacity heat & vacuum treating, composite structure forming, CNC machining, quality assurance & more.? Key assets in auction include an Abar Ipsen HR-120x152VC 6-Bar MetalMaster Horizontal Vacuum Compression Braze Furnace, Baron 200A650 10' Electric Autoclave, Grieve HB-500 500°F Electric Oven, a Giddings & Lewis 72" CNC Vertical Turret Lathe, and more. Paul Zimmer, CEO of Machinery Marketing International, stated, “We are proud to have been selected as an asset disposition partner for this closure. This facility features rare aerospace equipment including vacuum furnaces and heat treatment machinery, composite manufacturing equipment, large scale turret lathes, and a wide selection of machine tools. The scale and quality of this equipment makes this auction a unique opportunity for buyers.” The live auction will take place December 10/2019.”





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Paulo Awarded Gulfstream Approval at 3 Locations

Dec 12, 2019

Paulo, one of the largest commercial heat treaters in North America <https://themonty.com/largest-commercial-heat-treats/> is very understandably quite proud of this approval. *“Paulo is proud to announce that three facilities have been awarded Gulfstream approval following on-site audits in St. Louis, Cleveland, and Kansas City. Leading the audit was a Corporate Quality Assurance Regulatory Compliance Specialist from the Savannah, Georgia Headquarters.”*

The auditor met with key Paulo team members at each of the three locations over a one-week trip. The results were overwhelmingly positive, and approval was granted quickly.

The scope of the approval is quite wide, encompassing several Gulfstream specifications for various materials and processes. Paulo is approved for GAMPS



5101, 5102, 5103, 5104, and 5105. Paulo’s Cleveland facility was also approved for Hot Isostatic Pressing and furnace brazing. Chad Simpson, Corporate Director of Quality commented, “We are excited to add another Prime approval to our capabilities and for the opportunity to provide Gulfstream and its suppliers with the customer service and quality Paulo is known for.”

“We’ve been intentional about working with Primes and OEMs over the past couple years, adding to our approvals and giving them more visibility into their supply chain relative to thermal processing. As the Aerospace industry works through the massive backlog of orders, we are excited to help do our part and provide alternative sources for Gulfstream and its suppliers,” said William Rassieur, Vice President Sales.

Need Gulfstream spec thermal processing? Let’s talk. If you’re in the Wichita area, see how we are bringing Paulo to you. Founded in 1943, Paulo is one of the largest providers of thermal processing and metal finishing solutions in North America. Headquartered in St. Louis, Paulo operates six divisions servicing the Midwest, Great Lakes, and Southeast regions of the United States and northern Mexico.”

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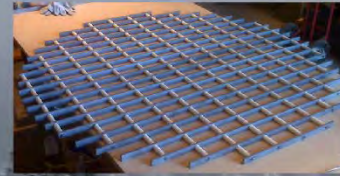
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Kittyhawk Hot Isostatic Pressing

Dec 11, 2019

One of the hottest trends in the heat treatment industry in North America in 2019 has been the dramatic growth in Hot Isostatic Pressing. Kittyhawk in California, USA is a long established player in this field who has found the increased demand for this technology warranted a very substantial investment in an additional facility and more equipment.

“Kittyhawk has officially begun providing Hot Isostatic Pressing (HIP) services at their new facility in Canby, Oregon. In response to increased demand for HIP services in the Pacific Northwest, Kittyhawk expanded from its Southern California location to accommodate continued growth of its customers and to attract new customers from the region. Kittyhawk’s multi-million dollar investment plan included the purchase of a 27,000 sq. ft. facility capable of housing multiple HIP units and the purchase of a state-of-the-art 46x100 HIP unit. The company expects to hire local talent to join the Canby team and will install a second 46x100 unit in early 2020. Kittyhawk was founded in 1981 to provide Hot Isostatic Pressing

services to the casting industry. Headquarters in Garden Grove, CA, a suburb of Los Angeles, Kittyhawk operates 6 HIP units and employs over 50 people. The company is dedicated to providing excellent, timely and economical services to its customers. Kittyhawk serves companies from the aerospace, commercial, military, automotive, firearms medical, oil and gas industries. For more information, please contact Brandon Creason at Brandon@kittyhawkinc.com or 714-895-5024.”



Q-Tech Heat Treat, Dallas, Texas, USA Adding Capacity

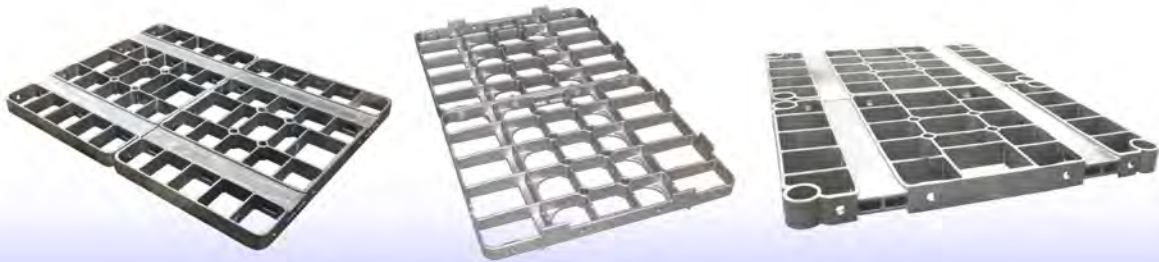
Dec 10, 2019

By way of background about Q-Tech Heat Treat we will summarize by using this description from their website: *“Founded in 1972 by R.D. Fussell and sons in a 1000 sq. foot building with 2 furnaces. We have grown to our current size of 100,000 sq. feet and over 40 furnaces. Our main focus is on customer needs, and servicing them on a personal level. We have been ISO approved since 2003. We have also been approved for steel parts through General Dynamics, and Komatsu from Osaka, Japan.”* With that background out of the way we can tell you that the company is run by John Fussell, his son Sean Fussell and his son in law Casher Dowell, all of who are some of the nicest people you are going to meet in the industry. The company has long been a very substantial player in the commercial heat treating market in Texas and recently they have been finding business to be good enough to warrant more capacity. The additional capacity will take the form of 2 gas fired batch IQ furnaces with working dimensions of 36” X 72” X 36” high and top cool option. Also included will be all the ancillary equipment required such as tempers, washer and charge car. It always makes our day to see companies growing and expanding.



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Centorr Vacuum Industries Ships High Temperature Vacuum Furnace

Dec 10, 2019

“Centorr Vacuum Industries announced it has shipped a new lab sized Series 45 top loading furnace for ultra high temperature research and development work. The hot zone size of 6” diameter x 9” high is ideal for heat treatment of ceramics, graphite and carbon composites, process development, and lab studies. The hot zone is contained within a robust double walled, water jacketed, all stainless steel chamber. This newest offering combines the proven designs of Centorr’s popular LF 22-3000 Lab Furnace and the rugged Series 45 furnaces to yield a furnace capable of 3,200°C in an inert gas atmosphere. Centorr’s Series 45 graphite furnace design includes solid graphite panel elements designed for long service life within a cylindrical hot zone of rigid graphite insulation to provide long-term service even in the presence of process off-gassing. The Vacuum Pumping System is capable of attaining 5×10^{-2} Torr prior to backfilling with Process Gas up to 2 PSIG. Operation is at 2,400°C in 1 Torr of vacuum with full 3,200°C capability in 2 PSIG of process gas. Furnace Control is via PLC/Programmable Controllers with Centorr’s custom-designed HMI visualization interface available as an option.”

Centorr Vacuum Industries is a high temperature vacuum and controlled atmosphere furnace manufacturer which was founded in 1954, with an installed base of over 6500 units worldwide. Their furnace offering ranges from large commercial and production units with hot zones over 3m x 3m, to smaller Lab and Research & Development furnaces. They are located in Nashua, NH with a fully staffed Aftermarket Field Service group, and Applied Technology Center offering R&D support and toll production service. For more information please visit www.centorr.com.



Monday Morning Briefing

Dec 8, 2019

To start off this week we have some people news starting with **HI TecMetal Group**, one of the larger commercial heat treaters in the US; “*HI TecMetal Group Inc.*

(HTG), Cleveland Ohio, announces the appointment of **Shaun Campbell** as plant manager for Walker Tool Steel Heat Treat facility. If you see a new face on December 23rd, let Shaun know that you are excited about him joining our team. If you do work with the Walker team, please look for an opportunity to greet Shaun. Prior to joining HTG, Shaun worked for OVT Heat Treating of Cleveland where he held roles in quality and production. In his prior role, he spent 21 years as manager of Kowalski Heat Treating in the plasma nitride department, he brings a a wealth of knowledge and experience in heat treat.”

Ludovic Chouraki very recently became Maintenance Manager at **Accurate Brazing Corp.**, in Greenville, SC. Ludovic has a long history in the industry and most recently was Southeast Regional Service Manager for Ipsen. **Accurate Brazing Corp.**, is part of the Aalberts group of companies and was recently in the news when they announced their second Hot Isostatic Press from Quintus Technologies. If you would like to know more about how large Aalberts Industries is we would suggest; <https://themonty.com/largest-commercial-heat-treats/>

In the US Northeast everybody knows the rep firm of **Dean Russell** and his son Dean Russell. For years they have been representing some of the best known heat treat equipment brands such as furnace builder **Ipsen** and cooling system specialist **Dry Coolers**. Well Dean Senior just became a grandfather again and his son just became a Dad for the third time with the birth of Connor Quinn Russell.



In Meadville, PA, USA we heard that **Bill Cooper** passed away at the relatively young age of 63. Bill worked at **Meadville Forging Company** for 30 years and retired as foreman of the heat treat department. **Sue Harrod** has been in the heat treatment industry for quite some time, most recently as CEO of furnace builder **Diablo Furnaces** in Rockford, IL., and before that with **Beavermatic**. She parted ways with the company earlier this year but we see that she is now in charge of Sales & Marketing for **Glow Heat Treat Services** who appears to be a furnace rebuilding company. Out in Phoenix, Arizona, USA it looks like **Eric Reamer** was recently promoted to Engineering Manager at **Phoenix Heat Treat**. Phoenix is the

largest commercial heat treater in the state. We have this photo which was taken at controls company **SSi** in Cincinnati, Ohio just last week. In it we see from the left **Bob Fincken**, National Sales Manager, **Jordan Montgomery** of WG Montgomery Ltd., **Steve Thompson** CEO of SSi and **Gord Montgomery**.



In Germany furnace builder **ALD** completed their third expansion very recently. *“The new buildings created space for more than 100 additional employees. This significantly eases the space available for the ALD workforce in Hanau, which has meanwhile risen to more than 500 employees. “The continuing good business development was accompanied by a parallel increase in the number of employees and led to increase space requirements in 2018”, reported Löber, the CEO. “Recently we have had to move closer together and even create temporary solutions in order to find a place for all our employees. We are therefore very pleased that we can now move into the new buildings”. The third construction phase for ALD comprises a four-storey office building with an area of 2,500 m² and another hall with an area of 2,500 m². Identical to the large assembly hall from the first construction phase, this has sufficient hall volume and all necessary energy and media connections including the associated pits.”*



In Mexico Tier 1 auto parts supplier **Metalsa, México** recently completed installation of a brand new heat treat department. The Equipment is in the final stages of acceptance and early in the new year we Will be able to give you more details.. Captive heat treater **Slacan** in Brantford, Ontario, Canada just installed a gas fired batch IQ furnace doubling their in house heat treating capacity. Slacan is



a supplier of “pole line hardware”—those big clips you see on electric power transmission lines. From oven builder **Wisconsin Oven** we have this press release; “*Wisconsin Oven Corporation announced the shipment of one (1) Indirect Gas Fired Heavy Duty Walk-In Series Oven to a manufacturer in the technology industry. The walk-in oven will be used for heat-treating materials used in the production of vehicle batteries.*”

To round things out we hear that burner manufacturer **Noxmat**, a German company which is part of the **Aichelin Group** just opened their new subsidiary in India. This photo shows part of the opening ceremony.



Karl-Wilhelm-Burgdorf Prize awarded to Dr. Heuer

Dec 6, 2019

Dr. Heuer, Head of Research and Development Heat Treatment at ALD, was honored with distinguished award during a reception at the 75th Heat Treatment Congress in Cologne. He was awarded the Karl-Wilhelm-Burgdorf Prize by Dr. Winfried Gräfen, the Chairman of the AWT. This prize is granted to individuals who have put scientific findings into practice in an extraordinary manner, giving impetus to materials technology and heat treatment.

In his laudatory speech, Dr. Gräfen emphasized in particular the development of low-pressure carburizing and high-pressure gas quenching technology as well as the associated [ModulTherm](#) and [SyncroTherm](#) plant technology. Furthermore, he emphasized not only Dr. Heuer's intensive and outstanding lecture activities, but also the numerous publications with which he made his knowledge available to the public. He thanked Dr. Heuer for many years of membership and close ties to the AWT and congratulated him for the award, which is to honor his successful work at the interface of science and practice.

"The Association for Heat Treatment and Materials Science ([AWT – www.awt-online.org](http://www.awt-online.org)) stands for communication and knowledge that deals with heat treatment and material engineering. The AWT first and foremost promotes the transfer of knowledge and cooperative exchange of ideas between research and industry. To this purpose, the AWT initiates its own research projects and sets the standards throughout Europe by holding professional technical congresses." (Source: [AWT](#)) Founder of the Karl Wilhelm Burgdorf Prize is the BURGDORF GmbH & Co. KG.



Heat Treat Equipment Auction

Dec 6, 2019

The remaining assets of what was formerly Bluewater Thermal Solutions in Kitchener, Ontario, Canada were auctioned off today and the auction can certainly be considered to have been a success. All of the 36" X 72" X 36" batch IQ furnaces were sold with the newest one (shown in this photo) selling for a little over \$300,000 and the other older ones selling for what we would consider to be quite respectable prices. Rumor has it that most of the IQ's are destined for Texas. Surprisingly enough the two smaller mesh belts sold, one to the former GM of the facility and the other to an individual we are not familiar with. We have been told that the only items that didn't sell were the two large Can Eng aluminum furnaces which is not a surprise. We hasten to add that there is nothing wrong with them, it is just a very small market for this style of furnace. While many consider that the commercial heat treating industry in North America is slowing down there is little sign of it from this auction.



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The Solar Manufacturing logo features a stylized sun icon above the word "SOLAR" in a bold, sans-serif font, with "MANUFACTURING" underneath. Below the logo is a photograph of various metal parts, including pipes, rods, and fittings, arranged on a blue surface.

Gasbarre Products, Inc. Announces Enhancements to Thermal Processing Systems- New Developments at Gasbarre

Dec 5, 2019

DuBois, Pa – Gasbarre Products, Inc. (Gasbarre) is pleased to announce that at the end of 2019 all Thermal Processing Systems will be manufactured in its 50,000 sq. ft. facility located in St. Mary's, Pennsylvania.

