

Purchasing's Gateway to New Sources

The Gateway

Helping to Keep Purchasing Decision Makers Informed
25,000+ people read The Gateway in over 7500 companies.

SUBSCRIPTIONS: FREE NOVEMBER 2016 Issue No. 209



**HIGH SPEED
TECHNOLOGIES, INC.**
Candia, NH

ROUTING

Buyer _____
Mfg Engrg _____
Engrg Mgr _____
Mat Mgr _____
Production _____
Marketing _____
Other _____
Return to _____



Precision Sheet Metal Fabrication & Forming for Over 60 Years

- Deep Draw Hydroforming
- 5 Axis Laser Cutting, Welding & Machining
- Sheet Metal Fabrication
- Metal Spinning
- On-Site Hydrogen Heat Treating
- Multi Axis Machining
- MIG, TIG & Spotwelding
- Tool Design & Manufacturing
- Consulting, Engineering & DFM
- CMM Inspection
- R & D Work & Production Orders

– ISO 9001:2008 & ITAR registered –

www.mushield.com

www.hydroformingmanufacturing.com

MuShield®

The Mushield Company • 9 Ricker Ave., Londonderry, NH 03053
603-666-4433 • info@mushield.com

Ask our engineers a question or request a Design Guide or Sample Kits at 888-669-3539 or www.hydroformingmanufacturing.com or www.MuShield.com.

Solutions for a healthier work environment

Reduce.....heat fatigue, un-healthy air quality, negative pressure-cold drafts



Quietaire fabric ducted fresh air make up



High Velocity fresh air intake systems

Air to Air heat exchangers



VentilationUSA 800-622-8078 www.ventusa.com



HYDE™ Blades and Knives

Industrial Blade Solutions

Do you have an industrial knife or blade challenge? Hyde has solutions!



- ☑ Made To Order Solutions
- ☑ Short Lead-Time Solutions
- ☑ Fast, Responsive Quotes



Machine Knives • Industrial Blades • Specials
cutting Rubber • Paper • Food • Cloth & Textiles
Hydraulic Hose • Packaging • Coated Abrasives

Our in-house capabilities include Laser Cutting, Blanking, Grinding, Vacuum Heat Treating, Honing and much more.

ISO9001 Registered Quality System

Hyde Industrial Blade Solutions • 54 Eastford Road, Southbridge, MA 01550
Ph: (800) 872-4933 or (508) 764-4344 • Fx: (508) 764-8172 • www.hydeblades.com

Serving Industry's Machine Knife and Industrial Blade Needs Since 1875

Hyde Industrial Blade Solutions . . . Solutions You Can Count On!™

LASER CUTTING

Vortex Ilc introduces laser cutting technology in 2014!



- Rapid prototyping
- 1/2" Clean Cut Stainless
- 1/2" Steel
- 1/4" Aluminum
- ISO 9001-2008 Certified
- ITAR Registered

We now accept all major credit cards!



Defining the Future of Sheet Metal Fabrication

Phone: 978-535-8721

Fax your prints to us today 978-535-5255

www.vortexmetal.com email: jmcully@vortexmetal.com



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.



1-800-864-2702
www.donwell.com

For FREE Coating Sample



Use of the Teflon® mark requires a direct trademark license from DuPont. Customers and distributors of Donwell are only allowed to utilize a product as licensed by DuPont with the Teflon® mark. DuPont will not authorize coatings to central access to the Teflon® mark.



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: info@tdfmetalfinishing.com

Specialty Indexable Cutting Tools Designed & Manufactured

SLOTING CUTTERS • SHOULDER MILLS • COUNTERSINKS
COUNTERBORES • CORNER ROUNDERS • ANGLE MILLS
RADIUS MILLS • DRILL MILLS • INSERTS • SPECIALS



Made in the USA
Since 1984

- Standard tools in stock and ready to ship
- Over 30 years experience with custom indexables
- Rapid response to quote requests
- Excellent delivery times
- Experienced tech support
- Prompt, personal customer service

Call today to request a quote,
receive a catalog or place an order.



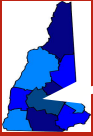
Available through leading distributors and online at www.cuttingtooltech.com

Call: 603-654-2550 • Fax: 603-654-2945 • Email: ctt@tellink.net
327 Forest Road, P.O. Box 720, Wilton, NH 03086



Get 10% off your next order!
PROMO CODE: GATEWAY



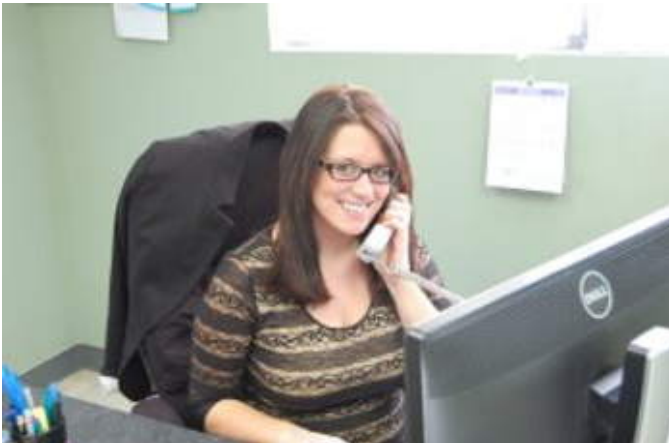


Candia, NH

HIGH SPEED TECHNOLOGIES, INC.

Written and submitted by Claude Valenze, General Manager

High Speed Technologies, Inc. repairs CNC mill, lathe and grinding spindles back to like new performance. We provide a fast, friendly, price competitive alternative to the OEM. Metal machining, stone cutting and wood routing are a few of the industries that we service.



Your spindle repair always starts with a real person answering the phone. Information will be requested to get you to the right person to speed your assistance along.

Back in 1984 High Speed Technologies, Inc. (HST) started off as a one man shop repairing air bearing drilling spindles used in the manufacture of printed circuit boards; the location, Ralph Frisella's garage in Manchester, NH. These small ultra-high speed spindles did one thing: they drilled holes in printed circuit boards. Back then there were quite a number of printed circuit board manufactures in the USA and they used thousands of these drilling spindles.



When a sick spindle arrives it will be thoroughly inspected and documented.

When these spindles failed, they were sent back to the OEM for repair where turnaround time was long and cost was high. Ralph saw the opportunity for a third party to provide quality spindle repair with fast turnaround. That opportunity became High Speed Technologies, Inc. Today we are one of the oldest independent spindle repair shops. But we retain the dedication to quality repairs that our president, Ralph Frisella, instilled over 30 years ago.

