

PURCHASING'S GATEWAY TO NEW SOURCES

No. 298

FREE SUBSCRIPTION

THE Gateway MAGAZINE

KEEPING PURCHASING DECISION MAKERS INFORMED

25,000+ readers read THE GATEWAY in over 7,500 companies

**EXPAND YOUR
COMPANY'S HORIZONS!**



CAPCO CRANE & HOIST

SEE PAGE 3

**Precision Grinder
Speeds Production of
High-Performance
Magnetic Seals**

SEE PAGE 11

BE SURE TO SHARE YOUR STORIES: WWW.THEGATEWAYMAG.COM

FEATURED ARTICLE: CAPCO CRANE & HOIST

CONTENTS

MAY / JUNE 2024 | ISSUE 298

INDUSTRY INSIGHTS

03 Capco Crane & Hoist

11 Precision Grinder Speeds Production of High-Performance Magnetic Seals

THE Gateway MAGAZINE

PUBLICATION MANAGER

Matthias Roberge

EDITORIAL DIRECTOR

Chris Hislop

ART DIRECTOR

Adam Kaufmann

ADVERTISING INQUIRIES

(877) 463-4020

info@thegatewaymag.com

Hours: 9am-5pm Mon-Fri

MAILING ADDRESS

PO Box 70

Portsmouth, NH

03802

FOR FREE SUBSCRIPTIONS

www.thegatewaymag.com

CHANGE OF ADDRESS:

In ordering a change of address, give both the old and new addresses. Allow two months for change to become effective. The publisher will attempt to handle unsolicited articles with care, but magazine assumes no responsibility for them.

THE 'CVL' SERIES
INDEXABLE CORNER ROUNDING CUTTER

FREE TOOL!
WITH THE PURCHASE OF 10 INSERTS
OFFER ENDS 12-31-23

RADIUS RANGE FROM .188" TO 1"

- *FREE CUTTING
- *SUPERB SURFACE FINISH
- *PRECISION INSERTS
- *METRIC & INCH
- *EXPERT TECH SUPPORT

CUTTING TOOL CTT TECHNOLOGIES

CUSTOM TOOLING AVAILABLE CALL FOR A QUOTE!

WWW.CUTTINGTOOLTECH.COM
(603)654-2550 - CTT@TELLINK.NET



TANDEM

EQUIPMENT SALES, INC.

ESD PACKAGING SALES INC.

OVER 40 YEARS PROVIDING STATIC SHIELDING SOLUTIONS.

Tandem ESD Packaging Sales has continued to provide for over 40 YEARS it's customers with full access to quality industrial packaging supplies, static control products and meters, custom foam packaging services and thermoformed ESD plastic trays and containers.

- MEDICAL
- ELECTRONIC
- HIGH-TECH
- INDUSTRIAL
- MILITARY
- AEROSPACE
- COMMERCIAL
- PHARMACEUTICAL



tandem-esd.net

800.696.9169

35 Tozer Road Beverly MA 01915

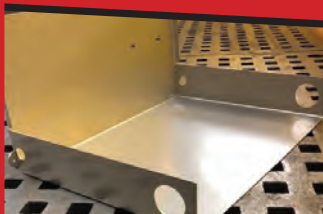


QUALITY LASER, INC.

LASER CUTTING SERVICES

36 6th Rd. Woburn, MA 01801

Plate, Sheet, Pipe & Tube



SHEET & PLATE CUTTING

Carbon Steel up to .875"
Stainless Steel up to .50"
Aluminum up to .375"
Brass & other Alloys

TUBE & PIPE CUTTING

3/4" up to 8.625" Diameter
Up to 6" Rectangular & Square
Square to Round Transitions
Elbows
Coping & Mitering



Welding, machining and full metal fabrication services available.

617-479-7374 www.quality-laser.com

Email: info@quality-laser.com

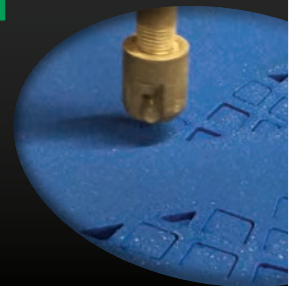
SHARPLES

CREATIVE. INTRICATE.
EXCEPTIONAL.

WATERJET CUTTING

Abrasive and non-abrasive waterjet cutting provides:

- Large Bed Capacity
- No Added Heat
- Cutting of Virtually Any Material
- Superior Nesting
- Available in Tumble and Bead Blast Finishing
- High Position Accuracy
- Small or Large Runs



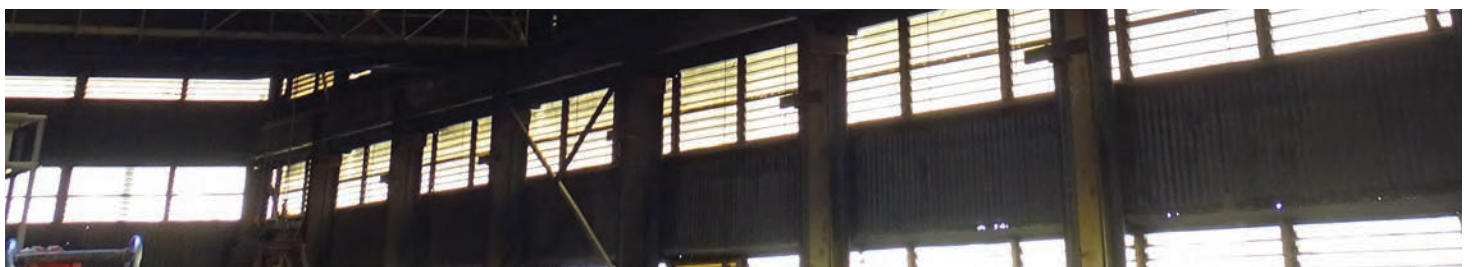
CALL 508-695-5656 OR VISIT SHARPLESCUT.COM

THE HEAVY ENGINEERED BRIDGE CRANE SPECIALIST



Pictured: Grapple Crane In Trash To Energy Facility

Capco Crane & Hoist, Inc., located in Rowley, MA, is an established and respected service organization located in the suburban Boston area specializing in the sales, installation, manufacturing and inspection of overhead bridge girder cranes and hoists for companies throughout New England and beyond. They are a member of the Crane Manufacturers Association of America Crane and MHIA, the Material Handling Industry of America (www.mhia.org).



The company sets itself apart from the competition in that it actually designs and builds the box girder beams “in house” that are required for large capacity bridge cranes. Many companies cannot build the girders or do not have the facility to build the girders; whereas Capco designs and builds the girders in their plant!