In 2011 Gasbarre acquired the JL Becker brand of industrial furnace equipment. Over the last 8 years, Gasbarre has run parallel manufacturing facilities in Michigan and Pennsylvania for its furnace equipment. Consolidating the manufacturing of its common product lines allow for the most efficient use of its floor space, equipment and manufacturing processes.

According to Gasbarre CEO, Alex Gasbarre, "This move is not only beneficial to our current operations, but it will directly impact our customers. Our St. Mary's facility has a track record of on-time delivery, quality, safety and efficient processing. Those factors will drive competitive pricing with quick delivery."

Gasbarre will maintain a strong presence in the Detroit area with a sales, engineering and service facility. Ben Gasbarre will maintain his leadership role within the Plymouth, Michigan location. The sales and technical team are excited to drive Gasbarre's furnace systems into the future. Gasbarre has plans to not only design and service its equipment but to eventually establish a technical center for process testing and demonstration purposes. Ben Gasbarre stated, "The move will allow us to better utilize our highly-skilled personnel to accelerate advancements to our products, technology and services."

Expansion in St. Mary's will be necessary, so plans have begun for an additional 12,000 sq. ft. of manufacturing space with additional office and conference room capacity. This will be a significant investment in the furnace operations to drive manufacturing, technology and growth into the future.



Other News; Gasbarre recently installed its brand new vacuum purge nitriding furnace for the growing demand in the US market. This system has been fully developed by the Gasbarre team partnered with SSI for the

furnace control system. It is an exciting development for the domestic market to have a fully integrated system, designed and supported in the US.

Heat Treat Auctions-And More Auctions

Dec 5, 2019

Today, Thursday December 5/2019 there are two auctions taking place, both of which include a great deal of heat treat equipment. The first is in Mentor, Ohio, USA at the former **Angstrom Precision Metals** facility which is now closed. We mentioned this the other day and how it includes a total of 7 smaller Surface Combustion Allcase furnaces. We don't expect much of the equipment to sell based on the age and small size but you never know. By the way we stand corrected on our earlier statement that the facility closed down recently. As it turns out the plant closed over a year ago which means the equipment has been sitting there in place ever since.

The other auction of the day takes place in Kitchener, Ontario, Canada at what was a **Bluewater Thermal Processing** facility which closed down recently. It includes a number of batch IQ furnaces with working dimensions of 36" X 72" X 36", a couple of mesh belt lines, some really cool aluminum processing equipment and some other related equipment. We have these photos of the plant. The first shows the newest batch IQ furnace shortly after it was installed back in 2014. In the centre we see Mr. Shawn Scott, the former GM of the plant-not sure what he is up to these days. The second photo is the facility as we saw it a few weeks ago.



Ipsen Supplies Four Vacuum Furnaces for Additive Manufacturing Production

Dec 4, 2019

Ipsen USA was recently awarded an order to supply a West Coast aerospace customer with four TITAN® H6 2 bar vacuum furnaces that will be used for heat

treating additively manufactured parts in full-scale production. Ipsen shipped two of the furnaces in November and will ship the remaining two in January.

“Ipsen has the industry’s best lead time with the TITAN® furnace. This, coupled with a product designed specifically for the AM industry, made Ipsen the obvious choice for this project,” said Ipsen’s Vice President of Sales Pete Kerbel.

TITAN® furnaces achieve powerful performance using cutting edge technology and predictive maintenance capabilities all while maintaining a global platform, small footprint and short delivery times. The TITAN® H6 has a load size of 36” wide x 36” high x 48” deep and can process up to 3,000 lbs.



Additive manufacturing (AM) is changing the landscape for production and design with the ability to produce complex components made to rigorous standards with short lead times. Heat treating is an important step in post-processing most metal AM parts to meet strength and material density requirements.

Ipsen has been working with 3D printer manufacturers for almost a decade and recognizes the importance of serving this rapidly growing industry. While AM has primarily been used for prototyping and low volume production, companies are now looking to AM for high volume, mass-produced metal parts.

Ipsen is committed to keeping pace with emerging technologies to build the next generation of furnaces. As additive manufacturing becomes more desirable, Ipsen is working to ensure customers have the right products for their evolving needs.

For more information on how Ipsen can support your additive manufacturing needs, visit www.ipsenusa.com/processesand-resources/processes/additive-manufacturing.

Solar Manufacturing Builds MuShield’s First Vacuum Furnace

Dec 3, 2019

“The MuShield Co. of Londonderry, New Hampshire, has commissioned Solar Manufacturing to design their first-ever vacuum furnace. The furnace, built with a SolarVac® Polaris control system and fully compliant to AMS2750E pyrometric specification, is designed to accommodate loads up to 36” wide x 36” high x 72” deep, and a maximum weight of 5,000

lbs. The Solar furnace operates at a vacuum level of 10-5 Torr with the capability of maximum temperatures up to 2400° F, and features an external quench system designed for pressures up to two bar. MuShield is expanding with additional space which will house the new Solar furnace. The company aims to better serve the magnetic shielding industry by providing material designed to protect sensitive electronics from magnetic fields.

“MuShield was already aware of our excellent reputation in the industry, and they were impressed with our facility when they visited earlier this year,” comments Jason Davidson, Solar Manufacturing’s Northeast Regional Sales Manager. “They were also impressed with results of testing performed for them by Solar Atmospheres, so we’re pleased they have placed confidence in Solar Manufacturing to provide their first vacuum furnace.”



Solar Manufacturing designs and manufactures a wide variety of vacuum heat treating, sintering, and brazing furnaces and offers replacement hot zones, spare parts, and professional service. To learn more about Solar Manufacturing contact Pete Reh, VP of Sales, at 267-384-5040 x1509, or via email pete@solarmfg.com or visit us at www.solarmfg.com.”

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Angstrom Precision Metals, Mentor, Ohio, USA

Dec 3, 2019

The Angstrom Precision Metals facility in Mentor, Ohio (*a manufacturer of a wide variety of automotive components*) recently closed throwing all of their equipment on to the used market. This includes quite a bit of machining equipment along with a very sizable heat treat department. The heat treat department consists of a total of 7 Surface Combustion batch IQ furnaces which should get a lot of heat treaters rather excited at the prospect of some good bargains. However these are pretty tired, worn out furnaces with very small capacities. Our prediction is that some of the equipment will sell for bargain basement prices, the rest will be scrapped which is always a shame but we know from experience that that there is very limited market for these older, smaller furnaces.



Stephen Harris, Bodycote-The Interview

Dec 2, 2019

We are excited to be sharing with you an interview with Mr. Stephen Harris, CEO of UK based Bodycote, the world's largest commercial heat treater and the most influential individual in the North American Heat Treating industry <https://themonty.com/articles/> Stephen offers us his thoughts on why Bodycote is as successful as they are, gives us his opinion about Hot Isostatic Pressing and also talks about various technologies and why some fit in the Bodycote model and some don't. It really does make for quite an interesting read. Stephen, in preparation for this interview I went through my notes and re-read the interview we did a few years back (this can still be found at <https://themonty.com/project/stephen-harris-bodycote/>). One of our favorite questions when doing an interview is to ask how each individual got involved in heat treating. With your permission I will refer back to that original interview for our answer:

“I was trained as an electrical engineer but along the way I acquired a business degree from the University of Chicago. While my job history is varied it would be best described as a general industrial background. This would include long working stints in the Chicago area and Buffalo, in several cases running the North American operations of UK companies. I was approached by Bodycote in 2008 to replace the outgoing CEO, Mr. John Hubbard with whom I have since had a long and enjoyable working relationship. I became CEO of Bodycote in January 2009 mainly because I found it such an interesting company.”

When you started in 2009 the Bodycote share price was 122 pence; November 27th 2019 the share price stood at 887 pence. Now, granted 2009 was the depth of the worst recession since the 1930s but this still represents a tremendous appreciation. To what do you attribute this?

“We have done a lot to improve the business. Our margins run at about 19% these days as an average across the business, whereas back in 2008, before the great recession, they peaked at around 13%. The improved performance is predominantly due to better productivity. Today we have about 5,700 employees with sales of £728 million compared with over 7,500 employees and sales of £551 million back then.”

“A key focus has been improving operations. We have always had great heat treaters in the business but we have made great strides in injecting operational skills. The facilities are better laid out and far safer than they used to be. We measure our customer service levels at each of the plants. Customer service is, of course, a key attribute in our industry. If customer service falls at a facility, profits soon follow.”

“In addition to hiring great people, a lot of capital investment has been required to enhance the plants. In many instances we decided replacement was a better option. Since 2009 we have closed 70 facilities and opened or acquired 52. We now have 189 facilities around the world having acquired two more this year in Scandinavia and Slovakia.”

“I think it is also fair to say that our growth in the less developed countries of Eastern Europe, Mexico, and China has also helped performance. It is very easy

to lose money in unfamiliar territories and it is definitely high risk, but if you get it right the rewards are respectable.”

How does the Bodycote model differ from other commercial heat treaters?

“We call our commercial heat treatment business “Classical Heat Treatment” to distinguish it from Specialist Technologies which we can talk about later. In the Classical Heat Treatment business, we tend to approach the market somewhat differently to most commercial heat treaters. We are a large company and have a very sound financial basis. We also carry around \$750 million in insurance. This means that very large companies, including many of the world’s largest OEMs and Tier 1 suppliers, are quite happy to do business with us knowing that we can stand behind our commitments. We often hear about small commercial heat treaters that venture into doing business under onerous trading terms which they are happy to sign. The problem is that when they have a quality escape, the OEM ends up owning the heat treater, which is not what anybody wanted.”

“Apart from our bias towards large customers I would say the biggest difference between us and most commercial heat treaters is our focus. We do not attempt to do business with wildly different customers from an individual plant. Our plants are segregated between those serving the aerospace industry and those serving automotive. We have learnt that these two different types of customers require a different focus. Furthermore, we segregate high volume plants from lower volume/high flexibility plants. We also operate on a local cluster basis with all the plants in a cluster working together. In this way we can limit the number of technologies in any one plant but are still able to provide all the technologies that a customer may need in any area. It is a dangerous temptation to keep adding technologies to a single plant. The extra complexity drives up costs and lowers customer service. It is not about heat treatment knowledge, it’s about production complexity. Keeping things simple is by far the best approach. Of course, it’s our size and number of facilities that allows us to achieve these economies of scale.”

While most of our questions focus mainly on heat treating we should also talk about your Hot Isostatic Pressing division. Perhaps you could share a few thoughts about the “HIP” side of things such as whether this is a growing field and whether it overlaps with heat treating.

“Our HIP business sits in our Specialist Technologies division, which I referred to earlier. The other businesses in the division are Surface Technology (plasma, HVOF and thermochemical coatings), S³P (Specialty Stainless Steel Processes) and Powdermet® (contract manufacturing of products from powder using HIP and 3D printing technologies). We also have two other specialist technologies which are heat treatment types of processes. These are Low Pressure Carburizing and Corr-I-Dur® (these last two operate within the Classical Heat Treatment facilities). In the Specialist Technologies division, each technology has its own dedicated facilities which are quite separate from the heat treatment business. They also have their own management and sales forces. So, as you can see, we do not believe there is any real overlap between HIP and heat treatment.”

“We are aware of a number of heat treaters going into the HIP business. History suggests that this is a very risky move. It is an expensive business to get into and the maintenance costs are astronomic, which is not something the suppliers tend to advertise. Replacement of a molybdenum furnace will cost you well over \$1 million for a large HIP and, unfortunately, unlike vacuum furnaces they fail quite regularly. Bodycote has acquired quite a number of HIP vessels over the years from companies both small and large that have attempted to enter the HIP industry and failed quite spectacularly. Most of the new entrants are going in at the small end, targeting additive manufacturing. I think this is sensible as the risks are lower and that market is growing at a reasonable rate.”

When we spoke all those years ago one of the main topics concerned two acquisitions you had recently made, Metal Improvement and Carolina Commercial. The Carolina Commercial acquisition raised a few eyebrows at the time due to the relatively high sale price. In retrospect was this a good decision?

“A good question. I would say the results of that acquisition were mixed. The Metal Improvement acquisition was much better. The fact that Carolina Commercial had been held by a Private Equity firm for a number of years was clearly a problem. Many PE firms do not have a great knowledge of running businesses themselves and they tend to underinvest. This was the case with Carolina Commercial. Of course, it didn't help that shortly after acquisition there was a fire that destroyed

one of the facilities. Given the opportunity again I would have still tried to acquire Carolina Commercial, but we would have approached it differently, paying less and going into turnaround mode straight away.”

My understanding is that Bodycote is considering all heat treating technologies currently available and amongst the criteria for new equipment is the degree to which it is environmentally friendly. Would you care to comment on this? Perhaps comparing vacuum carburizing systems to batch IQ furnaces?

“Well, Gord, I wouldn’t quite state it like that. We avoid some technologies. We do not like salt both for environmental reasons and because of poor production flexibility. We avoid continuous processes such as mesh belts and pushers, once again due to limited flexibility and poor carbon footprint. When times are tough these types of technology tend to lose money. Obviously continuous processes with salt quenching are highly unattractive to us!”

“We do like vacuum carburizing. This is primarily because of the better results you get for specific applications. Unfortunately, there is not a great deal of demand for vacuum carburizing today outside of the automotive OEMs and the equipment cost is very high.”

Nobody in the heat treating industry will argue with me when I say that Bodycote is the only truly global commercial heat treater. That being said, which geographic areas of the world do you see as offering the largest growth potential to your company?

“We spoke earlier about the lower developed countries in Eastern Europe, Mexico and China which clearly offer good growth, albeit at high risk. I still see the largest growth potential as being the United States. Aside from the natural growth rate of the US economy itself, the amount of work available that today is being done quite inefficiently by many manufacturers in their captives is very large.”

A good friend of ours and a very respected individual in the heat treating industry, Mr. Dan McCurdy, recently retired as President, Bodycote Automotive and General Industrial Heat Treatment, North America and Asia. There has been a lot of discussion about who is replacing Dan (and we

confess we have fueled some of this speculation). Could you please explain to us how you are filling this position?

“We will miss Dan tremendously. He has been a key member of the team for many years. Replacing Dan was always going to be very difficult. So we didn’t really replace him. Instead, we reorganized the company. Dan’s North American Automotive and General Industrial (AGI) business now reports to Tom Gibbons. Tom also runs the North American Aerospace, Defense and Energy (ADE) business. Tom has five Vice Presidents of Operations reporting to him that run the sub-divisions of: Automotive, General Industrial, East, Central and West.”