Over the years, much of the printed circuit board industry moved off-shore and so did that repair business. As that was happening, HST began repairing more sophisticated CNC machine spindles. Today, our core business revolves around the repair of high end CNC milling and lathe spindles. Now we occupy a 10,000 sq-ft building and help machine shops of all sizes by providing a high quality, competitively priced alternative to expensive OEM spindle repairs.



Next, a forensic analysis of the failed areas is performed to determine the cause of the problem. The customer is advised and suggested improvements to prevent future failures is made.

That dedication to quality has earned HST a global reputation. Today we receive damaged spindles from every continent except Antarctica. The fact that customers send us heavy, expensive spindles from Australia, New Zealand, Thailand, Egypt, Saudi Arabia, Norway, Chile and other faraway places speaks to our hard earned reputation for quality repairs and competitive pricing.

Our focus is on "ol' fashioned" customer service and leading edge quality. Our customer service starts with a real person answering the phone during business

Continued on page 7



Machining Solutions

We Can Make The Difference When Time & Speed-To-Market Are Critical

We Offer:

- ▶ Fast Response
- ▶ Engineering
- ▶ Design
- ▶ Consulting
- ▶ Prototypes
- ▶ Kitting
- ▶ Solidworks
- ▶ MasterCam 3D
- ▶ Assembly
- ▶ Value-added Service

We Can Do:

- ▶ Laser Cutting
- ▶ EDM
- ▶ CNC Milling
- ▶ Laser Engraving
- ▶ Grinding
- ▶ Turning
- ▶ Welding



75 Oxford Ave.
Dudley, MA 01571
www.kokosmachine.com



Tel: 508-943-2700
Fax: 508-949-0372
info@kokosmachine.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: 2008 CERTIFIED

Centrally Located in New England. 2 miles from MA Pike, Exit 10A
24 Hour Service and weekends if Needed.

MATERIAL TESTING

Full Service Metallurgical Testing Lab

Services Including:

- Root Cause Failure Analysis
- Taber Abrasion Testing
- Bond Slug Testing
- Chemistry Analysis
- Coating / Porosity Measurement
- Hardness Testing (Micro, Shore & Rockwell)
- Grain Size Evaluation
- SEM / EDS
- X-Ray Fluorescence (XRF)
- On Site Alloy Sorting (PMI)
- Field Metallography
- Tensile Testing
- General Metallography
- ASTM B117 Salt Fog / Salt Spray Testing
- And more...

With an Eye on Quality



Sturbridge
Metallurgical
Services, Inc.



info@smslabs.com | www.smslabs.com | 866.340.5288
8 Picker Rd, Sturbridge MA 01566

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



OTHER SERVICES

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

HARDLINE
HEAT TREATING, INC.

Consistent On-Time Delivery
Pick-up & Delivery Available
Member MTI / ASM

134 Ashland Ave. Southbridge, MA 01550
www.hardlineheattreating.com

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





Grinding bearing journals to micron tolerances takes a highly skilled technician and the right equipment. This is done at High Speed Technologies every day.

hours. That person will make it their job to get the information our customers need. Additionally, we post many helpful articles with tips to help our customers stay in production. Our blog includes a five part series on how to replace spindle bearings and offers many tips and suggestions for the do-it-yourselfer. There is also a three part series of tips for preventing spindle damage in the first place. The old adage “the customer comes first” is alive and well at HST.



It is essential to get cover surfaces perfectly parallel. Our Cuo Wheel Grinder does it right every time.

Our leading edge quality comes from highly skilled technicians and a shop specifically equipped for spindle repair. To provide highest level of repair and OEM equivalent quality, we have invested heavily in training and a wide range of specialty equipment not normally found in a machine shop. This equipment allows us to provide repairs that can restore a damaged spindle back to “good as new” condition. We back that claim up with an OEM equivalent warranty.

The spindle repair process starts with a complete break down and cleaning. Even old paint is removed.



Spacer sets between bearings must be ground in matched sets to precise micron measurements.

Once clean, we make a thorough evaluation of the spindle. We examine and measure all critical surfaces and shaft run-out to micron tolerances. This process takes a skilled technician between 8 and 16 hours. We also try to determine the cause of the failure by doing a forensic examination. After that a complete report, along with a firm price quote, is sent to the customer.

We complete this portion of the work at risk and the customer is under no obligation to pay unless they accept the quote. We know that the customer is also at risk when they send us the spindle. It may be that we provided a “sight-unseen” ball park estimate. If we find unexpected damage, the actual quote could be substantially more than our estimate. But because HST is at risk of losing the job, we are motivated to provide the best price possible and keep the job in house.

Once approved, the first thing is to order top name brand super precision spindle bearings. These are expensive and make up a significant portion of the repair cost. But this is one place where we refuse to cut corners. Even the bearing lubrication is very expensive and must be carefully metered in. Just the exact, right



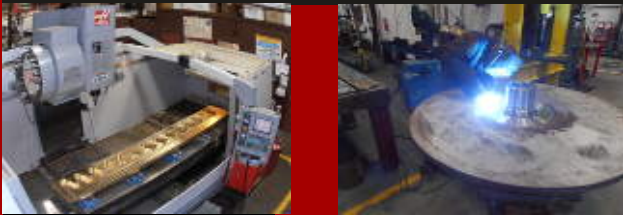
Once the corrective action has taken place, the parts are meticulously cleaned and inspected before assembly.

Continued on page 9



Fabricating & Machining Specialist

- ▶ CNC Turning to 48" dia.
- ▶ CNC Milling (40" x 120")
- ▶ 250" Milling Travel
- ▶ 206" Turning Capacity
- ▶ Repair Specialist
- ▶ 100% Quality Control
- ▶ Certified Welding ASME Sec 8
- ▶ AWS Certified Aluminum, SST
- ▶ ISO 9000 Compliant
- ▶ Pickup & Delivery



Innovative MACHINE • INC.

40 Snow Road • Winchester, NH 03470

Tel: **603-239-8082**

Fax: 603-239-6380

Contact: Terry Haskins

www.innovative-machine.com

tmhaskins@innovative-machine.com

NEW ENGLAND'S FAVORITE PLASTIC SUPPLIER

Sheet • Tube • Rod • Custom Shapes

- | | | |
|-----------|----------|----------------|
| • Acrylic | • Teflon | • Lexan |
| • Delrin | • Peek | • Mechanicals |
| • Nylon | • Ultem | • Polyethylene |

- ◆ CNC Routing
- ◆ Precision Saw Cutting
- ◆ Plastic Welding
- ◆ Fabrication
- ◆ Machining



Plastic Supply, Inc.
PLASTIC SUPPLY INC.