Once the girders are built, the crane goes together like every other double girder crane. Important details like perfect girder construction with automated “sub arc” welders, tube hand rails on walkway, hatched lights on walkway and high quality paint job all add to the overall look and quality of a Capco crane. A Capco “box girder” crane is a custom-built machine made to run longer and harder than any of the other brands. Each box girder crane is hand crafted and made special for a company’s specific application.

Capco Crane is the only company in New England that fabricates box girders from inception to installation. Our 25,000 square foot factory has a 250 foot by 100 foot fabrication floor served by three bridge cranes with a combined lifting capacity of 45 tons allowing us to produce and test operate up to 150 ton, 150 foot long crane beams.



Recent Capco Crane Projects

1. Massachusetts Energy Plant

Capco Crane is currently building the second of two grapple bucket cranes for an energy plant on the North Shore of Massachusetts. These cranes are designed with a grapple bucket to load trash into a furnace at the trash to energy plant.

They are operated from a special operator chair in the glass operators’ room called the pulpit, the project itself is incredibly complex and demanding.

The install requires the roof to be removed and the old crane to be disassembled and then taken out with a large mobile crane. Then the new crane to be installed, all during a very brief time period called their plant outage. This project demands incredible talent and experienced riggers and electricians and the cranes themselves are durable; built for 24/7 service and run at very high speeds, 365 days per year! The crane must be designed to withstand incredible abuse and really hard running conditions

The first Capco crane was installed in November of 2023 and the second one being built in our shop in Rowley; to be installed in May (2024), again, during an outage.

Once the cranes are put online, they cannot stop operating, due the plant having a commitment to the surrounding towns to take in trash and continue to burn the trash and convert that trash to energy around the clock, each day of the year

The project is so demanding, Capco is the only local crane company that would be considered for such a project, it is truly the most difficult conditions from design to fabrication, to time limits to environment that a crane company could be asked to perform.

A true credit to the Capco management team, their staff, field techs and all the other subs on the project that make it all happen.

◀ Pictured: Grapple Crane In Trash To Energy Facility

CONSUMABLE SUPPLIES

Highest Quality. Competitive Prices.

SMS carries a large selection of metallurgical supplies for your in-house lab needs. We cover all of your sample preparation requirements and are *happy to provide samples to evaluate.*

- Grinding Papers
- Polishing Cloths
- Diamond Suspension
- Diamond Paste
- Hot Mount Powders
- Mounting Clips
- Mold Cups
- Saw Blades
- Cold Mount Epoxies
- And so much more...



**Sturbridge
Metallurgical
Services, Inc.**

**Shop
ONLINE**

www.smslabs.com
1-866-340-5288

TDF Metal Finishing, Inc.

7 & 9 Electronics Ave Danvers, MA 01923

PROCESS

- ▶ Anodizing, Black, Clear, Red, Blue, Gold, Green
- ▶ Anodize, Hard
- ▶ Black Ebonal
- ▶ Black Oxide
- ▶ Black Passivate
- ▶ Brass
- ▶ Bright & Matte Tin
- ▶ Bright Dip
- ▶ Bright Nickel
- ▶ Cadmium
- ▶ Caustic Etching
- ▶ Chemical Film
- ▶ Copper
- ▶ Electroless Nickel
- ▶ Electropolish
- ▶ Gold
- ▶ Passivate
- ▶ Phosphate
- ▶ Pickling
- ▶ Rhodium
- ▶ Silver
- ▶ Zinc



SERVICES

- Clean Room Finishing
- Sandblasting
- Baking—High Temperature
- Salt Spray Corrosion Testing
- X-ray Florescence Thickness
- Vapor Blasting
- Buffing
- ROHS COMPLIANT CHEMICAL FILM
- ROHS COMPLIANT ZINC
- Environmentally Responsible
- High Tech Waste Management
- Quick Turnaround
- Sample Pieces

ISO 9001:2008, 8251QM8001, 11 May 2013

Tel: 978-223-4292 Fax: 978-223-4297
Web: www.tdfmetalfinishing.com Email: tdinfo@tdfmetalfinishing.com



MONUMENTAL MOVEMENTS.



Capco Crane & Hoist, Inc. is a material handling and service organization specializing in sales, installation, manufacturing and inspection of overhead bridge cranes and hoists for industrial companies both nationally and internationally.

We do the heavy lifting.
800.422.7261

CAPCOCRANE.COM

58 Forest Ridge Drive, Rowley, MA 01969



SHAW-BOX MH&L Material Handling & Logistics



**CUSTOM BRIDGE CRANES • GANTRY CRANES • GANTRY CRANES
HEAVY ENGINEERED • BOX CRANES • JIB CRANES • RUNWAY SYSTEMS**

Please follow the newer Capco projects on Instagram @capcocrane and @capcocraneandhoist



◀ Pictured: Grapple Crane In Trash To Energy Facility

2. Plant Expansion

One of Capco Crane & Hoist's longtime customers were in the midst of expanding their plant and came to us to design and fabricate and install the new cranes needed for this plant expansion.

The Project: To fabricate and install up to six new double girder cranes for the company.

The capacities range from 10 tons to 20 tons and some smaller single girder cranes for the shorter side bays.

The plant will double the size of the current facility and there are some challenges. We are going to have existing DC cranes running into the new plant and all the new cranes will also be going from the old plant to the new plant and the new cranes are AC power; a combination you do not see much anymore. Our staff will make good use of the existing equipment and plan to make it all work for the customer.

The fact that Capco Crane has the ability to make the large capacity box girder cranes, plus the ability to install and service their own brand of cranes, really was the winning formula for our loyal customer. The cranes will be built with heavy duty components and promise to be extremely robust and offer many future years of great operation and continued run time.

This job included multiple layers of runways with upper and lower runways and really does require a lot of planning and sophistication to make it all fit and run into the new and older building without any clearance issues

The Capco Crane engineers specialize in such complex and challenging design criteria and always seem to shine brightest in the most challenging material handling problems!

Instagram Account Review

Recently the company announced that their new INSTAGRAM business account has been "flourishing" and that the continued exposure and usage of this popular and ever-growing social media platform has allowed increased connections with the core computer and mobile ready end users in the crane and hoist market.

Caputo noted that "the new Insta account showcases innovative material handling projects and Capco Crane engineered solutions to some very compelling lifting and handling problems. We have a completed a large variety of crane and hoist projects, throughout the years and this will show-case on a daily or weekly basis just some of them."

David enthusiastically goes on to say, "Keep your eyes peeled, or you just may miss something that will help your plant, or your staff solve a lifting or moving requirement!"

Expect many more of these great pictures of some amazing (and intricate) Capco Crane Projects as they continue to build and install cranes and solve material handling problems for every type of industry throughout the USA and beyond!

Visit them on Instagram: @capcoocrane

CORROSION PREVENTIVE PACKAGING FOR INDUSTRY

TANDEM
EQUIPMENT SALES, INC.
ESD PACKAGING SALES INC.