“The European ADE business now reports to the two European Classical Heat Treatment Presidents, one for Northern and Eastern Europe and one for Western and Southern Europe. These are run by Paul Clough and Eric Denisse respectively. Paul is also responsible for Asia.”

“We then have the Specialist Technologies division run by Thomas Oury.”

“The accounting and other central functions, such as HR, are then taken care of outside of the divisions in shared service centers. In the US this is in Dallas.”

This question ties in with the previous one: how much autonomy does each general manager have? For instance, if the GM of plant XYZ wants a new furnace how long a process would it take to put this in motion?

“Our operating philosophy is to not try to centralize or tell the GM’s how to run their businesses from headquarters. We give them guidance as to our corporate strategy and general direction, our expectations for customer service, safety, and financial returns. There are specialists that can help them with specific issues if they need it. It a tough job but the rewards can be high. It is a job that carries a great deal of satisfaction if performed well. There is a great deal of recognition. If a plant does well it is down to the GM. In large part, how the GMs succeed is up to them, but we do have a number of rules that have to be followed. Foremost of these is that they cannot buy businesses or properties. This is done by our M&A team, which includes Mario Ciampini who many of your readers know well.”

“Investing in a furnace comes under our capital investment rules. We require a specific rate of return that depends on the risk. A GM can submit a request as long as it justifies the required return. The first thing we do is then look for unused or

underutilized furnaces already in our network. With over one thousand primary furnaces and many more temperers in operation, and more in storage, we can sometimes fill the need straight away. The majority of the time taken in getting a capital item approved is taken up with the GM and the divisional team doing their homework. We do not buy equipment on a whim. Once a case has been developed and submitted it can take a few weeks to get approved if it fits with the strategic vision for the Group. If it doesn't it can take a very long time. Requests for large mesh belts with salt quench somehow never seem to get answered!"

Bodycote is of course headquartered in the UK but there have been some rumors suggesting that the company might move the headquarters to another country in Europe. Is this something you can comment on?

"Bodycote is a UK registered company and is listed on the London Stock Exchange. The registered office remains in Macclesfield, UK. A new management office has been opened just outside of Geneva where a number of senior managers are based, though we have regional headquarters in Dusseldorf, Germany; St Priest, France; Prague, Czech Republic and Dallas, Texas."

When we spoke a few years back you estimated that captive heat treating represented 80% of the total market and commercial heat treating the remainder. Is this still the case? Part II of this question would be: is the company still interested in taking over the heat treating requirements of some of these captives? If my memory is correct I believe I saw a press release from Bodycote a little while ago mentioning that you had signed a long-term contract with Rolls-Royce which would indicate that the answer is 'yes'.

"This is a statistic that is almost impossible to measure accurately. While we have seen a general slow trend for companies to outsource their heat treatment this is offset by very high growth in countries such as China and India, where the high-quality heat treatment is overwhelmingly done in-house. My guess is that if you could measure it accurately you would find that there is now more done in-house than there was ten years ago due to this effect."

"Bodycote is always looking actively to take over captives. We are often approached to do this, however we are not interested in high volume operations

where the only motivation is for the customer to swap their balance sheet for ours. In fact, it is quite rare for us to take over a captive. When we do buy a captive we more often than not scrap the equipment and invest in more flexible, fit for purpose equipment. At the end of the day, we are an aggregator and we need equipment that allows us to do this. In many instances we do not take work that is already being done in-house. Instead, we will be working with the OEMs, such as Rolls-Royce, and will take the products before they have ever been treated in-house.”

Stephen, what can we expect to see from Bodycote over the course of the next year? Are there any exciting new developments you could share with us?

“Gord, we expect to see several very exciting new things happening in the next twelve months in both our Classical Heat Treatment business and our Specialist Technologies. Unfortunately, there aren’t any that I am allowed to share with you at this time.”

Thanks for taking the time to talk with me. Stephen as always I appreciate your time and candid, open answers. Gord



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Stack Metallurgical Group Augments Hot Isostatic Pressing Capacity with Second System from Quintus Technologies

Dec 2, 2019

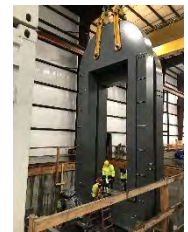
“Spurred by a successful entry into Hot Isostatic Pressing at the beginning of this year, Stack Metallurgical Group is redoubling its commitment to the technology with the addition of a second Hot Isostatic Press (HIP) from [Quintus Technologies](#). A trusted provider of heat treating and metal processing services to quality-critical industries, Stack is now investing in a model QIH 122 M URC®, which features a work zone of 26.0 inches (660 mm) in diameter and 68.9 inches (1,750 mm) in height. The new system follows the installation of [a high-capacity Mega-HIP](#), the QIH286 M URC®, with a work zone of 63 inches (1,600 mm) in diameter and 102 inches (2,591 mm) in height. “We’ve been extremely happy with the market response as we have expanded our service offerings to include [HIP](#),” states Doug Puerta, CEO, [Stack Metallurgical Group](#). “The massive size of our first unit enables us to process larger castings and/or powder metal components. The new unit now allows us to efficiently process a wider range of materials and lot sizes and is ideal for moderately sized components. The capabilities and capacity offered by these two units further strengthens the value proposition that Stack facilities provide their clients.”

Like the Mega-HIP, the QIH 122 M URC is equipped with the Quintus proprietary [uniform rapid cooling](#) (URC) feature, which combines HIP and heat treatment in a single process. Known as high pressure heat treatment (HPHT), this innovative approach streamlines the steps involved in material densification and heat treatment. It enables all processed components to cool uniformly, resulting in minimal thermal distortion and non-uniform grain growth. The improved material properties are essential for parts designed for demanding applications—in aerospace, medical implants, and power generation, for example. The burgeoning [additive manufacturing](#) (AM) environment played a large role in Stack’s decision to expand its HIP portfolio. “We see opportunities not only in traditional markets such as castings, but also in emerging markets, with additive manufacturing being the most notable,” Mr. Puerta says.

***The new press, which operates at a maximum temperature of 2,552°F (1,400°C) and a maximum pressure of 30,000 psi (2,070 bar), will be installed in Stack's recently completed facility in Albany, Oregon.*

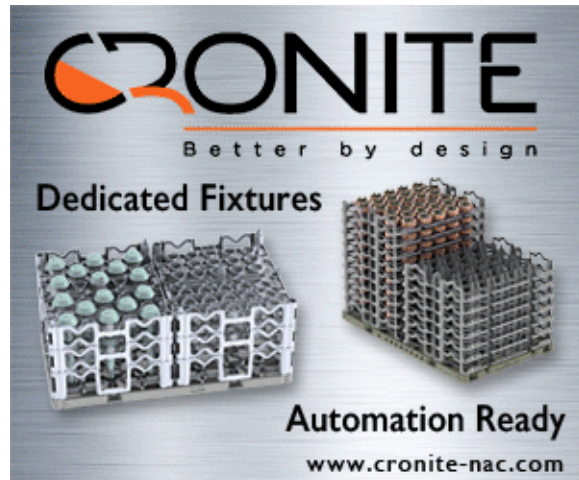
"HIP is an important contributor toward our objective to be a one-stop shop for our clients, as we can now service a broad range of manufacturing milestones," Dan Ederer, Stack Corporate President added, "Quintus has been a great partner since we first began exploring an entrance into HIP. Quintus has provided unique solutions including size, pressure, and cooling rate capability, which has in turn enabled us to partner with our clients in a more comprehensive manner."

"Stack's decision to invest in a second Quintus HIP is a tribute to our leadership position in the industry," says Jan Söderström, CEO of Quintus Technologies. "As the need for Hot Isostatic Pressing steadily increases, we are very pleased with this next step in our relationship."



About Quintus Technologies; *Quintus Technologies is the global leader in high pressure technology. The company designs, manufactures, installs, and supports high pressure systems for sheet metal forming and densification of advanced materials. Quintus has delivered over 1,900 systems to customers within industries such as aerospace, automotive, energy, and medical implants. The company is headquartered in Västerås, Sweden, with a presence in 45 countries worldwide. For more information, go to www.quintustechnologies.com*

About Stack Metallurgical Services, Inc.; *With a history dating back to 1946, the Stack Metallurgical Group has grown to become the most versatile provider of heat treating and metal processing services in the Pacific Northwest. With its new HIP facility coming on-line in 2019, Stack will offer four Nadcap-accredited locations with a focus on the aerospace, power generation, medical implant, and high-end knife and cutlery markets. The company's modern and extensive equipment line-up offers a comprehensive portfolio of services for demanding clients throughout North America. With a range of aerospace OEM approvals for heat treatment, Stack has built trusted relationships with aerospace titans like Boeing, General Electric, Consolidated Precision Products, and Precision Castparts. Read more about Stack: www.stackmet.com"*



HMW in Ybbsitz, Austria Adding Capacity

Dec 2, 2019

It's kind of a coincidence that we have run across the name Robert Noebauer several times recently. We had this news item about Robert October 27th of this year; *“Robert Noebauer who has had a long distinguished career in the heat treating industry in Austria has a new job. We first met Robert when he was working for commercial heat treater and furnace manufacturer, **Rubig** in Wels, Austria. Since then he has moved on to become CEO of commercial heat treater HMW in Ybbsitz, Austria www.hmwelser.com.* His name comes up again today as the company he is running, commercial heat treater HMW in Ybbsitz is adding more hardening capacity. The furnace is being built by a German manufacturer and will be in production February 2020. You can see Robert and Alexander Desch, Purchasing, IT and Plant Management at HMW standing in the partly completed furnace and also at the recent heat treatment exhibition in Cologne, Germany.



Aerojet Rocketdyne Auction

Dec 2, 2019

“Machinery Marketing International, in collaboration with Hilco Industrial, has announced a large industrial auction of Aerojet Rocketdyne manufacturing equipment. Aerojet Rocketdyne is a rocket and missile propulsion manufacturer based out of California. The auction of this 800,000+ sqft manufacturing facility



features advanced large capacity heat & vacuum treating, composite structure forming, CNC machining, quality assurance & more. Key assets in auction include an Abar Ipsen HR-120x152VC 6-Bar MetalMaster Horizontal Vacuum Compression Braze Furnace, Baron 200A650 10' Electric Autoclave, Grieve HB-500 500°F Electric Oven, a Giddings & Lewis 72" CNC Vertical Turret Lathe, and more. Paul Zimmer, CEO of Machinery Marketing International, stated, “We are proud to have been selected as an asset disposition partner for this closure. This facility features rare aerospace equipment including vacuum furnaces and heat treatment machinery, composite manufacturing equipment, large scale turret lathes, and a wide selection of machine tools. The scale and quality of this equipment makes this auction a unique opportunity for buyers.” The live auction will take place December 10/2019.”



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BATCH IQ 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.

Item#IQ470 SOLO Swiss Batch Furnace – Located In Switzerland

Technical data: Manufactured in 2006. In good working conditions before dismounting.

Hardening furnace: Processes : Austenitization – carburizing – carbonitriding, max. temperature 1050°C, 3 heating zones, Main voltage: 3x400V – 50Hz, Max. weight of load 80Kg, Useful dimension : 300 x 300 x 600 mm, Power : 30 kW

Manual manipulator: type cf

Gas cabinet: CH₃OH / N₂ / C₃H₈ / Air / NH₃

Oil tank: max. temperature 100°C, Tank volume: 1200 l, Heating power: 6KW.

PC cabinet: air conditioned with management system type Easytherm Pro

Washing machine: operating temperature 80°C, 2 washing tanks: 2x260 liters, Heating power: 2x 6 KW

Tempering furnace: Nabertherm, independent from the line, Max. temperature 450°C, Max. loading weight: 250

Kg, Chamber dimensions: 750 x 1000 x 750 mm, 400V 3PE _ 50 Hz, without gas.

Location: Switzerland

For Pricing Please Contact Jordan@themonty.com

<https://themonty.com/project/itemiq470-solo-swiss-batch-furnace-located-in-switzerland/>

Item#IQ469 Surface Combustion “Super 30” Batch IQ Furnace

Manufactured by Surface Combustion this is a Batch IQ furnace with working dimensions of 30" X 48" X 30". Batch IQ furnace S/N BX-41206-1. Electrically heated with top cool and updated SSI controls. Built approximately 1980. Set up

for endo atmosphere with ammonia addition. Currently installed but not in use. Furnace is complete, installed and ready to go. Shut down approximately 5 months ago. Excellent condition.

Asking Price: \$49,000 USD

<https://themonty.com/project/itemiq469-surface-combustion-super-30-batch-iq-furnace/>

Item#IQ468 Surface Combustion “Super 36 Allcase” Furnaces (2 available)

“Proelectric” 36” X 48” X 30” High Surface Combustion batch IQ furnaces (2 available). Serial numbers BC-42068-1A and BC-42068-1B. Electrically heated with a maximum operating temperature of 1900F. Top cool, state of the art SSI touch screen controls and SSI oxygen probes. Quench oil filters and rear handlers. Both built in 1983. Currently running on endothermic atmosphere. Very good condition, complete and currently installed. Shut down very recently. **Asking \$69,000 USD Each**

<https://themonty.com/project/itemiq468-surface-combustion-super-36-allcase-furnaces-2-available/>

Item#IQ465 Surface Combustion “Super 36” Batch IQ Furnace

Manufactured by Surface Combustion in 2001 this is a gas fired batch IQ furnace with working dimensions of 36” X 48” X 36” and a weight capacity of 3500 pounds. Set up for endo atmosphere. Pneumatically actuated quench elevator , top cool, furnace fan and updated SSI touch pad controls. Currently installed but not in use. Very good condition.

Asking Price \$160,000 USD

<https://themonty.com/project/surface-combustion-super-36-batch-iq-furnace/>

Item#IQ463 Ipsen T-7 Batch IQ Furnace

Ipsen Model: T7-1000-DGM Batch IQ Furnace. Serial #52044. Type: Straight Through Atmosphere Integral Quench Furnace

Processes: Carburizing, Neutral Hardening and Carbonitriding

Heat Input: Natural Gas-Fired (12 Silicon Carbide Radiant Tubes)

Work Zone: 30"W x 48"D x 20"H

Max. Temp: 1850°F (Typically operated at 1750°F)

Max. Load Wt.: 1350 lb at 1550F

Quenchant Heating and Cooling: Yes (SBS Oil Cooler)

Loading/Unloading: Ipsen "T7 Trans. Loader" powered Front-end Loader and Roller Unload Table

Pit Required: None

Carbon Control: SSI Gold Probe

Controls: Super Systems, Inc. 9120 touch screen, with SSI Series 7 & 7SL controllers, Digital data logging (currently tied into plant-wide SSI Super Data system)

Insulation Type: Brick-lined

Condition: Refurbished by Unitherm, Converted to Eclipse Recuperative Burners (still under warranty)

Included: Any available spare parts, Ammonia Tank.

