



ISCAR'S  
WERTHEIMER

KENNAMETAL'S  
CARDOSO

MILL/TURN  
MACHINES

# Today's Machining World

THE MAGAZINE FOR THE PRECISION

PARTS INDUSTRY



september 2007 volume 3 issue 9

www.todaysmachiningworld.com

Today's Machining World Magazine  
P.O. Box 847  
Lowell, MA 01853

**CHANGE SERVICE REQUESTED**

PRST STD  
U.S. Postage  
**PAID**  
Permit # 649  
Liberty, MO

John Ratzenberger  
Rolls With:

# Made in America

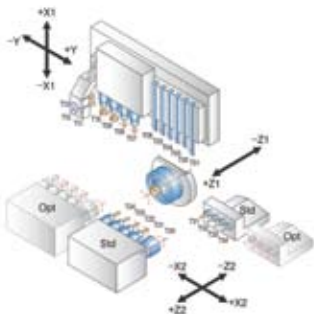
september 2007

# Your Customers Demand the Highest Quality at The Lowest Cost.

**NexTurn** CNC Swiss turning centers deliver world-class machining performance and high precision capabilities found only on the best CNC Swiss Turning brands. And they're priced thousands less than comparably equipped machines.

In sizes ranging from 12mm to 38mm, Nex-

Turn D series machines come equipped with standard features such as 20 tools (8 live with rigid tapping on all spindles), oil cooled direct drive motor (main and sub spindle), front working modular tooling system, program check by manual pulse generator, full C-axis contouring (.001 degrees) for main and sub spindle. And,



SA-20D tool layout.



Oil cooled built in motors.





a Fanuc 18iTB Dual Processor/2 Path Control that comes with all the software needed to make your NexTurn machine productive right out of the box. Custom engineered configurations are also available.

With a nationwide parts and service organization and an industry leading two-year

warranty, you can be confident your NexTurn Machine will remain productive.

Contact NexTurn today ... our low cost investment and high productivity will provide a positive impact on your bottom line.

**NEXTURN**  
SWISS TURN LEADER

# So Should You.



603-474-7692

[www.nextturnswiss.com](http://www.nextturnswiss.com)

# Exceptional

## Inventory. Delivery. Service.



### Just a phone call away

Wilcox Steel is an application oriented steel bar supplier that will provide you with the grade and size bar needed for your specific job requirements. Our extensive inventory and Lewis Technology production process enables us to provide you with exceptionally fast turnaround, and our on-staff degreed metallurgist will help match your application needs to our process capabilities and source material that's right for your job.

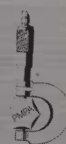
We invite you to call Fran Larson today and discover how you can get exceptional service, inventory and delivery from your steel bar supplier.

Plant and Warehouse-- Green Bay, Wisconsin

Warehouse--Youngstown, Ohio

**920-347-4730**

Email: [sales@wilcoxsteel.com](mailto:sales@wilcoxsteel.com)