Proudly represents and stocks
VCI (Volatile Corrosion Inhibitors)
product line.

For more than 60 years, Daubert Cromwell has provided innovative solutions to corrosion problems with their VCI PAPERS & FILMS. Reduce costs and maintain quality in all stages of manufacture, storage and shipment by protecting your valuable metal parts against corrosion. Daubert Cromwell has a product to meet the needs of any industry.



Manufacturing, Handling, Packaging complete static control Products, ESD Workstations, Microscope & Fiber-optic Lights & Bulbs



tandem-esd.net
800.696.9169
35 Tozer Road Beverly MA 01915



SEEING YOUR COMPETITOR'S ADS IN THE GATEWAY?

THE
Gateway
MAGAZINE

So are your
clients and
prospective
buyers.

INFO@THEGATEWAYMAG.COM
OR (877) 463-4020

GET STARTED

COMPRESSOR ROOM VENTILATION

FRESH AIR AND MATCHING EXHAUST TO REMOVE THE HEAT LOAD

TRANSFER HEAT INTO YOUR FACILITY FOR ENERGY SAVINGS IN THE WINTER

ALSO SUMMER VENTILATION SYSTEMS TO COOL YOUR SHOP AREAS

COOL DOWN
YOUR
COMPRESSOR
ROOMS



CUSTOM
DESIGNED
WITH
FABRIC
DUCTING

800 622 8078

VentilationUSA

www.ventusa.com



Accreditations & Associations

- Crane Manufacturers Association of America, Inc.
- Material Handling Industry of America
- Steel Fabricators of New England Association
- The National Precast Concrete Association

David Caputo is Capco Cranes Vice-President of Sales and Marketing and states that “since Capco Crane was started we have set the standard for building cranes in New England. Our CMAA membership brings along a responsibility to continue to manufacture bridge cranes of the absolute highest quality and

constantly push our own standards higher and higher. CMAA membership also provides us “first look” at the latest information in our industry, whether it is new technology or changes in industry rules and regulations”.

Thanks, from all of us!

For further information and to contact Capco Crane & Hoist Inc.

Please do call David Caputo

978-948-2998 or email: dcaputo@capcocrane.com

Visit the company website at: www.capcocrane.com

HAVE A STORY IDEA? LIKE WHAT YOU'RE READING?

*We would like to hear it. Contact us to give us your input or feedback.
We're always looking for new stories to discuss.*

chris@thegatewaymag.com or Call: (877) 463-4020

From start to finish,
prototype to progressive...



**WE ARE YOUR
ONE STOP SHOP!**



**WIRE EDM
PRECISION TOOL & DIE
CNC MILLING
METAL STAMPING**

11 Center Street
Raymond, NH 03077
(603) 895-1200
info@shookustools.com

Quality Turned Machined Parts
New Hampshire Machine Products, Inc.

- QUICK TURNAROUND ON QUOTES
- JOBS PRICED COMPETITIVELY
- BROAD RANGE OF MATERIALS



QUALITY TO CLOSE TOLERANCES: Utilizing single spindle automatic screw machines from 1/32" through 2" capacity, as well as CNC equipment.

SUPPORTED BY: A broad-range of secondary capabilities to include drilling, threading, tapping, milling and slotting.

AUDIT INTENSIVE: Complete internal tracking of all orders start to finish.

PROCESS CONTROLLED: Includes raw material traceability.

QUALITY: Quality assurance programs performed to MIL-STD-105D.

PRODUCTION RUNS: From 50 to 100,000 pieces.

CALL OR FAX US REGARDING YOUR SCREW MACHINE REQUIREMENTS AND WE GUARANTEE YOU A QUICK, COURTEOUS AND INTELLIGENT RESPONSE.

NEW HAMPSHIRE MACHINE PRODUCTS, INC.
CUST. TEL. 1-800-639-9404
Reg. Tel: 603-772-4404 Fax: (603) 772-6043
10 KINGSTON RD.— P.O. BOX 975
Exeter, NH 03833
www.newhampshiremachineproducts.com

E-Mail: barbara@newhampshiremachineproducts.com

**FABRICATION & MACHINING
FOR ALL INDUSTRIES**

CNC Milling/Turning	Manual Milling/Turning
VMC: 40" x 120"	Vertical Milling: 40" x 250"
HMC: 78" x 118"	Horizontal Milling: 72" x 72"
Turning: 16" x 24" cc	Turning: 48" x 240" cc

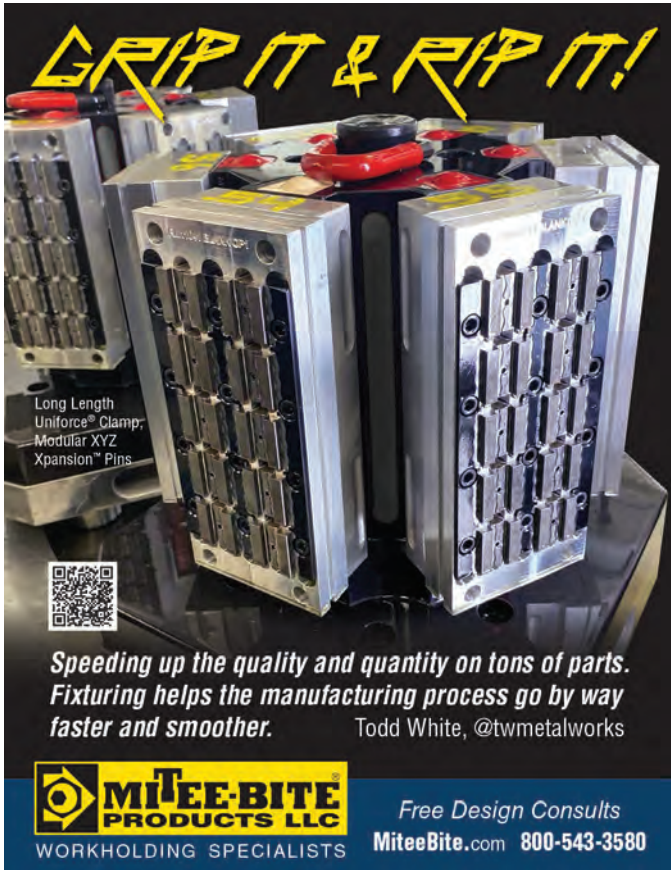
AWS Certified Welders • ISO 9000 Compliant




**Innovative
MACHINE • INC.**
40 Snow Road • Winchester, NH 03470
Tel: **603-239-8082**

Contact: Terry Haskins
www.innovative-machine.com
tmhaskins@innovative-machine.com

GRIP IT & RIP IT!