Footprint: 8'-6" Wide x 27' Long x ~14-1/2' High

Alloy: Grids and baskets may be available

Asking Price \$59,000 USD

<https://themonty.com/project/itemvf350-ipsen-t-7-batch-iq-furnace/>

Item#IQB461 Surface Combustion Batch IQ

Surface Combustion Batch IQ Furnace. Standard Surface Combustion Integral Quench Furnace with single quench cylinder and rear handler. This furnace has "Trident" type radiant tubes with Eclipse burners and Eclipse recuperation. Natural gas fired 1,000,000 BTU's. Serial Number BX-35790-1. Max operating temperature 1750°F with a voltage of 460/3/60. Working

dimensions of 30"W x 20"H x 48"L. Approximate external dimensions 10'w x 10'h x 15'l. Controls: Mounted and wired in a free standing panel includes a current SSi control system with PLC and computer. Very good condition and available immediately.

Asking Price \$65,000 USD

<https://themonty.com/project/itemb461-surface-combustion-batch-iq/>

Item#IQB445 Surface Combustion Batch IQ's (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. Furnaces were in operation until February 27th 2018, now in indoor storage in the Detroit, Michigan area. Complete and in good operating condition. Alloy and brickwork in reasonably good condition.

Asking Price \$99,000 USD Each Loaded On A Truck

<https://themonty.com/project/itemb445-surface-combustion-batch-iqs-3-available/>

Item#IQ441 GM Batch IQ Furnace

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 USD

<https://themonty.com/project/itemb441-gm-batch-iq-furnace/>

Item#IQ439 Surface Combustion Batch IQ Furnace

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.

Asking Price \$80,000 USD

<https://themonty.com/project/itemb439-surface-combustion-batch-iq-furnace/>

Item#IQ438 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" and a Holcroft Spray/Dunk washer with heating system 30" X 48" X 30". Complete, in very good condition and ready to go.

Asking Price \$60,000 USD

<https://themonty.com/project/itemb438-holcroft-batch-iq-furnace-line/>

Item#IQ398 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 Price \$125,000 USD

<https://themonty.com/project/itemb398-sauder-batch-iq-line/>

BATCH 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.

Item#B474 New Pyradia Inert Atmosphere Retort Furnace

Furnace Construction: Bottom Loading Retort Electric Furnace w/ Semi-Automatic Electro-Pneumatic. Loading Cart. Ceramic Fiber Insulation. RA330 Sealed Retort Construction. Primed & Painted 3/16" Steel Shell. Working Dimensions: \varnothing 36" x 30"H. Retort Inside Dimensions: \varnothing 44" x 36"H. Design Temp: 2000F. Working Temp: Up to 1800F. Uniformity: +/-25F @ 1800F. Heating Power: 180KW, Watlow SCR. Heat-Up Ramp: Ambient to 1800F in 120 min (loaded oven). Max Gross Load: 800lbs. Heating Element Type: Sandvik ROB Heating System w/ APM Heating elements. Furnace Atmosphere: Argon/H₂ Mix (<4%). Voltage: 600/3/60. Amperage: 200 amps. Recirculation Fan: Plug Type, Radial, 3 HP, Water Cooled. Cooling: External to retort, 5 HP blower with additional 1/2 HP forced air fan. Instrumentation: AMS2750E, Type B compatible. Gas Panel: Complete Ar/H₂ gas panel with flowmeters, pressure regulators, manual & solenoid valves & flow switches, SSI O₂ sensor, SSI Dew point sensor. Controls: NEMA 12 electrical enclosures, Micrologix PLC, Kep 7" Touchscreen HMI, Eurotherm Nanodac Temperature Controller, Eurotherm 3216 Limit Controller, Eurotherm 6100A, Digital Chart Recorder w/ Up to 12 Recording Inputs for Load TCs, Batching capability, Bar Code, Scanner, Uninterrupted Power Supply (UPS), 1-Ton Air cooled Temptek TCU, CSA Approved. Extras: 2x Forced Air Cooled Tables, 2X Carbon Fiber Fixture Grids. NEW!

Asking \$375,000 Canadian (Approximately 295,000 USD)

<https://themonty.com/project/itemb474-pyradia-inert-atmosphere-retort-furnace/>

Item#B473 Pit Carburizing Furnaces (2 available)

Manufactured by Surface Combustion these are gas fired units with an operating temperature of 1750 F. SSI controls. Working dimensions of 48" X 72". Endo

atmosphere with recirculating fan in the bottom. Currently installed but not in use. Excellent condition.

Asking \$150,000 USD Each Loaded On A Truck

<https://themonty.com/project/itemb473-pit-carburizing-furnaces-2-available/>

Item#B472 Ionitech's Plasma Nitriding Cold-Wall furnace

Ionitech's Plasma nitriding Cold-Wall furnace ION-75CWI, with 2 Chambers and one control. The furnace is capable of Plasma Nitriding, Plasma nitrocarburising, and Post-oxidation, processing big and small parts and tools. The furnace has been used for 4 years at Ionitech's facility and has been taken care of perfectly – it is good as new. It still works daily. It has been retrofitted to work with our absolutely user-friendly touchscreen control panel. The process is really easy to control. Ionitech gives full time support as maintenance and technology after purchase. Working dimensions of Chamber 1 are Ø 1000 mm x 1100 mm and max weight of tool for processing 1500 kg. Chamber 2 – Ø 750 mm x 2000 mm and max weight of tool for processing 1500 kg. Purchase can be done with only one chamber. Located in Europe.

For Pricing Please Contact Jordan@themonty.com

<https://themonty.com/project/itemb472-ionitechs-plasma-nitriding-cold-wall-furnace/>

Item#B471 Lindberg Pit Nitrider

Lindberg Pit Nitrider. Lindberg Cyclone "Pit Nitriding" furnace with removable fan assembly & retort. There are twelve (12) bolt locks which seal the fan assembly to the gasket on the retort. Fan assembly sets on a steel stand when not in use. Alloy retort sets in a steel support when not in use. Electrically heated with a voltage of 230/3/60/105 kW. Model # 3896-E12 and serial # 14030. Max operating temperature is 1250°F. Working dimensions of 36" diameter x 84" deep with external dimensions of 5'w x 9'4"H x 7'l – Furnace Only. Controls mounted and wired in a free standing panel includes all necessary controls for proper operation.

For Pricing Please Contact Jordan@themonty.com
<https://themonty.com/project/itemb471-lindberg-pit-nitrider/>

Item#B452 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 (Al₂O₃) 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 Price \$99,000 USD**

<https://themonty.com/project/itemb452-aht-fluidized-bed-furnace/>

Item#B448 Kleenair Products Tip Up Style Furnaces

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 Price \$55,000 USD Each

or

\$150,000 USD For All Three

<https://themonty.com/project/itemb448-kleenair-products-tip-up-style-furnaces/>

Item#B436 Lindberg 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

<https://themonty.com/project/itemb436-lindberg-pit-gas-nitrider/>

Item#B426 Plateg 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 1250 mm high. Load capacity 1000 kg. Installed power 95 kW, 400 V, 50 Hz, 160 A. Located in Turkey.

Asking Price \$98,000 Euro

<https://themonty.com/project/itemb426-plateg-plasma-nitriding-unit/>

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 USD

<https://themonty.com/project/itemb415-j-l-becker-car-bottom/>

Box 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.

Item#BOX470 GLOBAR Heated Box Furnace

Manufacturer: Pereney

Inside Dimensions: 18" high x 18" wide x 18" deep

Heated: Electric, 440/3/60, 34 KW

Temperature: 2700 deg. F

Model Number: SM-7800-117

Serial Number: N/A

Description & Features: Manual hinged door. Fully brick lined heat chamber. Silicon carbide hearth. Globar heating elements above and below the hearth. Tap changing transformer.

Temperature Controls: Wall-mounted control panel with indicating controller and overtemp.

Condition: Very good.

Asking Price \$11,500 USD

<https://themonty.com/project/itembox470-globar-heated-box-furnace/>

Item#BOX469 SierraTherm Forced Convection Elevator Batch Oven

SierraTherm LTCC16-24-4A 8500 Series Forced Convection Elevator Batch Oven. The internal dimensions of the chamber are approximately 18" inches wide by 18" inches deep by 24" inches high. The advertised temperature achievable is 1050°C. The Oven comes with the two computers, one monitor, one mouse, & one keyboard, as shown. One computer has the SierraTherm Furnace Monitoring System Software loaded on it, as shown. The power requirements are 240Vac 3-

phase 60Hz. Each of the computers power-up although only one has the SierraTherm Furnace Monitoring System Software loaded on it.

Asking Price \$42,500 USD

<https://themonty.com/project/itembox469-sierratherm-forced-convection-elevator-batch-oven/>

Item#BOX468 SierraTherm Elevator Hearth Box Furnace

Model; LTCC-16-24-4A. Voltage; 240V 3Ph 109A 60Hz. Maximum operating temperature of 1050 degrees C. Working dimensions of 16" high x 24" wide x 24" deep.

General Application Parameters:

- o Maximum Temperature Rating: 1050° C
- o Atmosphere System: Designed for air atmosphere.
- o Heating Method: Ceramic fiber block with imbedded resistive wire heating elements.
- o Batch processing: bottom load elevator

Rated to 1050 °C, this SierraTherm Series features an energy efficient, ultra clean, low mass refractory heating chamber. All models include the MicroTherm Windows based user interface with 20 segment temperature and gas flow programming. Temperature cycling can be programmed using starting and ending temperature, rise and cooling rates, and time duration. Multiple vertical heated zones, as well as power trimming to all four element panels (left, right, front, back) provide for precise temperature stability and control throughout the process chamber. A sophisticated atmosphere inlet and exhaust system features four independently adjustable gas inlets and corresponding exhaust ports to efficiently extract burn-off effluents throughout the process chamber. Excellent condition.

Asking Price \$59,500 USD

<https://themonty.com/project/itembox468-esierratherm-elevator-hearth-box-furnace/>

Item#467 L & L Special Furnace Box Furnace

Model MDL.FB777-FA11-01-G394-480R39H96, Serial Number H496LN.

Electrically heated 480/3/60/150 kW/187 Amps. Maximum operating temperature of 1800F. Working dimensions of 72"W x 72"H x 72"L (7'Cube Inside), outside dimensions of 9'W x 12'5"H x 8'L. Controls; Mounted and wired in a free standing NEMA 1 enclosure with fused disconnect on the left hand side of the furnace. Honeywell UDC digital temperature controls for control and high limit. Strip chart recorder and process timer is also included. SCR provides consistent power to the heating elements. A cooling blower with filter helps with cooling the enclosure. Furnace is lined with ceramic fiber on all sides, top, and bottom between the castable piers. The door is a double hinged right hand swing type door with four (4) hand wheel clamps for a tight seal. The furnace hearth consists of 4 rows of castable spaced evenly for forklift loading. Hearth capacity is 10,000 pounds. Alloy based nickel chrome coiled heating elements are located on both side walls, rear wall and door which provides uniform heating. There is a 2 HP roof mounted fan in this furnace. Door limit switch cuts power to the heating elements and fan when the door is open. Very good condition.

Asking Price \$47,500 USD

<https://themonty.com/project/item467-l-l-special-furnace-box-furnace/>

Item#BOX466 Grieve Top Loading Furnace

Model# PT-3642, Serial# 140. Manufactured by Grieve this is a top loading furnace with working dimensions of 36" Wide X 42" Deep X 36" Long and a capacity of 31.5 cubic feet. Electrically heated 460/3/60 @ 70 KW, 2,000 F maximum operating temperature. Description; Manually operated counter balance door, brick lined, helical coil Kanthal heating elements on all four sides, gasketed cover fully self contained. Temperature Controls; Honeywell "Dial a Troll" control with "Dial a Pak" Overtemp. Built in 1982. Very good condition.

Asking Price \$14,500 USD

<https://themonty.com/project/itembox466-grieve-top-loading-furnace/>

Item#BOX465 Electra Box Furnace

Electra Box Furnace. Floor model high temperature box style furnace with a manually operated vertical lift door with counterweight for easy operation. A door limit switch cuts power to the elements when the door is opened. The furnace is refractory lined and has a silicon carbide hearth plate supported on brick piers. Twenty four silicon carbide elements mounted horizontally across the furnace chamber, 12 elements over the top and 12 under the hearth for good uniform heating. Electrically heated with a max operating temperature of 3000°F. Model # 6724 and serial # 1184. Voltage of 460/3/60/16 kW. Working dimensions of 8"W x 6"H x 30"L and external dimensions of 44"W x 90"H x 70"L. Controls are located on the right hand side at the rear of the furnace. There is a Barber Colman model 560 digital controller, a Barber Colman 560 high limit and a Barber Colman strip chart recorder. Also on the rear of the unit in a protected area is a Robicon SCR to control the elements and a high limit contactor. A voltage reduction transformer is mounted on the framework under the furnace chamber.

Asking Price \$8,500 USD

<https://themonty.com/project/itemb465-electra-box-furnace/>

Item#BOX464 Lindberg Box Furnace

Lindberg Box Furnace. Pneumatically operated vertical lift door with convenient foot pedal operator. The door slides up and down on the sloped front breast plate. A flame curtain is mounted directly under the door. A limit switch activates a solenoid to start the flame curtain to burn off any escaping atmosphere. The interior is refractory lined. Heavy gauge rod style heating elements are located on both side walls, and on the floor under the alloy hearth plate for excellent temperature uniformity. The alloy hearth pan has 2" high sides to prevent product from falling off the pan. Flow meters attached to the side of the furnace regulate the flow of atmosphere into the furnace. There is an Endothermic gas flow meter and a Natural Gas flow meter. Electrically heated with a max temperature

of 2000°F. Model # RO 122410-A and serial # 19229. Voltage is 480V/3/60/15 kW, 67V. Working dimensions of 12"W x 10"H x 24"L with external dimensions of 54" wide x 64" long x 85" high. Controls are mounted and wired in a separate enclosure. There is a Leeds & Northrup digital temperature controller with display screen and a Leeds & Northrup model 2077 high limit safety. Control switches are flush mounted on the front of the panel. The panel has a Square D flange mounted fused disconnect switch. Honeywell flame safety relay, purge timer relays and control transformer are mounted inside the enclosure A second enclosure with circuit breaker disconnect switch houses the Halmar SCR power controller. A step down transformer is supplied to provide low voltage to the elements.