# in this issue

  
Today's Machining World  
September 2007 volume 3 issue 9



## Features

### 32 Eitan Wertheimer

The CEO of ISCAR on singing his song *with Lloyd Graff & Noah Graff*

### 38 Carlos Cardoso

Kennametal's CEO on his vision and his life *with Lloyd Graff & Noah Graff*

### 54 How it Works

Are Mill/Turn machines the wave of the future? *by Barbara Donohue*

## Departments

### 7 Editor's Note

### 11 Forum

### 13 Swarf

### 20 Book Review

*Are We Rome?*  
*by Jerry Levine*

### 22 Fresh Stuff

### 48 Shop Doc

### 50 Next

### 52 One on One

### 62 Product Focus

Mill/Turn Machines

### 70 Think Tank

### 71 Postings

### 78 Afterthought

*Pockets of Memory*

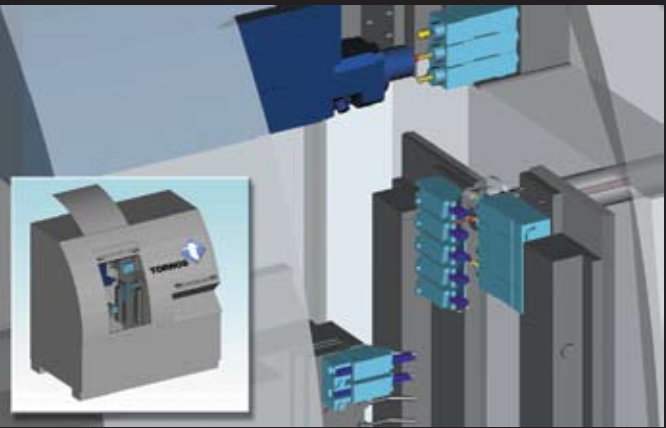
### 73 Ad Index

### 74 Classifieds

in this issue

**PartMaker®**

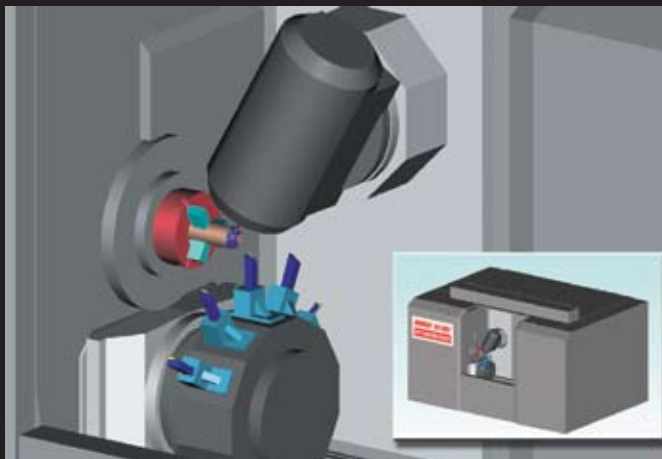
**Swiss  
CAM**



# The Peak Productivity CAM Solution

✓ Automates CNC programming

✓ Reduces Machine Set-Up Time



**PartMaker®**

**Turn  
Mill**

**PartMaker®**  
• VISUAL • INTUITIVE • MORE PRODUCTIVE

**CAM Software That Knows™**

● Mill

● Turn

● Turn-Mill

● SwissCAM

● Wire EDM

■ Toll free: 1-888-270-6878 ■ [www.PartMaker.com](http://www.PartMaker.com) ■ email: [info@PartMaker.com](mailto:info@PartMaker.com)

540 PENNSYLVANIA AVENUE, SUITE 315, FORT WASHINGTON, PA 19034 • 215-643-5077



# Today's Machining World

www.todaysmachiningworld.com

A Screw Machine World Inc. Publication  
4235 W. 166th Street  
Oak Forest, IL 60452  
(708) 535-2200

The Apple of her Eye  
Lloyd Graff  
(708) 535-2200

Managing Editor  
Jill Sevelow  
jill@todaysmachiningworld.com

Features Editor  
Noah Graff  
noah@todaysmachiningworld.com

Web Manager  
Noah Graff  
noah@todaysmachiningworld.com

Creative Director  
Terry Ntovas  
terry@todaysmachiningworld.com

Proofreader  
Doug Pav

Circulation Director  
Judy Palmer  
judy@todaysmachiningworld.com

Sales Manager - East/West Coast  
Bill Papp - 845-613-7329  
bill@todaysmachiningworld.com

Sales Manager - Midwest/West Coast  
Dianne Lach - 708-460-6383  
smlddl@comcast.net

©2007 Today's Machining World, Inc. All rights reserved.  
Reproduction in whole or in part without the written permission  
of Today's Machining World™ is prohibited. Today's Machining World  
is published monthly by Today's Machining World, Inc.,  
4235 W. 166th St., Oak Forest, IL 60452.

**SUBSCRIPTION/CHANGE OF ADDRESS:**  
Basic subscription rate: US\$40 for domestic/US\$55 for international.

**Send address changes and/or subscription inquiries to:**  
Today's Machining World,  
P.O. Box 847, Lowell, MA 01853 or email  
cs-smw@computerfulfillment.com

**EDITORIAL:** Send articles for editorial consideration to Lloyd Graff, Editor.

**CPC Publication Agreement Number 40048288**

**Canadian Return Address:**  
World Distribution Services  
Station A, P.O. Box 54  
Windsor, ON N9A 6J5  
email: cpreturns@wdsmail.com



# editor's note

## Tragedy of Character

Two young men still at the top of their games copped pleas on August 27, 2007. They will both be going to Federal Prison despite their fabulous wealth and instant name recognition. They gambled their freedom and careers with bizarre acts of recklessness abetted by cronies without the strength to say no to them.