Long Length Uniform® Clamp, Modular XYZ Expansion™ Pins



Speeding up the quality and quantity on tons of parts. Fixturing helps the manufacturing process go by way faster and smoother. Todd White, @twmetalworks

MITEE-BITE PRODUCTS LLC
WORKHOLDING SPECIALISTS

Free Design Consults
MiteeBite.com 800-543-3580

Teflon™ coatings

Improve part performance with unique properties of Teflon™ coatings!

Coatings can be applied to:

- metals
- elastomers
- ceramics
- composites
- rubber
- glass



As a licensed industrial applicator, Donwell...

- provides custom coating services to your specifications.
- coats both small and large parts to close tolerances in quantities from 1 to 1,000,000.
- has over 50 years of high-performance coating application expertise.

DONWELL COMPANY
1-800-864-2702
www.donwell.com
For FREE Coating Sample

Licensed Industrial Applicator
Dow Chemical

Use of the Teflon™ mark requires a direct trademark license. Customers and distributors of Donwell can only resell LICENSEE's product as licensed with the Teflon™ mark.

- ABRASION RESISTANT
- NONSTICK
- LOW FRICTION
- ELECTRICAL
- CHEMICAL RESISTANT
- NONWETTING

Summer Ventilation Systems

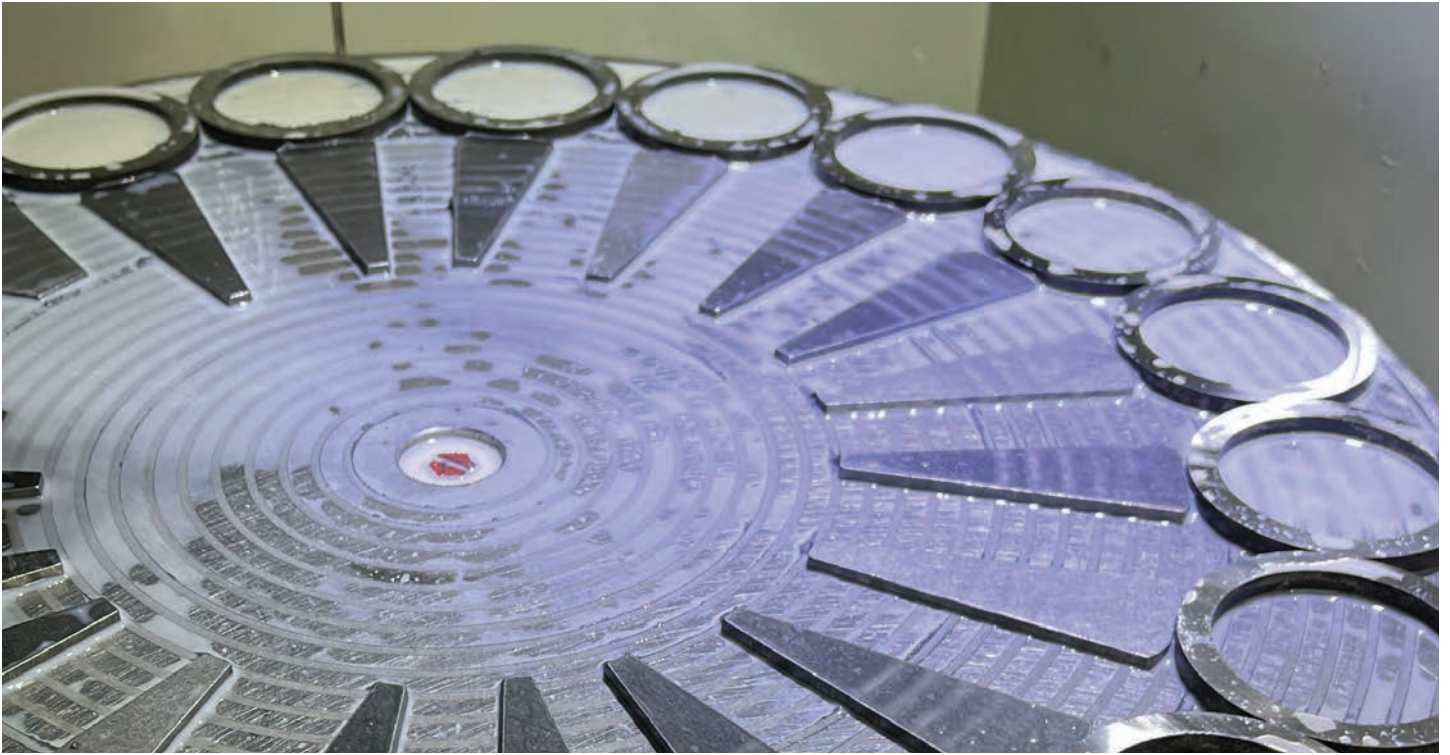
- PROBLEMS?**
- Does Your Facility Lack Fresh Air?
 - Hot & Cold Areas, fumes, odors, etc?
 - Stale, stagnant air issues?
 - Do you have Process Heat Issues?
 - Negative Pressure, cold drafts?



Let us design a ventilation system that will introduce and deliver fresh outside air to the employee work areas.

VentilationUSA CALL NOW: 800.622.8078
www.ventusa.com • E-mail: info@ventusa.com

PRECISION GRINDER SPEEDS PRODUCTION OF HIGH-PERFORMANCE MAGNETIC SEALS



Advanced rotary surface grinders provide the precise flatness, parallelism, and finish needed for industrial parts subjected to high pressure and rotation, all at a reduced cost and cycle time.

In manufacturing, it is often necessary to grind metal and alloy parts to very precise specifications in thickness, parallelism, and surface finish. This is particularly important when the parts are subjected to extreme rotational forces and must mate face-to-face, or parallel, to other surfaces.

Rotary shaft seals are a perfect example. These crucial components seal the rotating parts of machinery, prevent lubricant leakage, and ensure impurities do not infiltrate the inner workings of engines, gearboxes, and pumps. Mechanical seals, specifically, are utilized for high pressure applications demanding robust sealing capabilities. Consequently, the seal assembly components must be ground to exceptionally precise levels of flatness and parallelism to operate as effective leak-proof seals.