8 Liberty Drive Londonderry, NH

800-752-7759

sales@plasticsupply.com

Visa or MC accepted Quick Turnaround



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

Contract Cutting Waterjet

A customer service driven company since 1967.

.....
Large work areas
Pallet changer
Superior nesting software for optimum yield
Prototypes and production

Laser



Learn more...

1-800-969-3437

Visit us at www.sharplesdie.com

SHARPLES
W.R. Sharples Company, Inc.

211 John Dietsch Sq., N. Attleboro, MA 02763





When re-assembling the spindle, our technician checks the preload on the tapered bearings to insure proper performance in your spindle.

amount as specified by the bearing manufacturers. Other parts such as springs and O-rings are also ordered.

With everything on order, we start repairing all damaged and out of spec surfaces. We can restore damaged critical surfaces to micron tolerance with our Kellenberger universal grinder. These repairs are accomplished with a three step process called “grind-plate-grind” or GPG. With this process, damaged and irregular surfaces are ground to a uniform, out of spec dimension. These surfaces are then plated up to over size. The third step is precision grinding these surfaces to specified dimensions. With this process we can restore bearing journals and tool interfaces to pristine condition.

All rotating components are balanced to ISO 1940/1 G0.4 using a two part procedure. First, rotating groups are dynamically balanced on one of our Schenck balancers. That will get components to an ISO G2.5 or better. After assembly and run-in, final trim balancing is performed at maximum spindle speed to assure that the spindle will run smoothly.

Because we are measuring microns, all of our work is completed in a temperature controlled environment. And this also makes it necessary to calibrate all of our instruments such as micrometers and bore gauges using certified “Jo” blocks before each measurement. Components and sub-assemblies are inspected and tested during every step of the build. For instance, before a shaft comes off of our grinding machine, the tool interface is scrutinized with our ultra-precise air gauging.

Once all of the purchased parts are on hand and all of the sub-assemblies are repaired, the final assembly begins. When dealing with microns, extreme care is required. A small ding can result in failing

numbers at the end of a test bar.

After the spindle is assembled, it is subjected to a series of tests depending on the type. Run-out or TIR is checked at the tool interface surface and some distance out with certified test bars. Pull force is adjusted and verified with calibrated dynameters. All sensors, proximity switches and encoders, are adjusted and tested for proper operation. Coolant loops are pressure tested. Motor windings are tested for continuity and damaged insulation. Once the spindle passes all of the static tests it's on to the run-up bench for full speed testing.

Before a spindle can be tested at full speed, it must be carefully run-in with a very specific program that constantly monitors the temperature rise every inch of the way. This process can take up to eight hours for a high speed grease spindle. To accomplish this, we have sophisticated motor drives to run motorized spindles and we have drive motors to run non-motorized spindles. During run-in the spindle is fully instrumented with vibration and temperature sensors.



Every spindle must pass through a break-in before final high speed run up. Numerous tests are performed to verify the spindle meets and is in an as new condition.

For us the final arbiter of any spindle repair is the vibration spectrum. So every spindle must pass our stringent vibration specifications. By analyzing the vibration spectrum, we can detect and correct a variety of defects such as improper preload, imbalance and misalignment. While instrumented, the spindle is gradually brought up to full speed, required adjustments are made along the way. These usually include trim balancing or corrections for misalignment. When testing is complete, a vibration report is generated and included with all of our repairs.

When a spindle passes all of our tests, we know that the spindle will perform like new. However, we also want it to look like new. So it is off to the paint booth where the spindle is prepped and then painted

Continued on page 19



PRECISION METAL FABRICATION SPECIALISTS

LASER
SHEARING
STAMPING
BENDING
FORMING
ASSEMBLY
MACHINING
DRILLING
TAPPING
GRINDING
DEBURRING
ROBOTIC WELDING
WELDING (MIG,ARC,TIG AND SPOT)



1 West Main Street South Hadley, MA 01075
Tel: 413-532-9022 Fax: 413-536-4647
Email: tech.fab@verizon.net www.techfabinc.com

- ◆ ENGINEERING ASSISTANCE
- ◆ FINISHING SERVICES
- ◆ JIT DELIVERIES
- ◆ CAD/CAM
- ◆ ZERO DEFECT QUALITY
- ◆ DEPENDABLE ON-TIME DELIVERY
- ◆ PROTOTYPE TO PRODUCTION
- ◆ ACCOUNTABILITY

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

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



- Tungsten Carbide
- EDM Wire
- Inconel
- Titanium
- Ferrous
- Nonferrous

Specializing in Recycling Industrial Scrap

HARDING

METALS, INC

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.

Certified **EXPLOSION-PROOF**
Industrial Vacuums



The FRV Series – available in either electric- or pneumatic-powered models from 135 to 300 cfm airflow, 5" Hg to 16" Hg vacuum pressure; the most suction in their class. The perfect solution for housekeeping tasks in combustible dust environments such as coal dust, flour, grain, wood dust, textiles, rubber, paint, pharmaceuticals, etc. Their state-of-the-art multi-stage turbines deliver years of maintenance-free performance. With features and guarantees exclusive only to Ruovac's explosion-proof vacuums, the FRV series of vacuums will provide years of maximum safety, high performance cleaning, low maintenance costs, and easy operation.



Made in the USA

Every FRV vacuum conforms to Class I Div 1 & 2, Group D and Class II, Div 1 & 2, Group F & G requirements for use in hazardous locations, and are built in an ISO 9001 registered plant to UL and CSA standards.

Dawson-Macdonald Co., Inc.

845 Woburn Street – Wilmington, MA 01887
Tel: (800) 556-4456 (toll free) / Fax: (978) 657-8740
E-mail: info@dawson-macdonald.com
Website: www.dawson-macdonald.com

VACUUM AND ATMOSPHERE HEAT TREATING + BLACK OXIDING

PROCESSES

- ◆ Hardening
- ◆ Tempering
- ◆ Annealing
- ◆ Carburizing
- ◆ Carbo-nitriding
- ◆ Normalizing
- ◆ Stress Relieving
- ◆ Precipitation HT
- ◆ Commercial Black Oxide



**Nadcap
Certified**

**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

NEW REFURBISHED FENIX SURFACE GRINDERS (BUILT ON FAVRETTO FRAMES)



Fenix Grinder FA-60
\$115,000

Fenix Grinder FA-75
\$125,000

Fenix Grinders are new Grinders, built on the frames of existing Favretto grinders, using all new parts and components and designed using the most current technology. These grinders are designed and manufactured by a group of engineers previously from Favretto and other grinding manufacturers. Follow this URL direct for more...