Asking Price \$7,500 USD

<https://themonty.com/project/itemb464-lindberg-box-furnace/>

Item#BOX458 Noble Furnaces Box Furnace

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

<https://themonty.com/project/itemb458-noble-furnaces-box-furnace/>

Item#BOX425 Lindberg Box Furnace

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 Price \$85,000 USD

<https://themonty.com/project/itemb425-lindberg-box-furnace/>

Item#BOX397 Drever Atmosphere Box Furnaces

“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 Price \$325,000 USD Each

<https://themonty.com/project/itemb397-drever-atmosphere-box-furnaces/>

Item#BOX374 R&G Services 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 USD

<https://themonty.com/project/itemb374-rg-services-atmosphere-box-furnace/>

CONTINUOUS 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.

Item#C352 Can Eng Mesh Belt Furnace

This is a complete mesh belt furnace line consisting of;

- -Metro Scale vibratory loading system
- -Pre Wash
- -High Heat Furnace. 36" Wide belt with 3" clearance over belt. 500 pounds per hour capacity. Gas fired with eclipse recuperated burners, 3 heating zones, 1750 Deg F, 9 lbs/ft², endothermic atmosphere, underground oil quench tank. 797,000 BTU/hour input. Brick work in very good condition.
- -Post Wash
- -Mesh belt temper furnace. 700F operating temperature. 500 pounds per hour. Gas heated.

Line is installed, complete and operational but not currently in production. Spare parts including a mesh belt are included. Built in 2000. Overall in very good condition. Perfect for processing fasteners.

Asking Price \$150,000 USD

<https://themonty.com/project/itemc352-can-eng-mesh-belt-furnace/>

Item#C351 SOLO Swiss Conveyor Furnace – Located In Switzerland

Technical data: Continuous furnace SOLO 322.1-10/80. Manufactured in 1991. Serial number: 916921. Maximum

temperature: 1150°C. Power: 8 KW. Voltage: 380-3LPE. Useful height: 50 mm. Furnace length: 5m32. Useful width: 100 mm. Heated length: 1000 mm. Cooled length: 2600 mm. Overall dimensions: length 5m32 / height 1m60 / width 91 cm. In good working conditions before dismounting.

Packing: 3 parcels

Processes : Brazing – Annealing – Tempering – Stress relieve – Quenching

Location : Switzerland

Asking Price \$32,000 USD

<https://themonty.com/project/itemc351-solo-swiss-conveyor-furnace-located-in-switzerland/>

Item#C350 BTU Mesh Belt Furnace

Manufactured by BTU Engineering in Massachusetts, USA this is a mesh belt furnace/dryer, Model TFF141-590N48GT. Belt is 9" wide with 2 ½" clearance over belt. Electrically heated with 19' of heating and a 17' dryer. Operating temperature of the furnace is 1000C and dryer is 200C. Dryer has 4 zones of control and furnace has 5 zones of control. Currently installed and in operation. Very good condition.

Asking Price \$5,000 USD

<https://themonty.com/project/itemc350-btu-mesh-belt-furnace/>

Item#C349 Rotary Hearth Furnace & Press Quench System Available (EUROPE)

Located in Spain we have available an electrically heated Aichelin rotary hearth furnace, HESS quench press and continuous belt washer also made by Aichelin. Rotary hearth furnace was producing 50Kg/hour of parts but based upon the heating power of 100Kw the furnace is capable of 350-400Kg/hour. Operating temperature of 800-900C, maximum temperature 950C. Atmosphere N2 +

CH3OH. Controller with a CO-CO2 analyzer with a Carb-o-Mat controller. HESS press quench system can handle parts to a maximum diameter of 360mm. The entire system was built in 1990 for a major auto parts supplier but saw very limited use, 16,400 hours (approximately 2-3 years) production in total. Currently in indoor storage. **Asking price for the entire system is 150.000€**

Also available is an Ipsen batch temper furnace model Ipsen DL 10 G with working dimensions of 760x1220x760mm. Gas heated with Ipsen Burners and kromschroeder control. Maximum operating temperature of 450C. Built in 1994, very good condition. **Asking 22.000€**

An Ipsen batch washer is also available, model Model: WSD 10 G. Built in 1994. **Asking Price: 8.500€**

<https://themonty.com/project/itemc349-rotary-hearth-furnace-press-quench-system-available-europe/>

Item#C348 BTU Belt Furnace 1100°C

Manufactured by BTU this is a high temperature mesh belt furnace.

Model BTU TFCA94-6-54E48GT, Serial Number RFMT-1. Max Temperature of 1100°C. Hydrogen Capabilities, Belt is 9" wide with 4" clearance over the belt. 6 zones of control with a heated length of 54" heat and a 48" long cool zone. Gas Tight. Excellent condition.

Asking Price: \$69,500 USD

<https://themonty.com/project/itemc348-btu-belt-furnace-1100c/>

Item#C347 SierraTherm Series 2500

SierraTherm Series 2500. Vintage: 2000. Model: 9K9-117C91-

9NCHS. Brazing and Copper Firing Conveyor Furnace. One

Owner – company closed due to retirement of owner bought new from

SierraTherm. Full Manuals included.General Specifications. Belt Width: 9

inches. Heated Length: 117 inches. Cooling Length: 91 inches. Product

Clearance above belt: 1" with 2" baffles. Temperature: 1050 degrees

C. Atmosphere: N2 or H2. Input Power: 200/240VAC. 3Ph, 3 Wire, 50/60 Hz,

46kVA max. Zones Heated: Nine [9]. Entry / Exit Tables: 24". Overall Length 292 inches. Height: 50 inches. Width: 44 Inches. Conveyor Height: 36 inches. Leveling Range: +-1. Belt Speed Range minimum: 1.0/min. Belt Speed Range maximum: 10.0/min. Weight approximate: 4000 lbs

Asking Price: \$89,500 USD

<https://themonty.com/project/itemc347-sierratherm-series-2500/>

Item#C342 Two CM High Temperature Pusher Furnaces

Each system includes ...Common frame with power and control components. Heavy gage welded construction. Atmosphere containment doors with protective atmosphere flushing. "Moly" elements wound a ceramic tube muffle. Alumina brick insulation. Water jacketed cooling section. Microprocessor temperature controller. Phase angle fired SCR control units. Overtemperature protection controller. Type "C" thermocouples.

Model 345-48-3Z. 4" opening x 5" wide x 48" long heating chamber, 3 zones. 54 KW, 480/3/60. Hydrogen/Nitrogen atmosphere with safety system. Max. temperature rating: 1700 deg.C.

Asking Price: \$23,450.00

Model 366-48-1Z. 6" opening x 6" wide x 48" long heating chamber, single zone. 45 KW, 480/3/60. Hydrogen/Nitrogen atmosphere with safety system. Max. temperature rating: 1700 deg.C.

Asking Price: \$22,550.00

<https://themonty.com/project/itemc342-two-cm-high-temperature-pusher-furnaces/>

Item#C341 CI Hayes Mesh Belt Furnace

Used CIHayes Conveyor Type Muffle Furnace. Super Solitaire 27. NH3 & Nitrogen Inlet Flowmeters. Combustible atmosphere system with N2 purge. Inconel Muffle with internal hearth plates. Furnace (6) Nichrome Ribbon

Elements. AD150 (6) Nichrome Ribbon Elements 314SS Mesh Belt rated 3# per linear foot loading @ 2000F. Type: Model LAC-MB-030627-AD. Hot Zone: 27" Long Heated Length, 6" wide Mesh Belt, 3" Work Height. Overall Dim.: Approx 2-1/2' Wide x 5' High x 20' Long. Max Temp.: 2100F (1150C) Continuous at 2000 deg.F Elec Utilities: Furnace 18kw, Contactor Power Switching, Wired 240/3/60. AD150 15kw, Contactor Power Switching, Wired 240/3/60 Controls: Honeywell Temp Control & Honeywell Overtemp Control, Both. Furnace and 150 CFH Ammonia Dissociator. Rear mounted Belt Drive with Indexing Control. Digital speed readout 0-20ipm. Extended Front Entrance Tunnel with Nitrogen Curtains and Burn-off Stack.

Asking Price 18,000 USD Loaded On A Truck

<https://themonty.com/project/itemc341-ci-hayes-mesh-belt-furnace/>

Item#C339 Can Eng Mesh Belt Furnace

Operating temp. to 2050 F. Work zone: 18" wide x 12" high x 132" heated, 33' stainless steel cooling section. Power: 575 volt, 3 phase. 176 KW. 2 zone temperature control. Brick lined chamber. Silicon carbide heating elements above and under the belt. Silicon carbide hearth tiles. 2 tap transformers. Approximate overall size: 8' wide x 7' high x 60' long.

Asking Price 14,900 USD

<https://themonty.com/project/itemc339-can-eng-mesh-belt-furnace/>

Item# C337 Mesh Belt Furnace Line, 4,000 Pounds/Hour

Manufactured by Atmosphere Furnace Company in 1995 this is a complete mesh belt furnace line designed for hardening of fasteners. Gas fired. 4,000 pounds per hour capacity. Line included Metro Scale loading system, hydraulic bin dumper, vibratory shaker and scale, belt width 60". Oil quench and temper. Line is complete, installed but has not been run recently. Very good condition. More details and photos to come.

Asking Price \$250,000 USD

<https://themonty.com/project/item-c338-mesh-belt-furnace-line-4000-pounds-hour/>

Item#C324 C.I. Hayes Mesh Belt Furnace

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

Asking Price \$49,500 USD

<https://themonty.com/project/itemc324-c-i-hayes-mesh-belt-furnace/>

Item#C323 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 used for processing automotive bearings. Recently removed from operation and now in indoor storage. Excellent condition.

For Pricing Please Contact Jordan@themonty.com

<https://themonty.com/project/itemc323-aichelin-cast-link-furnace-line/>

Item#C321 Ipsen 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 Price \$20,000 USD

<https://themonty.com/project/itemc321-ipsen-austempering-system/>

Item#C314 Wellman Roller Hearth Furnace

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 Price \$225,000 USD

<https://themonty.com/project/itemc314-wellman-roller-hearth-furnace/>

Item#C301 Rogers Engineering Cast Link Furnace 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 Price \$650,000 USD

<https://themonty.com/project/itemc301-rogers-engineering-cast-link-furnace-line/>

Item#C269 C.I. 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. Global 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 Price \$29,000 USD

<https://themonty.com/project/itemc269-c-i-hayes-mesh-belt-furnace/>

DRAW/TEMPER OVENS

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Item#T381 Cabinet Oven (2 Available)

Manufacturer: Blue M

Category: Cabinet

Type: Cabinet Oven

Heated: Electric

Model Number: DC-606-G-MP550

Serial Number: DC-9172

Max. Temperature: 600°F

Voltage: 480/3/60/24 kW/34 F.L.A.

Work Area: 36"W x 60"H x 48"L

External Dimensions: 80"W x 93"H x 63"L

Controls: Controls are located in a small enclosure attached to the right hand side. Yokogawa Pro 550 digital programmable temperature controller and a Partlow high limit along with high limit contactor, motor starter, solid state power relays, fuses relays etc. are mounted inside the enclosure. Fused disconnect is mounted on the back side of the electrical enclosure.

Description: This oven has a single swing door with silicon rubber gasket and cam action closure that latches in three places for a good seal. The interior of the oven is constructed of stainless steel. The heating elements and direct driven circulating fan are in a separate compartment above the work area. The heated air is circulated horizontally across the work area through perforated panels on each side. There are nine (9) shelf brackets, three (3) shelves are included.

Shelf brackets are on 6" centers. A manual is included with this oven.

Condition: Excellent – Tested

Availability: Immediate

Asking Price \$14,500 USD

<https://themonty.com/project/itemt381-cabinet-oven-2-available/>

Item#T380 Gruenberg Walk In Oven 450F

ID: 68" wide x 72" deep x 72" high, electric—480/3/60—48kw; 450F recirculating complete with insulated floor, Honeywell digital controls, double swing out front doors. Taken out of production 3 months ago.

Asking Price \$5,000 USD

<https://themonty.com/project/itemt380-gruenberg-walk-in-oven-450f/>

Item#T379 Grieve Oven 36" x 36" x 36"

Manufacturer: Grieve

Inside Dimensions: 36"high x 36"wide x 36"deep

Heated: Electric 460/3/60, 33 Amps, 24 KW

Temperature: 1250 deg.F

Model Number: AB-1250

Serial Number: 95862A1008

Temperature Controls: Partlow Circular Chart Recorder MRC5000.

Watlow Control. Partlow 1161 overtemp.

Description & Features: 1 HP fan motor. Air flow switch. Double swing—open doors. Front to back horizontal air flow. Stainless steel interior. Provisions for 5 shelves, 4 included. Checked out and operational.

Condition: Excellent

Asking Price \$18,500 USD

<https://themonty.com/project/itemt379-grieve-oven-36-x-36-x-36/>

Item#T378 Despatch Recirculating Walk In Oven

Inside Dimensions: 66"high x 54"wide x 68"deep

Heated: Gas fired. 250,000 BTU

Temperature: 500 deg.F

Model Number: V-41

Serial Number: 53101

Temperature Controls: Updated solid state controls.

Tempco CEC-4100 controller. Honeywell overtemp.

Description & Features: Double swing open doors, horizontal air flow, insulated floor with tracks for a cart, powered exhaust blower, top mounted combustion and fan chamber. Atmospheric type burner system. Complete combustion controls and safeties. Oven will be cleaned and painted, checked out and test fired prior to shipment.

Asking Price \$16,500 USD

<https://themonty.com/project/itemt378-despatch-recirculating-walk-in-oven/>

Item#T377 Despatch Aluminum Horizontal Heat Treat Equipment

Manufactured by Despatch Industries this is a horizontal quench aluminum furnace with working dimensions of 40" X 40" X 40". Serial number 162815. Normal operating temperature 1000F, maximum operating temperature of 1050F. Electrically heated, heater capacity 125KW. Control voltage 120V-1PH-60HZ. Designed to heat treat aluminum parts for BF Goodrich. Rated for 500 pounds per load with a heating time of 30 minutes. Complete and in very good condition.

Asking Price \$99,000 USD

<https://themonty.com/project/dispatch-aluminum-horizontal-heat-treat-equipment/>

Item#T376 Grieve Oven 60" x 60" x 60"

GRIEVE TRUCK OVEN TCH-550. Hardworking ovens designed for baking, drying, preheating or any other application where a dependable source of heated air to 550°F is required. Complete with temperature controllers that offer the

latest in heat-sensing technology and built-in floor level guide tracks that make truck loading easy.

Vintage: 2017

ID: 60" x 60" x 60"

125 CU FT

OD: 80" x 91" x 74"

550°F

Blower: 2000 CFM, 2 HP

6" Insulation

Double Doors

24 kW

175,000 BTU

Control Accuracy: $\pm 0.3\%$

Uniformity: $\pm 5^\circ\text{F}$

Temp Ramp: 38 min

Weight: 3160 lbs

2 years old – low use, dark mark on back panel is a *scuff*. UL LISTED CONTROL PANEL. Standard Truck Ovens from Grieve meet the requirements of National Fire Protection Association Standard 86, Industrial Risk Insurers, Factory Mutual and OSHA standards. For some applications, such as those involving flammable solvents or hazardous locations, the above organizations require additional safety devices.