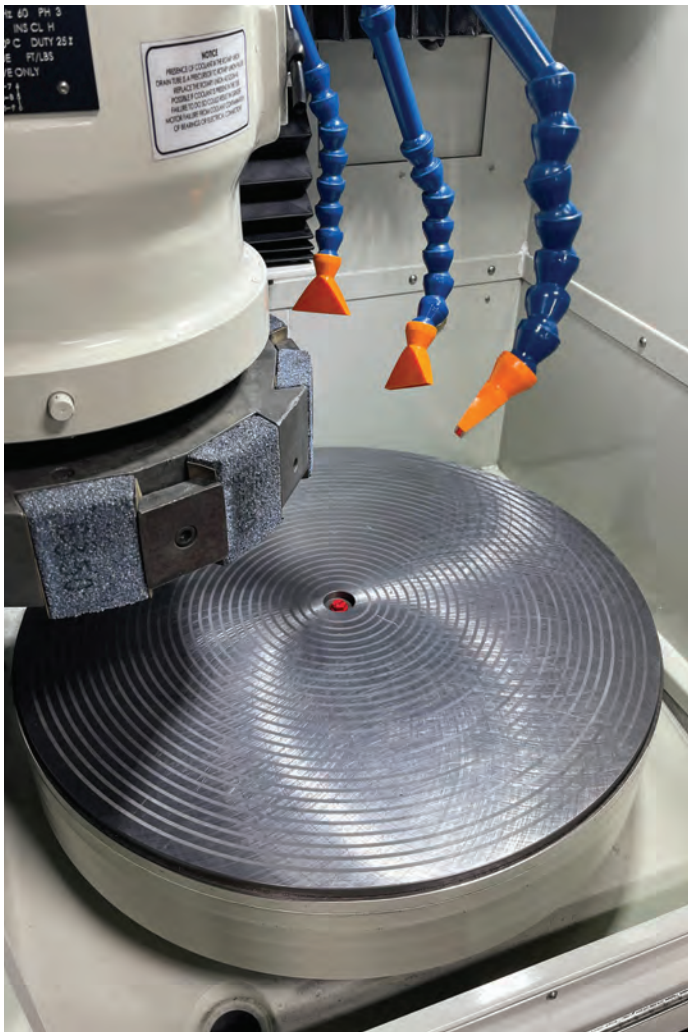
Unfortunately, the grinding process can be lengthy, labor intensive, and costly with conventional methods. So, when production requirements increase, manufacturers frequently turn to more advanced, automated rotary surface grinders that can achieve the precise specifications in much less time, with less operator intervention and skill.

Exceptional Seal Fit and Performance

For rotary shaft seals, various factors affect seal selection, such as shaft speed, pressure, temperature, lubricant type, and environmental conditions.

Traditional designs typically involve three main elements: a metal case that provides rigidity and structural support; a rubber sealing lip that creates a tight seal around the rotating shaft; and a spring that ensures constant pressure is maintained by the sealing lip against the shaft.

However, these seals may not perform as expected at very high pressure or RPMs, where traditional seals can begin to struggle to maintain contact with the shaft (track) due to radial runout. In these cases, the spring is often unable to maintain a tight seal with the shaft.



“The seals may be rotating at 40,000 RPM and if there is an imbalance because a part was not ground to size or parallel, then it is going to throw off the whole system. The seal can become compromised, and eventually it will begin to leak,” says Jared Desrosiers, Manufacturing Process and Technology Manager, MAGSEAL, LLC, a supplier of specialty magnetic seals for critical systems that is celebrating its 70th anniversary this year.

In this type of scenario, magnetic seals create a strong attraction that eliminates the need for a spring in face seal designs.

“Magnetic seals are engineered to perform in high speed, high vibration, high altitude conditions and are excellent replacements for seals that are subjected to high torque, runout, and axial movement,” says Desrosiers.

The OEM’s magnetic seals, called MAGSEALS, provide 100% positive face to face sealing and are designed to operate in air, gases, water, steam, refrigerants, lubricants, fuels, and hydraulic fluids. The MAGSEALS are typically custom designed in a variety of sizes from a quarter inch to over 6 inches.

According to Desrosiers, MAGSEALS are comprised of a magnet (stator) and a seal case (rotor). When fully assembled, the attraction force of the magnet pulls the seal case assembly into itself to create a tight seal.

The magnet is made from Cast Alnico V, a combination of aluminum, nickel, cobalt, and iron, to create the seal. The seal case is made from a ferromagnetic material, 416 or 410 stainless steel, 17-4PH for maximum corrosion protection, or 42 Alloy steel for low thermal expansion. A carbon graphite ring is installed in the seal case to complete the assembly. The carbon ring purposely protrudes out of the seal case to a specified nose height which is meant to interface with the magnet.

Each of these components – the magnet, seal case, and graphite ring – requires precise grinding to specific dimensions, parallelism, and surface finish.

Although the seal case does not have to be as precise, the carbon rings that are pressed into it are ground, lapped, and polished to achieve the specified nose height.

Wire & Sinker EDM Services



- ⚙️ **5 Axis Wire EDM**
- ⚙️ **Orbiting Sinker EDM**

Tel: 207-743-7273
Fax: 207-743-7269

NORTHEAST TOOL & DIE CO., Inc.

PO Box 28 16 Aldrich Ave. Norway, ME 04268 www.northeasttool.com



- ⚙️ **Metal Stampings**
- ⚙️ **Precision Machining**
- ⚙️ **Prototypes**
- ⚙️ **Fixture Tooling**
- ⚙️ **Compound Dies**
- ⚙️ **Progressive Dies**
- ⚙️ **Secondary Dies**
- ⚙️ **Injection Molds**

Quality Tooling Solutions since 1992



EXPERIENCE THE UGM DIFFERENCE

SINCE 1954, UNITED GEAR & MACHINE HAS BEEN USING INDUSTRY LEADING MACHINERY AND TOOLING TO MANUFACTURE PRECISION SPLINES AND GEARS FOR THE SPACE, DEFENSE AND AEROSPACE INDUSTRIES.

- ⚙️ OVER 40 GEAR SHAPING AND HOBGING MACHINES
- ⚙️ WE OFFER CNC GEAR GRINDING
- ⚙️ WE CUT SPUR GEARS, INTERNAL & EXTERNAL SPLINES, WORMS, WORM GEARS, CROWNS, HELICAL GEARS, RACKS, TIMING BELTS AND BLIND KEYWAYS
- ⚙️ ON SITE BROACHING FACILITY FOR INTERNAL SPLINES, SERRATIONS AND KEYWAYS
- ⚙️ INDUSTRY LEADING INSPECTION EQUIPMENT WITH 2 CMM GEAR ANALYZERS
- ⚙️ IN HOUSE TOOL ROOM TO PRODUCE FIXTURES AND SUPPORT FOR GEAR SHOP
- ⚙️ LARGE ENOUGH TO MEET TECHNICAL DEMANDS, SMALL ENOUGH TO ADAPT TO IMMEDIATE NEEDS



1087 EAST STREET SOUTH, SUFFIELD, CT 06078 | WWW.UNITEDGEAR.COM

BAY STATE MACHINE

GRINDING & HONING

est.
1989

GRINDING & HONING SPECIALIST

- ID-20" Swing
- OD-84" Long
- Surface Grinding 24"x60"
- CNC Cylindrical
- ID & OD GRINDING
- HONING
- SURFACE GRINDING
- CNC CYLINDRICAL

Top Quality • Any Quantity • Pickup & Delivery • Same Day Quotes

Plainfield, CT tel: 860-230-0054 baystatemachine@hotmail.com



PAUWAY CORP. Accredited
Nadcap
THINK OF THE FINISH BEFORE YOU START!