<http://www.marenaind.com/fenixfavrettogrinders.html>

Marena Industries
433 School Street
East Hartford, CT 06108
800-862-7362
www.marenaind.com
marenaind@aol.com



IN BUSINESS SINCE 1960

Specialists in Swiss Screw Machine Products



Where do you go for the best parts?

When you need to improve your bottom line, the choice is simple... come to Devon for the best overall value in the industry. We offer the highest quality, best price, quick turnaround on all your precision turned parts needs. We welcome your inquiry.

Ready to make the switch?

Swiss / CNC Swiss Screw Machining
Escomatic
Centerless Grinding
CNC Worm Milling & Whirling
Hobbing and Broaching

Automotive
Medical
Firearms
Appliances
Military

DEVON
PRECISION INDUSTRIES
www.devonp.com

Tel 203-879-1437
Fax 203-879-5556

251 Munson Road
Wolcott, CT 08718-0070

Contact: David Desaulniers dave@devonp.com

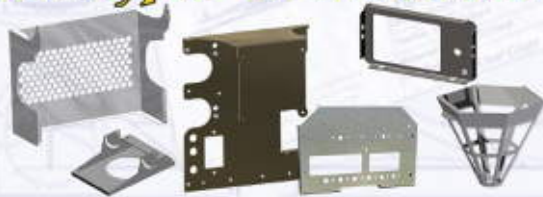
Precision Sheet Metal Fabrication

- ∞ 3D-CAD
- ∞ SHEARING
- ∞ PUNCHING
- ∞ LASER CUTTING
- ∞ BENDING
- ∞ ROLLING
- ∞ INSERTING
- ∞ WELDING
- ∞ ASSEMBLY
- ∞ FINISHING

"We strive to work closely with our customers in a spirit of cooperation, loyalty and flexibility."

3D Design Help

Prototypes & Production



Capacity to 1/4" Steel, Aluminum, Stainless Steel, Lexan ... etc.

Howard Products, Inc.

7 Brookfield Street, Worcester, MA 01605
Tel: 508-757-2440 FAX 508-831-9990

www.HowardProducts.biz E-mail: sales@howardproducts.biz

WANTED

We are looking for Spotlight Feature Stories. We will give your company a FREE 1/4 page ad for your submission with photos as well as publish stories we can use. Contact me for story submission details.

You can write it or we'll write it for you.

GatewayBill@yahoo.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



lpcote.com

High Efficiency Tri-Mist Coolant Mist Collectors Mist & Smoke Removal Assured

Efficient Oil/Coolant
Mist & Smoke Removal

Effective with Both Oil
and Water Soluble
Metal Working Fluids

No Disposable Filters
to Replace

Low Operating Cost
Energy Efficient

Virtually Vibration Free



Made in the U.S.A.

Industrial Air Filtration

Ketcham & Company, Inc.

www.ketchaminc.com

203-322-6667

FAST HOLE EDM and WIRE EDM SPECIALIST



Fast Holes are Our Specialty
High Speed Production Drilling of EDM Start Holes
Safety Wire Holes
Most Conductive Materials
Core and Ejector Pin Holes Vent Holes

SINKER EDM
PRECISION TOOLS & DIES
JIGS & FIXTURES
SPECIAL APPLICATION MACHINERY
WIRE CUT PROTOTYPE PARTS
Millions of holes to date.

Bengtson  **Tool & Die Co. Inc.**

765 US Route 3
Columbia, NH 03590

Phone 603-922-3444

Fax 603-922-3316

E-mail: dick.btd@gmail.com



TRACEY

GEAR & PRECISION SHAFT

ISO 9001 CERTIFIED

Custom Gears,
Thread Grinding,
& Precision Shafts!

Serving New England
since 1945

740 York Avenue

Tel: 800-774-GEAR

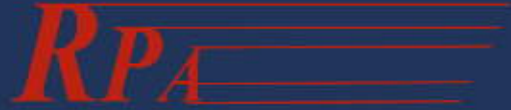
sales@traceygear.com

Pawtucket, RI 02861

www.traceygear.com



PRECISION FINISHING



*Batch Deburring
 Bead Blasting
 High Energy Tumbling
 Microscopic Deburring
 Passivating
 Polishing
 Shot Blasting
 Vibratory Tumbling*

SHOT BLASTING

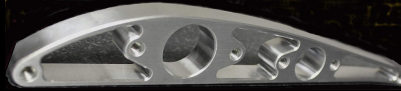
T:603-335-2132
 F:603-822-2407

www.rpabrasives.com
 ISO 9001:2008 Certified



CNC MACHINING

We are your ONE-STOP, ONE ORDER, CUSTOMER SATISFACTION experience.



ISO 9001:2008
 Compliant

Integrating our years of manufacturing know-how with the latest technologies, into your designs with QUALITY.

Machined Integrations, LLC

-integrating our expertise into your designs

PO Box 396 3 Brookfield Rd Merrimack, NH 03054

Tel: 603-420-8871 Fax: 603-420-8879

www.machinedintegrations.com

Gear & Spline Specialty for Over 60 Years!

AS9100 REV C & ISO9001:2008 CERTIFIED



UNITED GEAR
& MACHINE, CO.

1087 EAST STREET SOUTH
 SUFFIELD, CT 06078

860.623.6618 FAX: 860.654.1521

SALES@UNITEDGEARCT.COM

WWW.UNITEDGEARCT.COM

NO JOB
 TOO
 SMALL!

SPUR GEARS • HELICAL GEARS • WORM GEARS • INTERNAL GEARS • KEYWAYS • BROACHING • GEAR GRINDING • FACE GEARS • BEVEL GEARS • SPROCKETS/TIMING BELT PULLEYS

Dimensional DESIGN WORKS, LLC

711 Shore Drive, Laconia, NH

Call (603) 527-8608

sales@dimensionaldesignworks.com

www.dimensionaldesignworks.com



Serialized UID Tags

Call now for all your Laser Engraving, Laser Etching and Direct Part Marking needs.



- Co2 and Fiber Lasers
- Serialization available
- Verification to MIL-STD-130



Quality Turned Machined Parts
New Hampshire Machine Products, Inc.

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

J-1276A



J-1276A

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

The Process Isn't Complete Until It's Been to



Support Processes for Today's Technologies

Your parts get expert multi-process service at PTI Industries. We complete the processes you need in **1 stop on 1 purchase order**, reducing your manufacturing lead times and helping you improve performance.