- Controls – Digital, microprocessor based, thermocouple actuated, indicating temperature controller
- Modulating burner on gas ovens
- Motor control push buttons and on-off heat switch
- LED pilot lights
- Safety Equipment—Electric Oven
- Adjustable, thermocouple actuated, manual reset excess temperature interlock
- Separate heating element control contactors
- Recirculating blower air flow safety switch

- Safety Equipment—Gas Oven
- Adjustable, thermocouple actuated, manual reset excess temperature interlock
- Electronic flame safeguard protection
- 325 CFM powered forced exhauster for combustion venting
- Exhauster air flow safety switch
- Recirculating blower air flow safety switch
- Purge timer
- High gas pressure switch
- Low gas pressure switch
- Two pilot safety shutoff valves with leak test stations
- Two main safety shutoff valves with leak test stations
- Valve position indicator on main safety shutoff valves
- Choice of air flow patterns specially adapted for truck processing
- Aluminized steel interior
- Aluminized steel exterior with enamel finish
- Brushed stainless steel control panel face
- Explosion venting latches
- 6" of 10 lbs/cf density industrial rockwool insulation
- Built-in baffles prevent radiant heat
- Silicone rubber door gasket
- Insulated floor with truck tracks
- Adjustable fresh air intake and exhaust dampers
- High pressure recirculating blower

Asking Price \$17,500 USD

<https://themonty.com/project/itemt376-grieve-oven/>

Item#T375 Grieve Walk-In Oven 5'W x 5'L x 6'H

Manufacturer: Grieve

Type: Walk-In Oven with Cart

Model: WTH 566-750

Maximum Temperature: 750F

Work Zone: 5'W x 5'L x 6'H

Footprint: 7'W x 7'L x 9'H

Manuals and electrical schematics included

Power: 460V, 84A, 3Ph, 60Hz

Heat Input: 60KW

Fans: Exhaust fan and circulation fan (largest motor 5HP)

Controls: Honeywell UDC 2300 Temperature Controller and analog high limit controller

Uniformity: Appears to have been designed as +/-10F, was last used as if it was +/-25F

Condition: Excellent

Asking Price \$24,500 USD

<https://themonty.com/project/itemt375-grieve-walk-in-oven/>

Item#T374 Pacific Scientific 30" x 48" x 30" Electric Temper

Pacific Scientific 30" x 48" x 30" Electric Temper. Model PKMD 100-E. Serial number: 662-0208P . Heating: Electrically. Power Req: 65 KW, 460 Volt, 3 Phase. Max Temperature: 1450°F.

Asking Price \$15,000 USD

<https://themonty.com/project/itemt374-pacific-scientific-30-x-48-x-30-electric-temper/>

Item#T373 Pacific Scientific 30" x 48" x 30" Electric Temper

Pacific Scientific 30" x 48" x 30" Electric Temper. Model PKMD 100-E. Serial number: 662-0420. Heating: Electrically. Power Req: 65 KW, 460 Volt, 3 Phase. Max Temperature: 1450°F. Nitrogen Capable.

Asking Price \$14,500 USD

<https://themonty.com/project/itemt373-pacific-scientific-30-x-48-x-30-electric-temper/>

Item#T372 Selas (Pacific Scientific).

Model PKMD 100-E Selas (Pacific Scientific). Model PKMD 100-E, Serial number 662-0585. Working dimensions: 30"X 48" X 30". Max Temp: 1450°F. 65 KW, 460 Volt, 3 Phase. Very good condition.

Asking Price \$17,500 USD

<https://themonty.com/project/itemt372-selas-pacific-scientific-model-pkmd-100-e/>

Item#T371 Recirculating Box Type Draw Oven

Lindberg Model 152418-E12 recirculating box type draw oven. Working dimensions of 18" high X 15" wide X 24" deep. Electrically heated 230/3/60, operating temperature of 1250F. This is a standard Lindberg "Cyclone" design . Coiled Nichrome heating elements are housed in a separate chamber. A high velocity paddle wheel fan delivers the heat to the work chamber and provides for good uniformity. Plug type swing open door. Brick lined door, stainless steel interior. Provisions for two shelves, one shelf included. Furnace will be checked out and reconditioned, cleaned, painted and test fired. Includes a 30 day warranty. Very good condition. ALSO AVAILABLE ARE 4 OTHER TOOL ROOM BOX DRAWS IN STOCK.

Asking Price \$5,950 USD

<https://themonty.com/project/itemt371-recirculating-box-type-draw-oven/>

Item#T369 Surface Combustion Temper Super 36

Serial numbers BC-42071-1A and BC-42071-1B. Working dimensions of 36" wide X 48" deep X 30" high. Electrically heated with a maximum operating temperature of 1400F. Shared control panel. Built in 1983. Very good condition. Currently in operation, available September 2019.

Asking Price \$35,000 USD Each

<https://themonty.com/project/itemt369-surface-combustion-temper-super-36/>

Item#T368 Surface Combustion Super 30 Temper

Manufactured by Surface Combustion in 1972 this is an electrically heated temper with working dimensions of 30" X 48" X 30". Serial Number BC-39686. Maximum operating temperature of 1250F. Currently installed but not in use. Complete and in good condition.

Asking Price \$29,000 USD

<https://themonty.com/project/itemt368-surface-combustion-super-30-temper/>

Item#T366 Wisconsin Temper Oven

Wisconsin Oven Model EWN-618-6E, NEW in 2012, 500F, Inside 6' W x 18' D x 6' H, Outside 9'6"W x 19'3"D x 9'11", 96KW on 480V/3/Approx. 133 Amps, 10HP/8,600CFM recirculating fan, 1HP/9CFM forced exhaust, UL listed control panel, shipping weight 6,500 lbs., uniformity (+/-)10, viewing window, 8 port jack panel, doors front and rear, digital controller, safety disconnect switch, emergency stop button, horizontal airflow, aluminized steel interior, high limit control, adjustable louvers, aluminized steel interior

Asking Price \$39,950 USD

<https://themonty.com/project/itemt366-wisconsin-temper-oven/>

Item#T360 Wisconsin Oven

Model SBH-222, 650F, inside dimensions 2'W x 2'D x 2'H, horizontal airflow, Allen Bradley Panel View Plus 600, hi-limit, door switch, audible/visual alarm, 240/3 with 12 KW heater, Honeywell chart recorder, 2 shelves.

Asking Price \$7,900 USD

<https://themonty.com/project/itemt360-wisconsin-oven/>

Item#T359 Seco Warwick Vacuum Temper Furnace

Model VTR-5050/48. Serial Number 586/2005. Purchased 3/21/2006. Work Zone Dimensions, 36W X 48D X 24H. Originally qualified for 900°F to 1260°F with +/- 10°F uniformity. Vacuum pump is Stokes Model 212-11, Blower is Stokes Model 310-41. The operating system is Wonderware Intouch. Internal circulation fan. 460 VAC 3 phase. The buyer will be responsible for removal. The furnace will be available for removal in April 2019. It is currently still in operation.

Asking Price \$50,000 USD Or Best Offer!

<https://themonty.com/project/itemt359-seco-warwick-temper-furnace/>

Item#T358 Wisconsin Oven Like New (2 Available)

Wisconsin Oven Model EWN-55-5G8, 800F, 5'W x 50'D x 6'H, overall 9'6" W x 11'D x 11'H, 10HP/7000CFM recirculating fan, combination airflow, adjustable louvers, airflow switch, 600 CFM exhaust, Eclipse 450,000BTU burner, UL listed control panel, Honeywell recorder, Honeywell programmer, digital hi-limit, disconnect switch, vertical rise doors on both ends, insulated floor, exhaust hood. Excellent Condition.

Asking Price \$29,500 USD Each

<https://themonty.com/project/itemt358-wisconsin-oven-like-new-2-available/>

Item#T356 Wisconsin Oven Temper Furnace

Wisconsin Oven Temper Furnace. 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. Manuals & drawings are included with this furnace. Natural Gas – 1 MBTU's/Hour. Model # SDB-6616-10G and serial # 033899307. Max operating temperature is 1000°F with a voltage of 480/3/60/16 Amps. Working dimensions

of 36"W x 36"H x 96"L with external dimensions of 96"W x 13'4"H 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 controllers 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 and Barber Colman digital round chart recorder. 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.

For Pricing Please Contact Jordan@themonty.com

<https://themonty.com/project/itemt356-wisconsin-oven-temper-furnace/>

Item#T349 Eclipse Recirculating Box 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 USD

<https://themonty.com/project/itemt349-eclipse-recirculating-box-furnace/>

Item#T342 Precision Quincy Recirculating Walk In Oven

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 Price \$16,500 USD

<https://themonty.com/project/itemt352-precision-quincy-recirculating-walk-in-oven/>

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.

For Pricing Please Contact Jordan@themonty.com

<https://themonty.com/project/itemt340-safed-borel-annealing-furnace/>

Item#T335 Despatch Temper

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. Operating temperature of 500F. 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 Price \$5,500 USD

<https://themonty.com/project/itemt335-despatch-temper/>

Item#T325 Despatch 3-Station 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 \$20,000 USD

<https://themonty.com/project/itemt325-despatch-3-station-temper-furnace/>

Item#T320 Pifco Conveyor Oven

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

Asking Price \$59,000 USD

<https://themonty.com/project/itemt320-pifco-conveyor-oven/>

Item#T318 Eisenmann Box Tempers (4 Available)

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

<https://themonty.com/project/itemt318-eisenmann-box-tempers-4-available/>

Item#T303 Pifco Temper Furnace

S/N 8177 built in 1988. Working dimensions of 126" long x 60" wide x 40" high. Overall dimensions of 13' x 11' x 11' high. Comes with load and unload discharge tables and combustion fan. Maximum operating temperature 950 deg. F. Rated for 250 pound net weight x 37.4in long tray loaded every 15 minutes. Furnace holds three (3) trays. Approximate nineteen (19) minutes to operating temperature. Forty-five minutes in furnace @ 15 minute load cycle. Heated by

one gas burner approximate rating 600,000 BTU/hour. Utilities required: 1000 BTU natural gas @ 5PSI, 480v 3Ph 60Hz. Water 80 deg. F maximum @ 20PSI. Compressed air 60PSIG minimum. Adequate drain for water. Good condition.

Asking Price \$20,000 USD

<https://themonty.com/project/itemt303-pifco-temper-furnace/>

Item#T286 Lindberg Box Temper

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

Asking Price \$65,000 USD

<https://themonty.com/project/itemt286-lindberg-box-temper/>

GENERATORS

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

Item#G199 2000 CFH Endothermic Generator New 2015

Manufactured by Unitherm Industries in 2015. Model EG 2000, Serial Number 102113-2. 2,000 CFH capacity. Maximum operating temperature 2000F. Natural Gas fired. SSI atmosphere controls includes AC-20, Series 7 Temperature control, 7SL Hi Limit. Installed but not in use. Excellent condition. Last operated December 31/2018.

Asking Price \$29,500 USD

<https://themonty.com/project/itemg199-2000-cfh-endothermic-generator-new-2015/>

Item#G197 Lindberg 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 USD

<https://themonty.com/project/itemg197-lindberg-ammonia-dissociator/>

Item#G196 Surface Combustion 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 Price \$31,500 USD

<https://themonty.com/project/itemg196-surface-combustion-endo-generator/>

Item#G178 Sargeant & Wilbur 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 Price \$29,500 USD

<https://themonty.com/project/itemg178-sargeant-wilbur-ammonia-dissociators-4-available/>

Item#G176 Surface Combustion Endo Generator

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 Price \$75,000 USD

<https://themonty.com/project/itemg176-surface-combustion-endo-generator/>

Item#G173 Lindberg Endo Generator

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

Asking Price \$17,500 USD

<https://themonty.com/project/item173-lindberg-endo-generator/>

Item#G169 Gasbarre / Sinterite Endo Generator

3000 CFH, electrically heated 460/3/60/63 Amps/50kW. New in 2006. External dimensions of 106" wide x 75" deep x 116" high. Controls are enclosed in a panel attached to the side of the generator. Honeywell UDC 3200 digital temperature

controller and Honeywell UDC 2500 digital high limit safety. Control switches with indicating lights are flush mounted in the enclosure. Flange mounted fused disconnect switch for control power. Separate non fused disconnect for the main power. Waukee flow meters are manifold mounted for incoming and outgoing gases. Flow meters include: Natural Gas 0-1000 CFH, Air 0- 2500 CFH, (3) Mixed Gas 0-1500 CFH and Endo 0- 3500 CFH. Step down transformer for reduced voltage to the heating elements. Electrically heated 3 retort generator. Refractory lined shell with vertically mounted retorts. Total of twelve (12) silicon carbide heating elements, 6 on each side are mounted through the chamber for good uniform heating of the alloy retorts. The natural gas and air pass through a Waukee “mixor” valve then into the Waukee gas pump. Mixed gas enters the 3 “mixed gas” flow meters, through the Selas fire checks and enters the top of the retorts. The gas travels through the catalyst filled heated retorts and exits at the bottom. The exiting Endothermic gas passes through water cooled chambers then finned cooled air heat exchangers then through the Endothermic flow meter. A pressure regulator is supplied on the exiting gas piping. Good condition.

Asking Price \$29,500 USD

<https://themonty.com/project/itemg169-gasbarre-sinterite-endo-generator/>

INDUCTION HEATING SYSTEMS

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.

Item#I184 Pillar Mark 11 100kW 10 kHz Power Supply

Manufacturer: Pillar

Model No. Mark 11

Mfg. Date: 1996

100 kW, 10 kHz

Runs well, in good condition. Was running until recently when uninstalled.

Asking Price \$15,000 USD With Shipping Included

<https://themonty.com/project/itemi184-pillar-mark-11-100kw-10-khz-power-supply/>

Item#I183 Pillar Single Spindle Induction Scanning System

Manufactured by Pillar Induction this is a Model; AB7102-107/MK 11, Serial Number 3815. Voltage; 480V/3/60/266 Amps/222 KVA. Power supply; 200 kW, 3 kHz with a 24" Scanner. System is skid mounted with a footprint of 8'W x 10'H x 12'L. Controls; Mounted and wired inside an enclosure with fused disconnect includes an Allen Bradley SLC5/04 with touchscreen interface. This system includes a Pillar MK 11 200 kW, 3 kHz power supply, stainless steel DI water system w/plate & frame heat exchanger, 24" scanner attached to heat station and stainless steel electrically heated quench tank. Very good condition.