Aerospace & Defense Painting • C.A.R.C. Coating Specialists
 Dry Film Lube & Teflon Coatings • Industrial Painting
 EMI/RFI Shielding • Powder Coating • Silk Screening
 Pad Printing • Laser Marking & Engraving • Contract Manufacturing
 Assembly • Custom Packaging • Stripping & Sandblasting

866-247-4082
 63 North Cherry Street
 Wallingford, CT 06492

AS9100 & ISO 9001 Certified
www.pauwaycorp.com

The carbon seal ring surface flatness should be within two helium light bands, 0.0000232 in. [0.000589 mm] prior to use, according to John Westgate, MAGSEAL Manufacturing Engineering Technician.

For the magnet, MAGSEAL starts with a rough casting and grinds all the sides and surfaces. Secondary lapping steps are required to achieve the necessary surface finish. Currently, the OEM estimates it grinds 1,500 to 2,000 magnets each week.

In the past, the OEM utilized conventional reciprocating grinders on the magnets. Although reciprocating table grinders can be precise, the material removal rate is slow since the workpiece travels back and forth under the grinding wheel, so many grind passes are required.

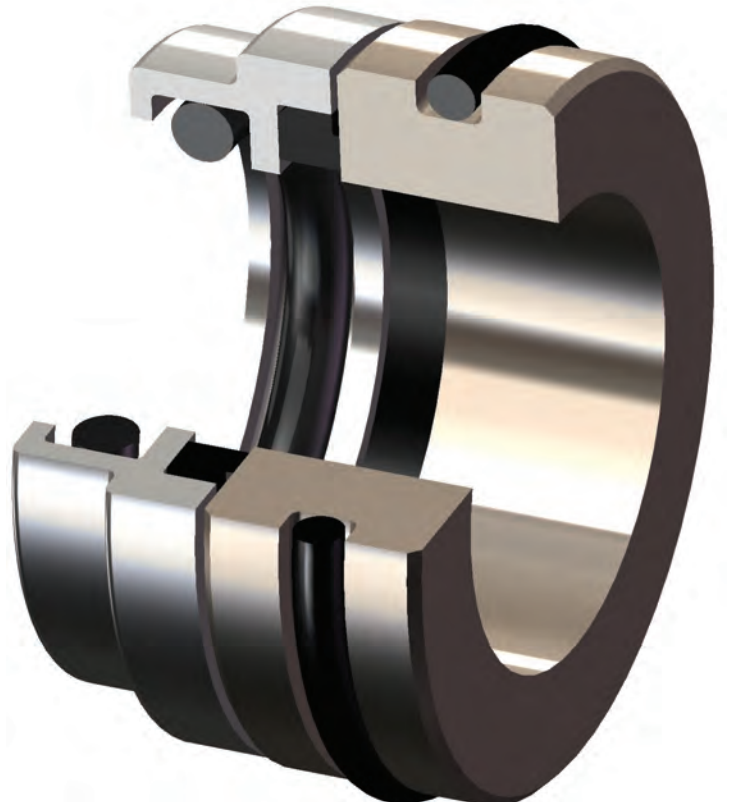
However, as production requirements increased, the OEM decided to replace a slow, aging reciprocating rotary surface grinder that often needed to be repaired with advanced rotary surface grinders from Winona, MN-based DCM Tech.

“We were able to achieve the precision and surface finish that we were looking for with the conventional method, but it took significantly longer to grind the same number of parts,” says Desrosiers. “With the [DCM] rotary surface grinder, we knew we could achieve significant time and efficiency gains.”

Today, rotary surface grinders are designed with much more advanced sensors and controls that automatically maintain very tight tolerances, removing material down to within one ten-thousandth of an inch of the final thickness. Digital technology allows for an interface with easy-to-use touchscreen controls.

To expedite the grinding and finishing process for the magnet line, the OEM recently upgraded from a conventional rotary surface grinder to a more automated, IG 282 SD grinder from DCM Tech with a 24” variable speed table and 20HP variable speed spindle.

“We have found that nothing achieves the necessary flatness, height, and parallelism as fast as the DCM Tech rotary surface grinders. The required parallelism is particularly important to prevent vibration at high speeds of rotation,” says Desrosiers.



PRECISION GRINDER SPEEDS PRODUCTION OF HIGH-PERFORMANCE MAGNETIC SEALS

The new model includes advanced features that automate the initial contact between the abrasive wheel and the part. With this updated option, advanced sensor technology detects vibration and can automatically fine-tune not only the pressure of the spindle motor but how quickly it moves the wheel down onto the part. When the machine senses the abrasive wheel has contacted the part, it automatically begins the grind cycle.

Automatic part detection eliminates the need for the operator to do time consuming, error-prone 'manual touch offs,' where they would manually feed the

grinding machine until it just touches the surface of the part before backing off and restarting it.

"The DCM Tech grinder simplifies the skillset needed and makes training a new operator a lot easier," says MAGSEAL Manufacturing Engineering Technician Westgate.

One of the reasons advanced rotary surface grinders are much faster than conventional reciprocating grinders is because the units can get much closer to the required dimensions before any finishing steps. In some cases, secondary steps can even be eliminated.



**CONNECTICUT
TOOLING & MACHINING ASSOCIATION**

**The Executive Suites
440 North Main Street
Bristol, CT 06010**

Cathy Savino, Executive Director
Email: director@ct-ntma.org
Phone: (860) 314-2101

CT-NTMA.ORG



**CENTERLESS GRINDING
& THREAD ROLLING**

25 Rosenthal Street ■ East Hartford, CT 06108
phone: (860) 289-2987 ■ fax: (860) 289-3142
web: www.unitedcgtr.com
e-mail: njgoulet@unitedcgtr.com



Precision Metal Stamping
Precision Assembly

CNC Machining
Secondary Operations

***The best place to start your
precision metal part***

Phone: 860-349-1756 | www.hobsonmotzer.com



According to Desrosiers, the increased automation and ease of use has helped to dramatically improve magnet production.

“We went from an average of three and a half minutes per piece to just under one minute per piece. We increased manufacturing capacity with reduced setup, loading/unloading, and cycle time,” says Desrosiers, adding that by reducing or eliminating the need for subsequent finishing processes, the company was able to achieve ROI in about three months.

MAGSEAL also appreciated the rotary surface grinder’s enhanced safety and cleanliness features.

Automated grinders contribute to a cleaner shop environment because the grinding is accomplished inside an enclosed shroud that contains the debris and prevents it from entering the work area. The shroud, which is a sliding door with a built-in window for viewing the process, encloses the grinding area. This has the added benefit of reducing the noise produced by the machine.