Complete your one-stop processes with:

- Precision Cleaning
- Adhesive Bonding
- Non-Destructive Testing
- Dry Film Lubrication
- Magnesium Coatings
- Shot Peen
- Passivation
- Pressure Test
- Repair Service

Your industry is covered by our hundreds of specialized process approvals from more than 40 contractors, as well as FAA, EASA, and Nadcap certifications. As the experts in multi-process solutions for more than 30 years, we complete your job on time with accuracy, reliability, and conformance.



PTI Industries, Inc.

2 Peerless Way, Enfield, CT 06082

Tel: (860) 698-9266 Fax: (860) 698-6762

Email: jcartelli@ptiindustries.com

<http://ptiindustries.com>



Slocum Equipment, Inc.

Quality New & Used Finishing Equipment

www.slocumequipment.com 888-310-2680

**Industrial Finishing
 Solutions**

Batch Systems

Industrial Wash Enclosures
 Industrial Blast Enclosures
 Batch Powder Coat Booths
 Manual Application Equipment
 Batch Cure Ovens

Turn-Key Systems

Pretreatment Washers
 In-Line Powder Coat Booths
 Automatic Application Equipment
 In-Line Dry Off / Cure Ovens

Slocum Equipment, Inc.

3528 Quaker Lane · North Kingstown, RI 02852
 Toll Free: 888.310.2680 · Local: 401.294.0001



LEADER IN HEAT TREATING FURNACES



• Automatic temperature control from 250°F to 2250°F available in various size machines

• Ideal for jobs in tool rooms, machine shops and laboratories such as:

- Hardening
- Tempering
- Glass & Quartz
- Annealing

Made in the USA

WWW.CRESSMFG.COM
 CALL TOLL FREE: 800 882-7377
 (775) 884-2777



PRESS RELEASE

***AMGRAPH Gets Greener* Event Draws CT Dignitaries: Sets the Eco-Friendly Bar for Worldwide Packaging Industry**

It's not often that a manufacturer hosts a great party, but on the afternoon of Thursday July 21st AMGRAPH Packaging Inc. knocked it out of the park. Senator Richard Blumenthal, Congressman Joe Courtney, State Senator Cathy Osten, Norwich Mayor Deb Hinchey, and other high profile state dignitaries joined industry professionals from all over Connecticut to celebrate AMGRAPH's latest eco-friendly initiatives.

Under a sprawling tent filled with floral decor reflecting the surroundings of rural eastern Connecticut, over 120 attendees mingled, listened to speeches, and participated in plant tours of AMGRAPH's pristine facility. Guests enjoyed live music and locally sourced hors d'oeuvres provided by Green Certified caterer, [A Thyme to Cook](#).

AMGRAPH Packaging Inc. of Baltic, Connecticut is proud to be leading the eco-conscious transformation of the packaging industry. The company has officially installed two new state-of-the-art fuel cells—both designed and built in Connecticut—that generate Class I renewable energy and make the company's facility nearly fully self-sustaining. One of the first packaging production facilities to reject the use of toxic solvents, the company only uses water soluble inks, and their facility features the latest printing and laminating technology, natural lighting, and geothermic heating and cooling.

AMGRAPH takes pride in their minimal environmental impact, and was pleased to host the *AMGRAPH Gets Greener* event to share the great strides they've made in local job creation, eco-friendly production practices, and community involvement.

Founded in 1984 by Kenneth L. Fontaine, AMGRAPH employs well over a hundred residents from Connecticut and other states, and **expects their staff numbers to double in the next five years**. For over three decades, the company has built their business on environmental stewardship and sustainability with a commitment to clean air and water, sustainable packaging, and reduced dependence on natural resources.

For more information regarding the event, location, schedule, and for press inquiries, please contact Dawn Twerdy at 860-822-2060 and dawn.twerdy@amgraph.com



Amgraph President and CEO, Ken Fontaine speaks to the gathering at the recent “Amgraph Gets Greener” event.





Spur & Helical Gears
Internal / External Splines
Internal/External Acme Threads
Involute & SAE Splines
Reverse Engineering

**LAB THREADS
 &
 GEAR WORKS, INC.**

515 Main Street
 Yalesville, CT 06492
 203-949-9097
 203-949-9697 Fax
 www.labthreads.com
 mike@labthreads.com

Mini-Broach Machine Co., Inc.

Contract Broaching Services, Broaches, Tooling,
 Broach Sharpening, & Broaching Machines, with
 over 45 years experience.

info@minibroach.com
 Tel: (978) 386-7959
 Fax: (978) 386-7123



Rush Broaching Services Available!

Federal Firearms Lic
 # 6-06-009-07-7G-03042

CT LASER
 & ENGRAVING

**YOUR ONE STOP SHOP
 FOR ALL YOUR PART MARKING NEEDS**

203-265-9366 | sales@ctlaserengraving.com
 www.ctlaserengraving.com

pc PAUWAY CORP.
THINK OF THE FINISH BEFORE YOU START!

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

866.247.4082
 53 North Cherry Street
 Wallingford, CT 06492

www.pauwaycorp.com

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

CLASSIC JIG GRINDING

jiggrind@snet.net
 classicjiggrinding.com
 Ph (860) 870-4900
 Fax (860)870-1900

PRECISION MACHINING
 - SINCE 1963 -

Automatic screw machine and CNC
 Machined products for your industry

**Merrimack Manufacturing Company
 Inc.**

• 217 HARRISON ROAD • BRIDGTON, MAINE 04009
 TELEPHONE 207.647.3566 • FAX 207.647.3588
 mmc6@myfairpoint.net

* Also available: Inserts for rubber / plastic moldings

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

Contract Broaching
 Broach Design
 Broach Manufacturing
 Broach Sharpening & Reconditioning
EASTERN BROACH INC.

60 Woodlawn Road Berlin, CT 06037
 Phone: (860) 828-4800
 Fax: (860) 828-7632

Email: info@easternbroach.com Web: www.easternbroach.com
 Quality Broaching Service in the New England Area Since 1972

PRECISION GRINDING

ID & OD GRINDING SURFACE GRINDING
 HONING CNC CYLINDRICAL

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

We serve job shops and do not do machining work!
 Don't turn jobs away if you don't offer grinding! We can help you!