Gene Haas, the unlikely billionaire of American machine tools, and Michael Vick, the quarterback who redefined the position in the NFL, both saw their freedom slip away when their associates flipped to the prosecution. Even the shrewdest legal talent money could buy couldn't keep them out of jail.

Haas' hubris led him to tax evasion to beat the U.S. treasury out of millions of dollars because he thought he was wronged on a patent dispute. Vick electrocuted pit bulls which he had gambled on, and buried the bodies on his land.

Haas and Vick were both single men who defied the conventional wisdom of their games. Haas told the world he would build a vertical machining center in L.A., sell it for less than the Japanese builders, cut the price year after year and service it like the Maytag repairman.

Vick said the quarterback was a running back and scored points with his feet. He destroyed defenses built to thwart skilled white boys who played the vertical passing game.

Haas and Vick are iconoclasts in their respective worlds. They broke the defining rules of their peers and were vilified by the established players. Both guys loved to stick it to the reigning authorities who mocked their unorthodoxies and said they had to fail because they were different and too difficult.

Maybe when you keep showing up everybody else in your field, make huge money, and travel the country in private jets, you think that society's rules are for the little people. You're going to do what you're going to do, and you're untouchable. It's so Macbeth.

But in America, presidents get impeached, billionaires do go to jail, and quarterbacks plead. The judicial system is still painfully stacked towards the rich and famous, yet on August 27, two of our richest and most famous men conceded their freedom at federal court houses. Haas and Vick – two four letter words synonymous with greatness – and utter stupidity.

Lloyd Graff  
Editor/Owner

editors note



**Lloyd Graff** has an M.A. in journalism from the University of Michigan. Lloyd splits his time between buying and selling machinery, writing Swarf and swarfblog and playing Fantasy Baseball on Yahoo. He is married to Risa, a world champion in Tae Kwan Doe. He has three children and a granddaughter who are all above average. One of his life goals is to make 65 consecutive free throws on his 65th birthday.



**Barbara Donohue** received her mechanical engineering degree from MIT. She worked in design, heat transfer and manufacturing for several years before changing careers to become a journalist. Now she writes about technology and business from her home office in Acton, Massachusetts. When not writing, she sings in a choir, volunteers as a literacy tutor, and is weekend "foster mom" to a yellow Lab puppy named Tikva that is training to become a wheelchair assistance dog.



**Noah Graff** has been working at *Today's Machining World* since 2005. He graduated from the University of Wisconsin Madison, majoring in film and history. He is the features editor for *Today's Machining World*, as well as the videographer for *TMW* and Graff-Pinkert & Co., producing training videos on screw machine maintenance and video stories for the *TMW* website. Noah enjoys investing, filmmaking and improvisational comedy. He is also a master of the sacred art of live band karaoke.



**Jill Sevelow** has incorporated a few of her passions into her last three professions; teacher, department store buyer and managing editor of *Today's Machining World*, a role she's relishing. Jill is an avid gardener and dedicated mah jong player, volunteers her time & creative energy for exceptional organizations, and adores her friends and family. Her greatest source of pride has been raising daughters Jade and Tess, her two most favorite people on the planet.

**NEW**

# WinMax Control Software takes machining to the next level.

Verification Graphics with  
Solid 3D Rendering

Swept Surface

Tool & Material Library

NC / Conversational  
Merge

Tool Center Point Management

SelectSurface Finish Quality

With intuitive software and real visual part representation, WinMax is a generation above any control software currently being offered. From a customer's perspective, WinMax significantly reduces setup time and provides consistent and improved surface finish quality.

With multiple patents, WinMax has more than 25 new technology features that will take your shop to the next level of productivity.

**Experience the power of WinMax.  
Contact your local distributor for a demo.**

**HURCO**  
I N C O N T R O L

www.hurco.com 800.634.2416



VM Series  
General Purpose



VMX Series  
High Performance



VTX Series  
5-Axis



HTX Series  
Horizontal



TM Series  
Lathes

Machines shown with options.