In addition to a shroud, grinders like the DCM IG series provide an integral air mist collection system that draws particulate matter from the air and moves it away from the operator to enhance the cleanliness and safety of the work environment.

“For us, safety is paramount. The advanced rotary surface grinder is a fully enclosed machine with door interlocks. This configuration is significantly safer and cleaner than a conventional service grinder,” says Desrosiers.

He notes that MAGSEAL has already ordered another advanced rotary surface grinder to replace an aging



reciprocal grinder used for the initial “rough” grind of the magnets.

When manufacturers need high-performance components that reliably operate in the most rigorous conditions, precise grinding is often necessary to meet the exact dimensions, flat, parallel surfaces, and finishes. In these cases, utilizing advanced, automated grinders that precisely and efficiently hone the component parts will help ensure that the required quality, reliability, and production goals are met.

For more information visit www.dcm-tech.com.

HAVE A STORY IDEA? LIKE WHAT YOU'RE READING?

***We would like to hear it. Contact us to give us your input or feedback.
We're always looking for new stories to discuss.***

chris@thegatewaymag.com or Call: (877) 463-4020

VACUUM AND ATMOSPHERE HEAT TREATING + BLACK OXIDING

PROCESSES

- ◆ Hardening
- ◆ Tempering
- ◆ Annealing
- ◆ Carburizing
- ◆ Carbo-nitriding
- ◆ Normalizing
- ◆ Stress Relieving
- ◆ Precipitation HT
- Commercial Black Oxide
- ISO 9001 and AS 9100



**Federal
Firearms
License**

MATERIALS

- ◆ Tool Steels
- ◆ Stainless Steels
- ◆ High Speed Steels
- ◆ Alloy Steels
- ◆ Carbon Steels
- ◆ Super Alloys
- ◆ Non-Ferrous
- ◆ PH Steels



Tel: 860-523-9090
Fax: 860-236-8052
 565 Cedar Street
 Newington, CT 06111
Andy@sousacorp.com
www.sousacorp.com

HEAT TREATING



- VACUUM
- INTEGRAL QUENCH
- CONTINUOUS BELT
- NITRIDING
- STRESS RELIEVING
- ANNEALING

Pick up and Delivery Available

Certified By General Dynamics for AMS 2759
 Aluminum Heat Treating Long Vertical Capability
 Sandblasting Parts Cleaning
 Brazing Straightening

COUNTY HEAT TREAT

32 Howe Avenue | Millbury, MA 01527
 Tel: (508) 865-5885 Fax: (508) 865-4033
 Website: www.countyheattreat.com

ISO 9001: 2015 CERTIFIED

Centrally Located in New England. 2 miles from MA Pike, Exit 94
 24 Hour Service and weekends if Needed.

HAVE YOU SEEN OUR ONLINE DIRECTORY?

Signup for the Gateway Magazine newsletter and don't forget to share your showcase piece!



HEAT TREATING

Vacuum High Pressure Quench

Non - Ferrous Heat Treat

Austempering

Marquenching

Carburizing

Nitrogen Tempering

Solution Heat Treating

Water Quenching

MATERIALS

High Speed Steels

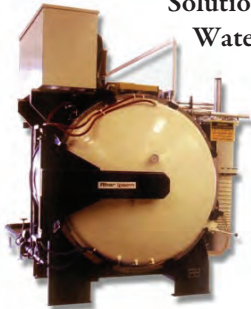
Alloy Steels

Tool Steels

Stainless Steel

Aluminum

Plastics



HARDLINE
HEAT TREATING, INC.

OTHER SERVICES

- Bright Hardening
- Cryogenics to -300°F
- Glass Bead Blast
- Grit Blast Clean
- Plastics Thermal Treatment
- Precipitation Hardening
- Anneal & Normalization
- Metallography
- Stress Relieving

Consistent On Time Delivery

Pickup & Delivery Available

Member MTI / ASM

134 Ashland Ave. Southbridge, MA 01550

www.hardlineheattreating.com

Tel: (508) 764-6669 Fax: (508) 764-6654

**WHEN YOU NEED TO MOVE
ONE MACHINE OR
AN ENTIRE FACILITY,
CALL US**



INDUSTRIAL TRANSFER &
STORAGE INC.
Offices In MA & RI

800-521-5534

Look to ITS when you're in need of a superior rigging contractor. For nearly 40 years, ITS has excelled at installing, handling, and relocating manufacturing equipment. Whether it's one machine or an entire facility, you'll receive exemplary service done safely, on time, and on budget.

Your once in a lifetime move is what we do everyday.

industrialtransfer.com

• Tungsten Carbide

• EDM Wire

• Inconel

• Titanium

• Ferrous

• Nonferrous

HARDING

METALS, INC

Specializing in Recycling Industrial Scrap

Creating recycling solutions for any type of business

- Utilizing our easy to deal with staff
- With our clean and uniform equipment



Handling all types of metals, in any form

—From mild steel to high-temp aerospace alloys

—Chips, punchings, turnings, borings, skeletons, inserts, bits. **You produce it; we handle it.**

Call or email us about Recycling and Reconditioning your Cutting Fluids

1-800-370-JUNK (5865)

42 Harding Dr. Northwood, NH 03261

info@hardingmetals.com

www.hardingmetals.com

Big enough to get things done, small enough to do them efficiently.

"DOUBT THE CONVENTIONAL WISDOM UNLESS YOU CAN VERIFY IT WITH REASON AND EXPERIMENT."

— STEVE ALBINI

F.M. Callahan & Son Inc.



Celebrating over 100 years as the longest running metal finishing company in the nation.

F.M. Callahan & Sons is a NADCAP Certified, ISO 9001, and ROHS compliant precision plating house. Specialist in Plating, electroplating & anodizing, and rack and barrel plating.

Callahan Plating serves all industries while being a key supplier of services to the Aerospace industry.



PLATED FINISHES

SURFACE TREATMENTS

ANODIZING

METAL FINISHING

BLACK OXIDE

CHROMATING

COPPER

ELECTROLESS NICKEL

GOLD

NICKEL

SILVER

SULFAMATE NICKEL

TIN

ZINC

MUCH MORE.

inquiry@fmcallahan.com (781) 324 - 5101 22 Sharon Street | Malden, MA 02148 fmcallahan.com

WHERE QUALITY COUNTS

CNC Machining

Prototype & Production Quantities
Let us put our engineering and machining talents to work for you!

Precision Milling
AutoCAD Design
Master CAM Machine

Precision Turning
Design Capability
Quick turnaround

Personalized Service

Now offering **LASER PART MARKING**
Using our new
TRUMF VMC1 LASER MARKING MACHINE

We offer one-stop shopping where we will handle your complete job. So whether heat treated, plated or painted we can supply to your requirements the way you want it.