Bay State Machine, LLC

21 Center Parkway Plainfield, CT 06374
 Tel: 860-230-0054 Fax: 860-230-0027
 baystatemachine@hotmail.com

Complete Bearing &
 Industrial Supply Solutions

QUANTUM
 precision group

- ◆ BEARINGS
- ◆ MOTOR REPAIR
- ◆ BALL SCREW REPAIR
- ◆ ENGINEERED PROJECTS
- ◆ POWER TRANSMISSION PRODUCTS AND MUCH MORE

www.qpgllc.com 1-866-868-9574

Connecticut Tooling & Machining Association

P.O. Box 593 Windsor, CT 06095
 Tel: 860-604-8963 Fax: 413-599-1323

If you have a question, or need more info, contact: director@ct-ntma.org

Membership Doesn't Cost....It Pays!
 NTMA - Business Solutions for Metalworking Manufacturers


Qualified Tool and Gage Makers are Critical to Your Success!



Your manufacturing environment demands skilled tool and gage makers ready to take on every day challenges without delay.

- Does the need for precision tooling fixtures and gages have you scrambling to meet your customers requirements?
- Do you need a reliable, qualified tool room to manufacture your fixtures, tooling, and custom gages?

We have the TEAM to help you!

MADE IN AMERICA AT AN  COMPANY



Website: www.siroistool.com
 Phone: (860) 828-5327
 Email: info@siroistool.com



Website: www.dowgage.com
 Phone: (860) 828-2450
 Email: sales@dowgage.com



Website: www.naspringtool.com
 Phone: (860) 583-1693
 Email: info@naspringtool.com

The Sirois Tool Companies are located at 169 White Oak Drive • Berlin, CT 06037



Horst Engineering
 Precision Machining & Assembly

P 860.289.8209 F 860.289.2961
 Aerospace • Medical • Industrial • Motorsports
 East Hartford, CT

TURNING • SWISS SCREW MACHINING
 MILLING • ASSEMBLY

www.horstengineering.com



Thread Rolling Inc.
 Roll Threading & Centerless Grinding

P 860.528.1515 F 860.289.2961
 ROLL THREADING • ROLL KNURLING
 CENTERLESS GRINDING

www.threadrolling.com



**METAL STAMPINGS
 PRECISION COINING
 PROGRESSIVE DIES
 LASER WELDING
 ASSEMBLY
 FINISHING**

A 'Can Do' Attitude Since 1912



PRECISION STAMPING & ASSEMBLY

PO Box 427
 Durham, CT 06422
 Tel: 860-349-1756
 Fax: 860-349-3602
info@hobsonmotzer.com
www.hobsonmotzer.com
 ISO 9000:2000

PRECISION FORM GRINDING AND THREAD ROLLING SPECIALIST



Unitedcenterlessgrinding.com
 (860) 289-2987



**UNITED
 THREAD
 ROLLING, LLC**
Unitedthreadrolling.com
 (860) 290-9349

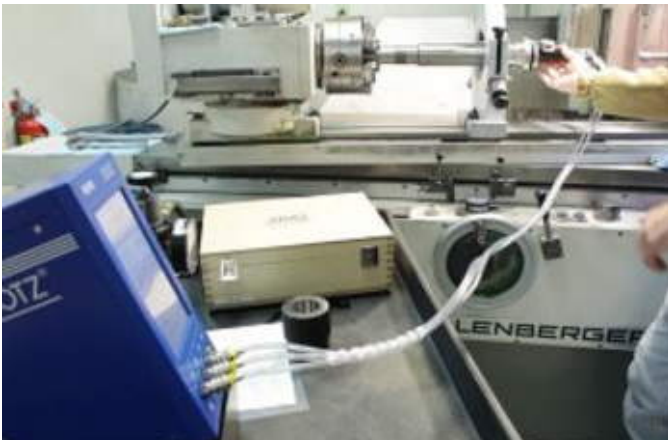
25 Rosenthal Street
 East Hartford, CT 06108

fax: (860) 289-3142



with a high solids two part epoxy. Once completed, the spindle is now ready for crating.

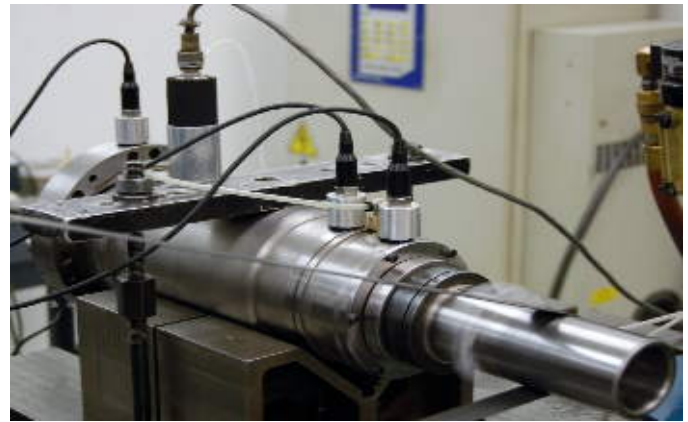
The bearings in high speed spindles are preloaded. That is, they are already in some slight elastic deformation. Bearing material, both the rolling elements and the races, are rather brittle. And a hard round object such as a ball bearing has an extremely small contact area on a hard race surface. For these reasons, spindle bearings are very susceptible to damage in transit. Severe jarring can result in plastic deformation of the races or what we call in bearing lingo, Brinelling. This will result in poor performance and premature failure.



After every spindle is re-assembled, it is checked in several ways. Here the tool interface is being verified with an ultra-precise air gauge.

To avoid this damage, we go to extraordinary measures to protect your spindle. Every spindle is cradled in medium density closed cell foam and there is no direct contact between the spindle and a hard surface. Moisture is also an enemy. So all non-painted surfaces are sprayed with an industrial rust inhabitant. Then, every spindle is wrapped in Cortec Vapor Phase Corrosion inhibitor (Mil-Spec B220119/020). Your spindle is treated like the valuable precision tool that it is.

We want our manufacture ring friends to know that we are always ready to help where we can. As noted, if you call HST during business hours with a question, you will **not** get some automated machine asking you to listen to a long menu. You won't have to press any buttons, leave a voice message and wonder if anyone will call back. You will speak with a real person right off the bat. If a customer calls during business hours, one of our customer service people will make it their job to provide the required assistance.



Spindles are mounted on a special HST test stand for full instrument analysis of vibration, balance and temperature.

Finally, after all testing is complete, the spindle is repainted, carefully packaged and returned to its owner for years of excellent service.

Conclusion

Ralph Frisella started HST over 30 years ago to provide the manufacturing community a high quality alternative spindle repair service. Today customers from all over the world take advantage of our service.