Asking Price \$75,000 USD

<https://themonty.com/project/itemi183-pillar-single-spindle-induction-scanning-system/>

Item#I182 2007 Ajax/Tocco 48" Vertical scanner

2007 Ajax/Tocco 48" Vertical scanner (42" max hardening length). Single spindle with a 300# weight capacity

Touchscreen controls with 15" monitor. Recipe storage for 500 part files. Quality assurance signature monitoring includes: Energy monitor at the coil, quench pressure, flow and temperature 400 KW, 1.1 – 3.0 kHz power supply integrated to the vertical scanner. Both scanner and power supply are in excellent operating condition.

Asking Price \$75,000 USD

<https://themonty.com/project/itemi182-2007-ajax-tocco-48-vertical-scanner/>

Item#I181 Pillar Induction Heat Treat System 50 kW, 50 kHz

This is an automatic Lift and Rotate Machine with a single lift position and TWO heat stations allowing for heating in two different locations in one machine cycle. The two heat stations are controlled by a transfer switch that transfers power from one position to a second position. This is a manual load/unload automatic cycle machine with Allen Bradley controls and Panelview 1000 operator interface. It has an automatic door close/open and light curtain for operator safety. Power Supply is a Pillar MK11 50 kW, 50 kHz IGBT Type. Entire unit is mounted on a common base for easy transport and re-installation. Other details include:

Rotational Drive Speed (Variable): 0- 200 RPM

Integral Quench Reservoir: 100 Gallon

Dimensions (Induction Heater) (L x W x H): 155" x 120" x 115"

Weight Estimate: 20,000 Lbs.

Asking Price \$49,500 USD

<https://themonty.com/project/itemi181-pillar-induction-heat-treat-system-50-kw-50-khz/>

Item#I179 Semi-Automatic Pin Hardening System 25kW, 3/10 kHz

Ajax Pachydyne 25kW, 3/10 kHz pin annealing/hardening system. This is a small automatic system for Induction Heat Treating small pins. Includes a power supply with matching heat station and a small fixture for heating and drop quenching small diameter parts. Also includes a small conveyor to drag out the parts from the quench container and water to water cooling and recirculating system and a quick-change coil bus adapter. Good condition.

Asking Price \$14,900 USD

<https://themonty.com/project/item179-semi-automatic-pin-hardening-system-25kw-3-10-khz/>

Item#I178 Inductoheat Pick & Place Induction System

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.

Asking Price \$85,000 USD

<https://themonty.com/project/item178-inductoheat-pick-place-induction-system/>

Item#I177 Ajax 2 Station 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 \$89,500 USD

<https://themonty.com/project/item177-ajax-2-station-spindle-scanners/>

Item#I174 Ajax Tocco Induction 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 deigned 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 Price \$120,000 USD

<https://themonty.com/project/item174-ajax-tocco-induction-power-supply-heat-station/>

LAB EQUIPMENT

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

Item#L22 ATM Brilliant 250H Wet Saw

Available is an ATM Brilliant 250 H wet saw and ATM pump with wash down and filtration. Saw can accept a 12 inch blade. This unit is operated manually, works well and is in daily use. daily. Vendor has upgraded his lab and this is surplus.

Asking Price \$8,000 Canadian (roughly \$5,500 USD) or best offer.

<https://themonty.com/project/iteml22-atm-brilliant-250h-wet-saw/>

MISCELLANEOUS HEAT TREAT EQUIPMENT

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

Item#M435 Cast Alloy Baskets, Fabricated Baskets And Cast Base Trays (Used)

We have available 36 heavy duty cast alloy stackable baskets nearly new with working dimensions of 36" x 24" x 6" high. Also available are 40 fabricated rod baskets with course mesh liners all in 330SS material, again in good, usable condition. Included in this package are 30 reversible base trays in HU material with working dimensions of 36" X 24" in very good condition. Asking prices to come but all offers at this point will be considered.

Best Offer

<https://themonty.com/project/itemm435-cast-alloy-baskets-fabricated-baskets-and-cast-base-trays-used/>

Item#M434 Cryogenic Processor with Integral Tempering

Type: Cryogenic chamber with integral heater

Work Zone: 18"W x 42"L x 18"H (height can be increased to 34" with extension box)

External dimensions: 30"W x 61"L x 35"H

Temperature: -300F to at least +350F

This heavily insulated cryogenic chamber has an integral tempering heater. The unit can connect to a Liquid Nitrogen tank or a Dewar with an insulated hose.

The cryogenics and the heater work well. The temperature controller and the chart recorder need to be repaired as they are outdated. A height extension box for processing larger parts is included. The unit is on wheels.

Selling As-Is.

Asking Price \$12,000 USD

<https://themonty.com/project/itemm434-cryogenic-processor-with-integral-tempering/>

Item#M433 Surface Combustion Charge Car 36x48

Built by Surface Combustion this is a double ended charge car for use with a 36" X 48" furnace. Model DEDP 36-48 Charge Car. Serial #BC42070-1. 460V, 3 phase, 60hz. Excellent condition and still in use. Available September 2019.

Asking Price \$29,000 USD

<https://themonty.com/project/itemm434-surface-combustion-charge-car-36x48/>

Item#M432 Super Systems 9200 Control System

For sale Super Systems 9200 control system mounted in free standing panel including multiple spare HMI touch screens and spare power supplies

Asking Price \$19,000 USD

<https://themonty.com/project/itemm432-super-systems-9200-control-system/>

Item#M431 Eclipse Single Ended Recuperative Burners (20 available)

We have 20 Eclipse single ended recuperative burners and 20 65 inch long silicon carbide inner and outer tubes for sale. Also 20 Honeywell flame relays and all solenoids and gas and air valves also 20 ignition transformers. This system is still installed. New in 1998 and used very little. We can provide removal and packaging. We prefer not to separate. Burners and tubes are currently mounted vertically but can be installed and operated horizontally. These burners are good for any atmosphere furnace such as belts or batch or pits.

Best Offer

<https://themonty.com/project/itemm431-eclipse-singe-ended-recuperative-burners-20-available/>

Item#M427 Used Houghton MAR-TEMP Oil 355

Mar-Temp 355 is a high performance accelerated hot quenching oil suitable for use at temperatures of up to 375°F (190°C). It is based upon solvent-refined mineral oils and contains a specialty formulated additive package which provides accelerated quenching characteristics and excellent oxidation resistance and thermal stability. Mar-Temp 355 has a high flash point and will provide long life under arduous operation conditions.

Features & Benefits

- Short vapor phase and fast maximum cooling rate for optimum hardness and physical properties
- Premium hot quenching (martempering) oil providing maximum distortion control of quenched components eliminating the need for rework due to distortion
- Excellent oxidation and thermal stability: Resists formation of sludge and breakdown of oil in use to ensure maximum oil life

22,000 Liters are available immediately and 16,000 Liters in a month or two.

Asking Price \$1.25 USD Per Litre (Located In Canada)

<https://themonty.com/project/itemm427-used-houghton-mar-temp-oil-355/>

Item#M426 Midbrook Belt Washer

Midbrook hurricane 5024, stainless steel conveyor through feed type 4-stage parts washer, s/n 44674 (2004), 24" x 24" opening, wash/rinse/rinse/blow off/dry stages, allen-bradley panelview 1000 control, stainless steel metal mesh belt conveyor, demagnetizer, 24" wide plastic infeed and outfeed power belt conveyors. Comes with over 50' of automated feed conveyor. Currently installed without power.

Asking Price \$89,000 USD

<https://themonty.com/project/itemm426-midbrook-belt-washer/>

Item#M425 Kolene Salt Bath Nitriding Line (gas)

Manufactured by Kolene this was purchased new in 1995 by the vendor. This is gas fired with pot dimensions of 42" diameter X 6' deep. Was typically producing 1,000 pounds per hour but capable of more. Line includes the following;

- 3 overhead transfer cranes
- Air scrubbing unit
- Bronco continuous belt blasting unit, large very effective machine with 36" belt and 8 multi directional blasting motors (vendor will sell this separately)
- 3 vibratory polishers
- Many fixtures
- Used salt*
- New salt*
- Extra pot (weld repaired)

System is installed and was in operation until late 2018. Complete and in good condition.

Asking Price \$365,000 USD For Everything

<https://themonty.com/project/itemm425-kolene-salt-bath-nitriding-line-gas/>

Item#M421 Berg Chiller

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

Asking Price \$8,000 USD

<https://themonty.com/project/itemm421-berg-chiller/>

Item#M417 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 Price \$8,000 USD

<https://themonty.com/project/itemm417-soluble-oil-dunk-tank/>

Item#M416 Wheelabrator

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 Price \$75,000 USD

<https://themonty.com/project/itemm416-wheelabrator/>

Item#M414 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

Asking Price \$8,800 USD Shipping Included

<https://themonty.com/project/itemm414-vacuum-residual-gas-analyzer-3-available/>

Item#M411 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 Price \$13,500 USD Each

<https://themonty.com/project/itemm411-sbs-quench-oil-coolers-2-available/>

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.

Item#VF363 Vacuum Oil Quench Carburizing Furnace

Manufactured by Abar Ipsen this is a Vacuum Oil Quench Carburizing furnace. Abar Ipsen Model; Carburizer LOG-3436C-GLO. Working dimensions of 26" wide X 36" deep X 26" high. Operating temperature of 1700F. Uniformity of +-10F at 1675F. Power supply 126KVA. Utility requirements; Electrical: 480V/3Ph/60Hz, 500 Amp circuit breaker. Graphite heating elements. Cylindrical graphite hot zone. Stokes 412-014 roughing pump, vacuum booster. Single SCR with three rheostats, Hunterdon VRT's.

Controls: Beckhoff 15" Touchscreen and Computer with fully-interactive HMI and full recipe control; Allen Bradley Compact Logix PLC with an L32E processor; Honeywell Temperature Controller and Over-temperature Controller; Yokogawa CX1000 digital chart recorder.

Footprint: Furnace 18'W x 18'L x 15'H above floor. Pit 9'W x 17'L x 28"D. Controls 3'W x 11'L.

Asking Price \$250,000 USD

<https://themonty.com/project/itemvf363-vacuum-oil-quench-carburizing-furnace/>

Item#VF362 Abar Ipsen Model HR-120x152VC Vacuum Furnace

This vacuum furnace manufactured by Abar Ipsen in 2002 has a Hydrogen Purge, Graphite Hot Zone, Controlled Cooling and a "Rotator System". Working Dimensions of 120" D x 120" L (Rotator); 84" W x 84" H x 152" L (Hearth).

Maximum load and temperature; 5000-Lbs @ 2400°F (w/ Hearth); 2500-Lbs @ 2200°F (w/ Rotator). 6 Bar positive pressure cooling. Argon backfill and partial pressure hydrogen purge. Graphite heating elements, Graphite Board & Felt insulation. Varian DS602 35" diffusion pump with Stokes vacuum pumps. Compuwatch control system with Allen Bradley Panelview 1400E PLC.

Honeywell chart recorder and Honeywell overtemp indicators. Inficon Digital vacuum gauges, oxygen analyser, moisture monitor, cooling system and tower. All details available upon request. Excellent condition. Still installed.

Best Offer

<https://themonty.com/project/itemvf362-abar-ipsen-model-hr-120x152vc-vacuum-furnace/>

Item#VF361 Sunbeam Vacuum Furnace

Description: Front Loading Sunbeam Vacuum Furnace. Currently in storage but has been operational in the past year. Well maintained and in excellent condition. Used exclusively for Aerospace brazing applications. All manuals, prints and maintenance records are available.

Specifications:

- Model: 4014
- Work Zone: 48" H x 48" W x 60" L
- Pumps: Stokes 212 roughing, MD Pneumatics 5514 blower, Varian 32 Diff and Welch 1376 holding.
- Max. Temperature: 2400 Degrees F
- Uniformity: +/- 15 F
- Power Requirements: 460/3/60

Controls:

- CompuVac control cabinet, new in 2008.
- AllenBradley Model SLC5/05 PLC.
- Two Televac Pirani Gauge Tubes.
- Televac Cold CathodeGauge Tube.
- Honeywell Digital Chart Recorder.
- Honeywell Over-temperatureController.
- Compuvac Work Station with Flat Panel Touchscreen.
- MM200 TelevacVacuum Gauge.

Also included are extra heating elements, loader and serpentine furnace rack.

Asking Price \$125,000 USD

<https://themonty.com/project/itemvf361/>

Item#VF360 Vacuum Aluminum Brazing Furnace

Manufacturer: PV/T, Inc. (Now an Inductotherm Group company)

Type of Furnace: Vacuum Aluminum Brazing

Work Zone: Horizontal, 24" Wide x 37" Long x 33" High

Temperature Rating: 1250°F

Used for: Brazing Radiators

Design Temperature Uniformity: +/- 5°F (6 zones of control)

Hot Zone Design: Rectangular Shape, Elements all 4 sides, top & bottom

Hot Zone Condition: Good

Vacuum Pumps: Varian HS-16 Diffusion Pump (New in 2005), Stokes 412-H
Roughing Mechanical Pump, Stokes Mechanical Booster Pump, Welch 1402
Holding Pump

Floor Space Requirement: 8 ft x 11ft for furnace, 2 ft x 5 ft for control panel

Power Requirement: 480V/3Ph/60Hz, 200 Amp Disconnect

Controls: Honeywell, Barber-Coleman

Accessories Included: Loader, Water Cooling System (as shown in photos)

Disassembly: No charge, Just pay for rigging

Asking Price \$95,000 USD

<https://themonty.com/project/itemvf360-vacuum-aluminum-brazing-furnace/>

Item#VF358 Abar Ipsen 10-Bar Vacuum Furnace

Manufacturer: Abar Ipsen

Type: 10-Bar Vacuum Furnace, Internal Quench

Furnace Model: H-66x48

Date: 1994

Work Zone Size: 48"W x 50"L x 48"H

Max. Temperature: 2300F (operated 900F-2220F)

Temperature Uniformity: +/-15F

Hot Zone: All Metal

Control Thermocouple: Type S

Process: Used for Steels and Titanium

Cooling Gas: Argon and Nitrogen

Quench: 10 Bar Quench with Internal Cooling Fan

Blower motor: Recent rebuild/upgrade to VFD, 350HP

Typical vacuum level: 10^{-6} Torr with 2 micron leak rate reported

Diffusion Pump: Varian 35"

Mechanical Pump: Stokes 412J-14

Vacuum Booster Pump: Edwards 900-615-MHRR 09/16

Furnace Footprint: 21'W; 22'L door closed; 27'L door open; +10'L Loader and Rails

Panel Footprint: 8'W x 3'L x 7'H

Included: Loader, (2) ea. Serpentine Load Support Grids

Description: Metal shielded hot zone, needs new elements and shield repairs, or you can convert to graphite insulated hot zone.