ISO 9001:2000
SAE AS9100

R & S REDCO, INC

106 Finnell Drive. Ste 24 Weymouth, MA 02188
Tel: 781-331-4300 Fax: 781-331-4800
www.rsredco.com Email: sales@rsredco.com



Performance Machine, LLC

(603) 415-0110 Concord, NH

PRECISION MULTI-AXIS MACHINING

Specializing in Mill/Turn Machining of
Stainless Steel and Non-Ferrous metals:

316L ♦ 304L ♦ Nitronic 50/60
17-4 H1150 ♦ HH1150 ♦ H900



www.jcbperformance.com

Metal Stampings

Double Action Deep Drawing

Washers • Discs • Rings
UP TO 80" Diameter
500 TON CAPACITY

Stampings to 3/4" thick
Short or long runs
Wire EDM



Tool & Die Makers
Quick Turn Around
CAD/CAM Design

Peter Forg Mfg. Co.

130 YEARS OLD AND GROWING

888-625-4577 Fax 617-625-0331
50 PARK ST. PO Box 433 SOMERVILLE, MA 02143
www.peterforg.com

RIGGING AND HEAVY HAULING

- ◆ 70 Years Experience
- ◆ Forklift Capacity to 60,000 lbs
- ◆ Machinery Moving
- ◆ Mill-Wright Services
- ◆ Domestic & Export Crating
- ◆ Inside Storage / Warehousing



Tel. (603) - 623-1533

RIGGERS

ipcote.com

ABLE Air

Air Compressor Sales and Service

- We service ALL Brands of compressed air equipment
- Compressors, vacuum pumps, air dryers, blowers...etc.
- 24-hour emergency service
- Air piping design and installation
- Flow and KW metering

- Reliable
- Energy Efficient
- Fixed speed from 3 hp to 605 hp
- Direct coupled one-to-one drive compressors
- Variable speed drive compressors from 10 hp to 350 hp
- German engineering at its finest!
- Rotary screw compressors for every budget!



Serving
Vermont,
New Hampshire
and Maine

www.ableairne.com



KAESER
COMPRESSORS
Built for a lifetime!

New England's Original Dealer and Still the Best Place to Buy Your New Kaeser

For prompt, professional service, call: 1-800-462-0228

Serving New England For Over 50 Years

National Chromium

(860) 928-7965

(860) 928-7965
Fax (860) 928-1408

10 Senexet Road • Putnam, Connecticut • 06260

Plating of Hard Chrome, Electroless Nickel,
Mass Finishing Media, Equipment and Supplies
Mass Finishing, Tumbling & Deburring
Web Page: www.nationalchromium.com



- ✓ Precision Machining
- ✓ Toolmaking
- ✓ Jig Grinding Service



CLASSIC JIG GRINDING

jiggrind@classicjiggrinding.com

860-870-4900

Fast Hole, Wire and Sinker EDM
Precision Tools, Dies, Jigs and Fixtures

Border Tool and Die,

DBA Bengtson Tool and Die



240 Gale Street Canaan, VT 05903
T: 802-266-9666 F: 802-266-9667

richard.btd@gmail.com



Contract and prototype manufacturing of precision screw
machined parts for volume production

217 Harrison Rd.
Bridgton, ME 04009

www.merrimackmfg.com

207-647-3566
info@merrimackmfg.com



Spur & Worm Gears
Internal / External Splines
Broaching, Hobbing, Shaping



Machine Company, Inc.

515 Main Street • Yalesville, CT 06492

Tel (203) 284-0082 • jovalmachine.com

WANTED OLD GAS FORK LIFTS



We Buy Old Forklifts for
Parts. Gas or Electric,
Large or Small,
Running or Not.

We pay reasonable prices.
Call Walt 860-508-9164
Will Pick Up and Pay Cash

Also Electric Forklift Batteries Wanted

WANTED OLD ELECTRIC FORK LIFTS

Wanted Used Electric Forklifts,
running or not.

Also looking for LARGE
Used Batteries good or bad.
Must be reasonable, we pick
up and pay cash.

Call Walt: 860-508-9164



DYNAMIC BALANCING



Industrial, Medical & Commercial
applications from one piece to large production runs.

Pump Impellers - Fan Wheels - Prototype Development
Gears - Motor Armatures - Sheaves and Pulleys -
Flywheels - Couplings - Much More

8 Donnelly Road, PO Box 303 Spencer, MA 01562

www.ne-spintech.com

Tel: 508-885-5300 Fax: 508-635-6831

HIGH PERFORMANCE ALLOY SPECIALIST



**NICKEL
COBALT
STAINLESS STEEL
ALUMINUM ALLOY
ALUMINUM EXTRUSIONS**

**WATERJET CUTTING
EDM CUTTING
MILLING & TURNING
SAWING
SHEARING**



- Near Net Shape Cutting
- Laser Quality Inspection
- Finish Machining

11 Britton Drive Bloomfield, CT 06002
Tel: 860-882-0019 or 800-214-0475
Fax: 860-882-0967
sales@aalloys.com www.aalloys.com



**ISO 9001:2000
AS 9100B Certified
P&W LCS APPROVED**



We Armor Your Assets

For Orders and Pricing:
Contact MuShield for more information

[888.669.3549]

MuShield®



Our Core Services

- Magnetic Shielding
- mumetal
- Hydroforming
- Hydrogen Heat Treating

Quality Capabilities

- ISO 9001 : 2015 Certified
- AS9100D Certified
- ITAR Registered
- Magnetic Shield Testing



MuShield.com | mumetal.com | HydroformingManufacturing.com | CryoPermShielding.com



Bodycote

- Specialists in the thermal processing of components used in aerospace & defense industries
- Maintains major accreditations (ISO 9001:2000, AS 9100, Nadcap) and approvals from prime aerospace manufacturers and their supply chains



Call 860.225.7691 or visit www.bodycote.com for more information

BERLIN Connecticut **SOUTH WINDSOR** Connecticut **IPSWICH** Massachusetts **WORCESTER** Massachusetts **LACONIA** New Hampshire **CINCINNATI** Ohio

Processes

- Carburizing
- Electron beam welding
- Ferritic nitro carburizing
- Honeycomb brazing
- Induction treating
- Lindure®
- Nitriding
- Pit nitriding
- Vacuum heat treating & brazing

Materials

- Aluminum
- High temp alloys
- Tool steels

LOOKING TO HAVE A FEATURE DONE ON YOUR COMPANY?
*We would like to hear it. Contact us to give us your input or feedback.
We're always looking for new stories to discuss.*

chris@thegatewaymag.com or Call: (877) 463-4020

THE
Gateway
MAGAZINE



PO Box 70 | Portsmouth, NH 03802 | Toll Free: 877.463.4020 | info@thegatewaymag.com

www.TheGatewayMag.com