We invite all to visit our web site. Our blog pages have helpful tips and information. The FAQ pages answers the most common questions concerning spindle repair. We have a portfolio section that reviews many of the different types of spindle repairs we've done over the years. You're likely to find the type of machine you have. And our favorite page is the testimonial page where we get to publish what our customers think of us.



High Speed Technologies, Inc.

P.O. Box 536

16 Deer Run Road

Candia, NH 03034 USA

www.highspeedtechnologies.com

To reach our customer service desk call

603.483.0333 or email

info@highspeedtechnologies.com.

You'll reach a helpful friendly person.



Wire & Sinker EDM Services

- ⊗ 5 Axis Wire EDM
- ⊗ Orbiting Sinker EDM

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

NORTHEAST TOOL & DIE CO., Inc.



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

Quality Tooling Solutions since 1992

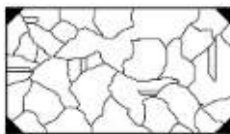
PO Box 28 16 Aldrich Ave. Norway, ME 04268 www.northeasttool.com

PRESS RELEASE

WE PASSED OUR NADCAP REACCREDITATION!



Sturbridge Metallurgical Services takes great pride in the quality of work, and reports they do for every one of their customers. They are fully aware of how important their job is and they take great pride in putting in the hard work, quality and care it takes to keep their standards perfect. They thank and appreciate each of their customers and ask for your continued support. They continue to keep their standards and quality high so you can have full confidence in the test results.



**Sturbridge
Metallurgical
Services, Inc.**

www.smslabs.com
tel: 508-347-5288
fax: 508-347-8288
info@smslabs.com



DYNAMIC BALANCING



NEW ENGLAND
SPINTECH



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

Gateway Mini Ads

THREAD ROLLING

East Coast Thread Rolling

Threading

Knurling

SEMS

Forming

Assembly



Phone 203-441-6944 Fax 203-879-1902

Over 35 years' experience

HELP WANTED

Lab Technician Wanted

Sturbridge MA company seeking
Mid-Level Lab Technician.

Job Entails Precision Cutting,
Sample Mounting, Sample Grinding/
Polishing and Some Microscope
Analysis. Must be able to stand
for 6-8 hours per day.

Lab Experience Preferred. Email
Resume to resumes@smslabs.com –
no calls please –
agencies need not email.

JOB SHOP FOR SALE

Lock, Stock, and Barrel!
Bridgeport, CT area. Owner willing to stay on
during transition. Call: 203-333-4369 Fax:
203-334-8260 Email: poplartool@att.net

JOB SHOP

SANDBERG MACHINE

**Your own maintenance department,
with no cost until you need it!**

Large turning, boring, milling, welding,
fabricating. We also have a large variety
of CNC machines available.

Large or small, we can do it all!

401-568-1602

Check out our website

www.sandbergmachine.com

**“We now offer turning &
threading on our 60” CNC VTL!”**

WANTED

OLD 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

SWISS TURNING OPEN TIME

- Open time for your next project
- Short Runs OK
- QC Certification, digital inspection
- AS-9100 / ITAR registered
- Full service job shop

Straton Industries

180 Surf Avenue, Stratford, CT 06615

T: 203-375-4488 F: 203-381-9542

Email: AP@Straton.com

Website: www.straton@straton.com

WE NEED YOUR STORY

**We'll pay you for
your story! It's easy
to do and it's 100%
free.**

gatewaybill@yahoo.com

JOB SHOP FOR SALE

Production Machine Shop

Mostly turning and secondary equipment
in S/W New Hampshire. 5000 sq. ft.
block building on 5 acres with 400 am.
208 volt phase service. Will consider
selling business and real estate
separately. Owner looking to retire. For
further info please see Craigslist post ID:
5758444452 or email
ehrlich.diane@gmail.com

The Gateway Magazine

Bill Bryson, President

The Gateway 336 Governors Road, Milton, NH 03851

All rights reserved. Duplication of this magazine or parts thereof without written permission is prohibited.

This magazine is distributed at no charge to engineers, purchasing decision makers, business owners,
advertisers and qualified personnel in manufacturing companies.

The cost of a subscription is FREE.

Spotlight feature articles, New Products and Literature announcements are published free of charge at the
discretion of the publisher and with the availability of space. Contact us for details.

The Gateway reaches: 7500+ NE Companies 2500+ Job Shops, 25,000+ Readership

Tel or Fax: 603-755-9232 E-mail: gatewaybill@yahoo.com

MINI AD RATES:

Single Column is 2.4"/Double Column is 4.8"/Triple Column is 7.3"
\$35.00 PER COLUMN INCH.

You only pay for what you use, to closest 1/16".

(Ads running only 1 mo. priced at \$45.00 per in.)

HEADERS ARE SUPPLIED FREE

(Yellow background, Red Subway Font)

Email your info to The Gateway at gatewaybill@yahoo.com

Questions? call 603-755-9232

We lay out, quote price and email a draft copy to you approval
before we will publish.

No extra charge for photos, graphics or ad layout.

5% discount on all prepaid ads.





ACR Division

17 Park Avenue
Hudson, NH 03051
(603)598-0891 Fax (603)598-0894

WWW.DRGAIR.COM

45 Francis Street
Leominster, MA 01453
(978)537-6064 Fax (978)537-9871
Our NEW address above as of 7/1/2016

Manufacturer's Distributor for:



- Rotary Screw**
- Single & Two Stage
 - Variable Speed - VSD
 - Oil Free
 - High & Low Pressure
 - Vacuum
 - Portables

- Air Dryers**
- Refrigerated
 - Twin Tower Desiccant

- Filtration**
- Oil Removing
 - Oil/Water Separator
 - Drains

Full Stock of Genuine Sullair Parts and Lubricants



- Reciprocating**
- Pressure & Splash
 - Climate Control Units
 - Oil Free



Contractor Compressors
Sprinkler Compressors



High Pressure Systems



Hudson, NH – Northfield, NH
Leominster, MA
Toll-Free (800) 856-4046
Tel. (603) 598-0891
Fax: (603) 598-0894

**24-HOUR
EMERGENCY
SERVICE**
YOUR RELIABLE SOURCE
FOR COMPRESSED AIR
EQUIPMENT AND SERVICE



Safety Air Tool Accessories
Air-Line Controls

HITACHI Inspire the Next

- Oil Free Rotary & Scroll**
- Single & Two Stage
 - Variable Speed - VSD
 - Air Cooled/Water Cooled
- Pressure Vessels & Air Receivers**



Hose Reels



CRP
Oil / Water
Separators



Refrigerated Air Dryers
Filters
Desiccant Dryers



Air & Gas Filtration to 6000 psig
Desiccant Dryers
Oil/Water Separators

Services: Any Type of Compressor • Installation, System Piping
Low Pressure and High Pressure Air Systems • Medical Air & Vacuum
Maintenance Programs • Rental Units Available (Delivered & Installed) • Air Dryer Repair

Engineered Services: Complete System Design • In-Plant Air Surveys • Energy Audits • Leak Detection
• Pressure, Flow & KW Monitoring

Web Site: www.drgair.com • Email: don@drngair.com

and of course... SERVICE SERVICE SERVICE!!