Controls: Honeywell AC90 recipe controller, Honeywell UDC 2000 over-temperature controller, Televac MC300 vacuum gauge, SSi Touchscreen Digital Chart Recorder, Dewpoint Panametrics Moisture Monitor Series 35, SSi Series 7 diffusion pump oil temperature controller

Asking Price \$250,000 USD

<https://themonty.com/project/itemvf358-abar-ipsen-10-bar-vacuum-furnace/>

Item#VF357 Abar Ipsen Rebuilt Vacuum Furnace

- Manufacturer: Abar Ipsen
- Model: HR 46X72
- Condition: Rebuilt in 2015, used through 2016. Very good.
- Hot Zone: 36"W x 24"H x 72" deep, Moly, New in June 2015
- Elements: Moly
- Controls: New Ipsen control panel, new in 2015.
- Temperature: 2400F
- Diffusion Pump: 32" Varian Diffusion Pump (new in 2015).
- Pumps: Stokes 212 mechanical pump was rebuilt in early 2016. Welch 1398 holding pump was rebuilt in 2015. Stokes 615 blower recently rebuilt.

- Estimated Footprint: 21' Wide (+ water surge tank which could be relocated 4'x10'x6'H). 24' Deep (+10' deep loader). 12' High. Spool piece adapter added to remove need for diffusion pump pit.
- Power: 480 Volts, 3 Phase, 60 Hz
- Loader Included, 10' Long x approx. 3.5' Wide.
- 2-Tier TZM Moly Grid Fixture, 36" Wide x 72" Long x 18.5" Tall.
- Cold Trap: Liquid N2 fed Cold Trap
- Status: Furnace is currently disassembled in storage. Furnace was in production until January 1st, 2017.

Asking Price \$350,000 USD

<https://themonty.com/project/itemvf357-abar-ipsen-rebuilt-vacuum-furnace/>

Item#VF355 Vacuum Furnace Control Panel

Built by Loy Instruments in 2014 for use on an Abar Vacuum furnace. System consists of a free standing, 2 door panel with Honeywell 900PLC with Honeywell Over Temp and Televac vacuum controller. Panel was used for 2 years before it was removed from service. Panel has always been in a controlled atmosphere environment maintained at 70F. Very clean and in excellent condition. New this was \$60,000 USD.

Asking Price \$26,000 USD

<https://themonty.com/project/itemvf355-vacuum-furnace-control-panel/>

Item#VF353 Bottom Load Vacuum Furnace 60" X 60"

Vac Aero Rebuilt Bottom Load Vacuum Furnace, working dimensions of 60" x 60". Model: VAV-6060-BL. Hot Zone: Moly face with graphite insulation. Vacuum Pumps: 35" Diffusion Pump, Stokes 1722 Package. Quench System: 125 HP external quench. Rebuild in progress: Complete exterior reconditioning. Interior of pipes, fna house and vessel receive sand blasting and new high temp white epoxy paint. New hosing. New hot zone. New quench heat exchanger. Rebuilt 125 HP motor. Rebuilt mechanical pump and blower. (New controls available at extra cost). PHOTO BELOW SHOW FURNACE BEFORE REBUILD.

Asking Price \$495,000 USD

<https://themonty.com/project/itemvf353-bottom-load-vacuum-furnace-60-x-60/>

Item#VF350 Ipsen Bottom Load Vacuum Furnace

Model VVFC, Serial number #57411. Working dimensions of 48" X 48". Max. temp 2300F. 225KW heating power. 2 speed 25 HP cooling fan. Increased internal heat exchanger coils. Insulated hot zone with moly hot face. Stokes 412 mechanical pump with ROOTS CONNERSVILLE 1016 booster. New SSI programmer/controller. Built 2/6/78. Graphite heating elements and graphite hearth. Installed but not in use. Good condition.

Asking Price \$99,000 USD

<https://themonty.com/project/itemvf350-ipsen-bottom-load-vacuum-furnace/>

Item#VF348 C.I. Hayes Vacuum Furnace

C.I. Hayes Vacuum Furnace. The front door is mounted on an I-Beam trolley and slides to the side for access to the interior. Quench section is located directly in front of the heat chamber with a hydraulically operated door separating the chambers. Hot zone is lined with graphite felt backed up with ceramic fiber blanket. Six graphite rod elements are mounted horizontally across the chamber, 3 over and 3 under the work area. Hearth rails support the work load. Hydraulic cylinder transfers the load between the chambers. Hydraulic pumping system lowers and raises the work load into the tank. There is a Kinney vacuum Electrically heated with a voltage of 480/3/60/20 kW. Model # VCQME and serial # 16482 (1987). Max operating temperature is 2400°F. Working dimensions of 8"W x 6"H x 14"L with external dimensions of 5' wide x 9' 6" long x 8' 5" high Furnace only – not including pumps, transformer. Controls are mounted and wired in a separate enclosure. There is a Honeywell DCP 511

programmable controller and a Honeywell round chart recorder / high limit with digital readout. MKS vacuum gauge indicates vacuum level in the quench area and the heat chamber. Control switches for all functions of the furnace including temperature, vacuum, nitrogen backfill, gas fan and oil agitator are flush mounted in the enclosure. Controls for transferring the load and elevator controls are located next to the furnace door. Voltage reduction transformers with DC power drivers are mounted in a NEMA 12 enclosure.

For Pricing Please Contact Jordan@themonty.com

<https://themonty.com/project/itemvf348-c-i-hayes-vacuum-furnace/>

Item#VF344 C.I. Hayes Vacuum Furnace

Built by C.I. Hayes this is a VCH-202436 Single Chamber Vacuum Furnace. Work dimensions of 20”h x 24”w x 36”d. Max. Temp.: 2450 deg.F. Connected Load: 125 KW, 440/3/60. All Graphite Heating Chamber. Vacuum Components: Mechanical Pump/Blower Combo (16” Port For Addition Of Diffusion Pump). High Volume Recirculating Gas Cooling System. Programmer Controller, OT Protection, Two Recorders. Previously used for sintering of stainless steel magnetic material and the quench is capable of hardening alloy materials. Hot zone in good condition. Furnace is presently in storage.

Asking Price \$90,000 USD

<https://themonty.com/project/itemvf344-c-i-hayes-vacuum-furnace/>

Item#VF342 Ipsen Bottom Load Vacuum Furnace

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

<https://themonty.com/project/itemvf342-ipsen-bottom-load-vacuum-furnace/>

Item#VF335 ALD Vacuum Carburizing Furnace

Loading Dimensions : Width 400 x Length 400 x Height 400 mm. Loading

Capacity : 80 kg max. Cooling Fan Motor : 75 kW, 3000 rpm for 10 bar

N2. Vacuum System : Leybold SV100 Mechanical Pump. Leybold WA501 Roots

Pump. Leybold E250 Mechanical Pump. Leybold WA1001 Roots Pump. Vacuum Level : $<5 \times 10^{-2}$ mbar. Leak Rate : $<5 \times 10^{-3}$ 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, Methan, Argon, Hydrogen. Installed Power : 700 kVA, 3x400V 50 Hz. Manufacturing Year : 2002.

Asking Price \$75,000 Euro

<https://themonty.com/project/itemvf335-ald-vacuum-carburizing-furnace/>

Item#VF331 Elnik Vacuum Furnace

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
- Working dimensions of 18" X 18" X 18"
- External dimensions of furnace 6' X 6', water tank 5' X 5'
- Ultimate vacuum 10⁻⁵
- 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 utilities
- Complete and in Good Condition

Asking Price \$19,950 USD

<https://themonty.com/project/itemvf331-elnik-vacuum-furnace/>

Item#VF330 Surface Combustion 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 USD

<https://themonty.com/project/itemvf330-surface-combustion-vacuum-furnace/>

Item#VF327 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

<https://themonty.com/project/itemvf327-surface-combustion-vacuum-temper-furnace/>

Item#VF326 Ipsen Vacuum Furnace

Ipsen 924 Vacuum Furnace. Ipsen Model: VFC-924-R Vacuum Furnace S/N: 58699. Working dimensions of 32" wide X 53" deep X 26" high. Maximum operating temperature of 2400F, recently surveyed from 1400-2000F at +-25F. Molybdenum faced hot zone. Stokes 412 roughing pump, Stokes 615 booster pump, and Varian HS-20 diffusion pump. 40 HP fan. Water cooled. One zone of control. Honeywell controllers and chart recorder. MKS 937B Vacuum Gauge Controller. Good operating condition. 480 Volts. Was used in an aerospace facility before it was very recently removed.

Asking Price \$80,000 USD

<https://themonty.com/project/itemvf326-ipsen-vacuum-furnace/>

Item#VF321 Ipsen Vacuum Furnace

- Manufacturer: Ipsen
- Model: VFC-524, working dimensions of 24" wide X 36" deep X 24" high
- Temperature: 2400F
- Moly-faced hot zone
- Graphite heating elements
- 18" Ipsen Diffusion Pump
- Stokes 412H-10 mechanical pump
- 50 kVA power transformer
- Top-mounted cooling fan with 15 HP Motor
- 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

Asking Price \$58,000 USD

<https://themonty.com/project/itemvf321-ipsen-vacuum-furnace/>

Item#VF320 Thermal Technologies 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 parts washer.

Asking Price \$75,000 USD

<https://themonty.com/project/itemvf320-thermal-technologies-vacuum-furnace/>

Item#VF316 AVS Vacuum Furnace

Manufacturer: Advanced Vacuum Systems (AVS). Model: HMF-24-24-48-1100, S/N 4-1284-0683 Approx. 1990. Chamber: Cylindrical, Horizontal, Stainless Steel with front & rear access doors for ease of maintenance. Hot Zone: Used, All-Metal Moly/SS Shielded Hot Zone with Moly Elements and Moly Hearth Ass'y. Vacuum System: Stokes Mechanical Pumps and Varian Diffusion Pump (Typ. 10-4 to 10-6 Torr ultimate) Pumps: Varian HS-20 warranty rebuilt Diffusion Pump. Stokes 310 warranty rebuilt mechanical blower pump (booster). Stokes 212 warranty rebuilt Mechanical Roughing Pump. Holding Pump for diffusion pump. Power: 480V/3Ph/60Hz, 300 Amp, 250 KVA Heating. Floorspace Requirement: Approx. 15' x 15' x 11'H. Work Zone: 24"W x 48"D x 24"H. Max. Temperature Rating: 1100°C (2012°F) Max. Load Rating: > 1500 lb. Upgraded Controls: SSI 9220 Controller with 12.1" Advantech Touch Screen HMI and built in digital data acquisition, SSI Series 804L Hi-Limit, SR12 Remote Input Satellite Recorder, New Allen-Bradley Micrologix 1400 PLC, Televac vacuum instrument & gauges. Gas Cooling: External VFD Drive Blower and Heat Exchanger, 1 Atmosphere Pressure. Other: Included – 24" x 48" used 2-Tier Molybdenum Grid Fixture. Both front and rear doors have ports for adding end heating elements, if desired (not included). Rear door also has a port for a circulation fan, if desired (not included).

Asking Price \$170,000 USD

<https://themonty.com/project/itemvf316-avs-vacuum-furnace/>

Item#VF314 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

<https://themonty.com/project/itemvf314-ipsen-bottom-load-vacuum-furnace/>

Item#VF313 GT Technologies Top Loading Vacuum Furnaces

Top Loading Vacuum Furnaces (2 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 Price \$175,000 USD Each

<https://themonty.com/project/itemvf313-gt-technologies-top-loading-vacuum-furnaces/>

Item#VF312 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 Price \$149,000 USD

<https://themonty.com/project/itemvf312-vacuum-furnace/>

Item#VF299 Sunbeam Vacuum Furnace

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

Asking Price \$95,000 USD

<https://themonty.com/project/itemvf299-sunbeam-vacuum-furnace/>

Item#VF282 AVS Vacuum Debinding/Sintering Furnace

This is a horizontal graphite vacuum debinding sintering furnace for steel MIM parts completely rebuilt from top to bottom by AVS in 2010. Working volume –

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

Asking Price \$149,000 USD

<https://themonty.com/project/itemvf282-avs-vacuum-debinding-sintering-furnace/>

WASHERS

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.

Item#W431 Surface Combustion Dunk Spray Washer 36x48x30

Manufactured by Surface Combustion in 1983 this is a dunk/spray washer with working dimensions of 36" wide X 48" deep X 30" high. Serial number BC-42072-1. Maximum temperature of 180F. Installed and in operation. Very good condition. Available September 2019.

Asking Price \$25,000 USD

<https://themonty.com/project/itemw431-surface-combustion-dunk-spray-washer-36x48x30/>

Item#W428 Abar Ipsen Parts Washer

Model WRD-5-G Dunk/Spray washer. Serial number 60099. Working dimensions of 24" X 36" X 24", maximum load capacity 1200 pounds. Gas heated. 460/3/60 electrical. Currently installed. Very good condition.

Asking \$19,900.00 USD.

<https://themonty.com/project/itemw428-abar-ipсен-parts-washer/>

Item#W425 Proceco Rotary Table Washer

Proceco Rotary Table Washer. Standard Proceco "Typhoon" stainless steel rotary table washer with 2000 pound table capacity. This washer has a wash stage, rinse stage and electrically heated blow-off stage. Wash tank is 600 gallons, rinse tank is 295 gallons. 25 HP wash pump, 360 GPM, 40 psi. 7-1/2 HP rinse pump, 115 GPM, 60 psi. Manual and drawings are included with this washer. Washer options include the following: Center Nozzle Pipe (CNP), Full Flow Filtration, Exhaust Blower, Oil Skimmer, Fresh Water Rinse, Oil

Coalescer, PLC Controls, Stainless Steel Construction. Electrically heated with voltage 460/3/60/39 Amps. Model # HD 62-60-S-2000-CO-2-R-BO-SS and Serial # 96-224. Working dimensions of 62" Diameter x 60" High with external dimensions of 8'W x 16'H (11'H shipping) x 13'L. Controls Mounted and wired in a free standing panel includes an Allen Bradley SLC 500 PLC control with operator interface flush mounted to the door. There are three (3) digital temperature controllers, 1 for 1st stage, 1 for 2nd stage and 1 for blow-off stage. Excellent condition and available immediately.

Asking Price \$55,000 USD

<https://themonty.com/project/itemm425-proceco-rotary-table-washer/>

Item#W415 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.

For Pricing Please Contact Jordan@themonty.com

<https://themonty.com/project/itemm415-surface-combustion-parts-washer/>

Item#W348 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.

Asking Price \$35,000 USD

<https://themonty.com/project/itemm348-ipsen-automatic-dunk-spray-washer/>

Item#W314 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 Price \$18,500 USD

<https://themonty.com/washers/>

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.

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