# The Parts You Need When You Need Them



**The  
Service  
You  
Expect**

## **AUTHORIZED DISTRIBUTORS**

- Accu Trak Tool Corp.
- B&S Screw Machine Services
- Boyar Schultz (LDE)
- DT Tool Holders (Carb insert)
- Davenport
- M & M Mfg. Co.
- Quality Chaser Co.
- Schlitter Tool
- R.L. Spellman Co.
- Hardinge

## **IN STOCK AND READY TO SHIP**

B&S spindle assemblies • B&S #2 & #00 windows, doors & rails • bearings • belting  
• cam blanks • cams for multi spindles • carbide inserted box tools • chains •  
chasers • chip carts for B&S and Acme • chip conveyors • collets, new or used • collet  
tubes • cut off blades • cutting oil screens • deflector cables • die heads • die head  
yokes • drill bushings • gaskets • gears • knurls • lipe pusher assemblies • pads  
• pulleys • pumps • pushers, new and used • pusher tubes • rebuilt dynabrade  
motors with digital timer • schematic prints • Servo Cam units • shafts • silent stock  
tubes • spindles • tap bushings • timing cams • tool holders for single and multi  
spindles • tubing • vibra check machine mounting pads • plus some wickman stuff

# **AMSCO**

**AUTO-MATIC SCREW MACHINE TOOL & SUPPLY CO.**

Ask for Pat Pagac or Wendell Rogers

6775 Brandt Rd., Romulus, MI 48174

800/832-6726 • 734/728-8500 • FAX 734/728-8020

Visit our Website: [www.autoscrewamsco.com](http://www.autoscrewamsco.com) E-Mail: [office@autoscrewamsco.com](mailto:office@autoscrewamsco.com)



**Over 50 Years  
of Satisfying  
Customers**



### From the Heart

I read the article about the unfortunate death of your employee (see *TMW* Swarf, Aug. 2007). I was touched at your memoriam. I was at one point suicidal in conjunction with a bipolar type 1 diagnosis. I know what it feels like to reach that point of disparity, and want you to know that he knew how you felt about him. When an old work horse is no longer able to work, he knows it. If you have noticed, they tend to shy away from their owner as if they are embarrassed at the fact; however, in time, if the owner holds onto the horse, it sees that its owner still loves him or her just the same for all the times they had together and the loyalty they have for one another.

From how you speak of him, the gentleman was not a dumb man. I am sure he found love in the Graff family. May peace find you all at Graff/Pinkert. Your support still carries me, and a death in your business is a death in my family. Continue to enrich the lives of those you reach through your writing in honor of your fallen hero. The thing about people is that they never die. By touching us, enriching our lives, and teaching us, they continue to live on in the lives of those who reflect what they learned from them. I am deeply sorry for your loss.

Tyler Dwight Shinaberry  
Fredericktown, OH

### To the Gut

Earlier this year, our company was one of the lucky ones invited to a meeting with Ametek (see *TMW*, Swarf, July 2007) demanding an eight percent minimum price reduction effective immediately, even on open orders. I doubt anyone there thought that the conference wouldn't have cost reduction mandates, but none of us had attended one that was handled so poorly. We were berated and beaten and the questions that suppliers had (like how much potential work increase was available in exchange for our

price reduction and whether Ametek would help negotiate better raw material pricing) were unanswered. Adding insult to injury, we were required to fly to Orlando to attend this meeting, taking days out of our schedules. I doubt many of us will fall for this when they schedule the next "Preferred Supplier" meeting.

#### They did inform us of the following:

They own high-end brands and are #1 or #2 in their niche markets. They plan to double in both size and profitability every five years. They plan to move \$40–50 million offshore each year. The eight percent price reduction and 60-day terms were simply the "ticket to the dance" as they repeatedly put it. They would really like to see the price reductions retroactive to the previous year or even a rebate for the entire previous year. There will be a significant reduction to their supplier base in the next 2–3 years but there was no commitment to this group of select suppliers that they would actually eliminate the suppliers who were not invited.