SPECIAL SALE



Heat Treatment Master Control Manual focuses on heat-treating to ASM, SME, and AISI standards. It has been created for use in student education, as well as to guide professionals who have been heat treating their entire lives.

What is different with this manual is that it goes beyond dealing with just the heat side of the treatment process. It continues the process by using cryogenics to produce a 99.9 to 100% transformation of the finest, best grain structure possible. This manual tells exactly how to get the real cost savings and best possible life.

If you desire to produce the best heat treated metal possible and gain an understanding of what goes on in the heat-treating process, this manual will do that.

Written in everyday easy to grasp language, it will serve as a training manual from day one in a classroom, then serve as a day-to-day reference for a lifetime.

This full-color, illustrated manual zeros in on the popular tool steels, alloy steels, heat-treatable stainless steels, case hardening steels, and more. It deals with these metals with fully illustrated processing recipes.

Written for toolmakers, engineers, heat-treaters, procurement, management personnel, and anyone else who is involved in the metals industry.

Page size 7.75" x 10.625" 338 pages, spiral soft cover to lay flat open for quick, easy reference.

Whether you are purchasing heat treatment, or doing in-house processing, please remember this! The hardness reading of any piece of steel is ONLY an indication of hardness! It does not reveal how well the heat treat process was performed, nor does it reveal how terrible the wear resistance or life of the part might be. Good heat treatment is all about creating good grain structure. You don't need to be a metallurgist to understand the process any more than you don't need to be a chef to properly hard boil an egg.

TO ORDER THIS BOOK AND UNDERSTAND HEAT TREATMENT IN PLAIN EVERYDAY ENGLISH...

Send check or money order for \$75 to The Gateway. Free S&H in the USA.
Got a heat treat problem? Need some ideas of what might be wrong, call the author at 603-755-9232.

FORGINGS

MATERIALS	ADVANTAGES
<ul style="list-style-type: none"> ◆ Carbon Steel ◆ Stainless Steel ◆ Alloy Steel ◆ Aluminum ◆ Scandium 	<p>Near Net Shape Parts Strength Time Savings Efficiency</p>

CAPABILITIES

Small or Large Lots
Parts of ounces up to 20 lbs
Up to 15" long
Drop Hammers:
1500 to 5000 lbs



Metallurgical Lab Testing Available




Smith & Wesson Specialty Services

2100 Roosevelt Ave. Springfield, MA 01104
www.smith-wesson.com

Tel: 413-747-3297
Fax: 413-747-3423
flatley@smith-wesson.com


Also offering: Heat Treat, Plating & Finishing

Non-Metallic Die Cutting & Stamping



The Buswell Manufacturing Company is a precision die cutter of non-metallic material, for seals gaskets, diaphragms and washers, used by the automotive, marine, industrial & bearing industries.

Since 1945, we have specialized in die cut bearing seals made from rubber coated fabric, Teflon® and Teflon® coated glass fabric. We also perform in house tool & die making.



229 Merriam Street • Bridgeport, CT 06604-2915
Phone: 800-682-5207 • Fax: 203-368-2374
E-mail: Buswell.mfg@snet.net
ISO/TS 16949: 2002 Registered

CNC Turn/Milling





Milling





WaterJet Cutting







HydroCam Corporation

248 Sheep Davis Road - Concord, NH 03301
Ph: (603) 224-4872 - Fax: (603) 224-5927
E-Mail: Info@hydrocam.com www.hydrocam.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



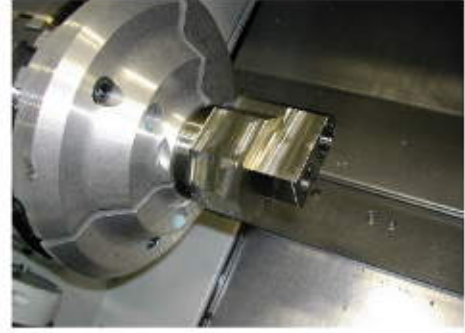
JCB



Performance Machine, LLC
 Concord, NH
www.jcbperformance.com
 (603) 415-0110

CNC Machining of Stainless Steel
 303, 304, 316, 321, 347
 17-4PH H1150, HH1150, H900
 Nitronic 50 & N50 HS, Nitronic 60

CNC TURNING MULTI-AXIS MACHINING



Burnā Shave

And then the bucket

Kicked first the gas

And tried to duck it

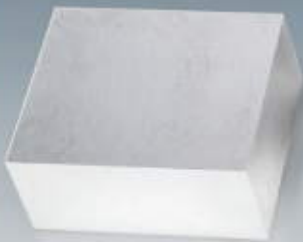
He saw the train

This road sign posted in 1949

Machine-Ready Solutions™

Rethink Your Workflow – Reduce Cycle Time

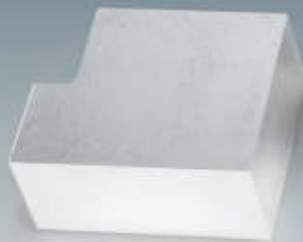
SEE US AT
 IMTS2016
 BOOTH
 #W-1279



Machine-Ready Blanks
 Made to order from one to thousands, close tolerance and ready to load directly into your CNC machining center.



Machine-Ready Dovetail Blanks
 Dovetail Blanks include a precision dovetail to match your brand and model of workholding fixture.



Machine-Ready Material Prep
 Squaring, flattening and milling, including adding features and removing large amounts of material—your stock or ours.



Finish-Machined Components
 Complete-to-print finish components, including processing, sub-assembly and managed inventory.

Machine-Ready is Lean-Ready

Being Machine-Ready lets you get right to the high value process of finish-machining, by eliminating material prep and other time consuming processes. Choose the Machine-Ready Solution that best supports your busy shop and start increasing throughput, now.



Call us to discuss your next production job.
 800-234-5613 • www.tciprecision.com