In effect, we were asked to finance Ametek's profitability and growth and to say thank you for the opportunity to do so while they are using off-shore labor to finance the balance. The truly sad part of this whole story is that all of us who rely on the stock market to finance our 401(k)s are responsible for this outcome of demand for ever-higher stock returns.

I believe that many of the suppliers who were bullied into accepting these new "terms" are simply buying the time to find new customers to fill this slot. How sad that another great American company has come to this.

A sadder but wiser (anonymous) Ametek Supplier

# Full Service Company

Do You Need Help with Your Acmes?

Just call  
**CHAMPION** 



## Service

Field Service  
Machine Testing/Maintenance  
Toolslide Conversions  
Slide Grinding/Refit  
Job Layout and Tool Design Service

## Installation

Attachments, PLC, Stock Depletion,  
Indexing Kits, Hi-Low Drive, Clutches,  
Logan Threading, Air Pick-Off, Backfinish,  
Turn key Operations, & Electrical Upgrades

## Rebuilding

Complete Machine Rebuild  
Reconditioning  
Carrier/Spindle Rebuild

## Distribution

Hardinge, Logan, Timken, CJ Winter, Kennametal,  
Schlitters, Empire, Boyar Schlutz, Watkins, Tri-Lock,  
Cyclo Index, Bokum, Somma, Ramsey, GSN,  
Ruthman Gusher, New Market, New Method,  
Whitcore Tube, Trusty Cook, Loc-Line, Slaters

## Inventory

\$2 Million in New Inventory  
20,000 sq. ft. of Quality Surplus  
300 new sets of Cams in Stock  
Acme Machines

## Experience

6 Salesmen ready to Help  
8 Outside Sales Reps  
Trouble-Shooting machine problems

[www.championscrew.com](http://www.championscrew.com)

**1** Call  
Order  
Shipment  
Source



30419 Beck Road Wixom, Michigan 48393  
Phone (248) 624-4545 Fax (248) 624-8722  
Toll Free (800) 727-2763

 **CHAMPION**  
SCREW MACHINE ENGINEERING, INC.

# Searching for the great Honey Crisps

I've had a lifelong interest in apples. I made a pilgrimage to Wenatchee, Washington, to check out the harvest a few years ago. I can talk with authority on the difference between the Delicious and the Braeburn and why the Rome makes the best baked apple. One of the great advances in apple horticulture in recent years is the wonderful new variety – Honey Crisp.

Apples don't just happen. The earliest apples (other than in the Garden of Eden) came from Kazakhstan. They were scrubby little round things, barely edible, but they gave us the basic DNA to work with. For hundreds of years breeders have been crossing apple breeds to come up with tastier and longer-lasting species.

The Honey Crisp was developed at the University of Minnesota. For my taste, it is the absolute best apple I've ever eaten, which doesn't mean I don't also love Melrose, Mac, Gavenstein and Pippen too. But the taste, texture, and aroma of the Honey Crisp is the best combination I've found.

I am not alone in my appreciation of the fabulous variety. Stores always sell them for a premium price because they are scarce. The growers know they are hot, but they are quite difficult to grow.

I recently talked to an orchard owner from Western Michigan at a Chicago's farmer's market. He told me that he would be comfortably retired by now if he had planted Honey Crisps in 1992 when he first tasted them. He says he waited until '96 to plant his first trees and has been adding trees every year.

He says they are one of the most finicky varieties to cultivate. They require extra calcium to thrive. They do not tolerate heat well. They do not give as much fruit per tree as other varieties. But if you can grow them, you sure can sell them. Whole Foods can sell them for as much as \$4 per

pound. The specialty packages all covet them for gift packs at Christmas. They sell out quickly at every farmer's market. If you have tasted a Honey Crisp, you are going to buy it every time unless you are just looking for applesauce ingredients.

The Honey Crisp story is very much the story of the machining business. The demand is out there for a superior product. For the intrepid folks who see the opportunity and get in early and then develop the particular expertise to master the Honey Crisp variety, riches are to be reaped. Eventually the Chinese or New Zealand growers will master the techniques for cultivating the Honey Crisp apple. But the window at this moment is still open.

The task for growers and manufacturers is to continually search for the next Honey Crisp, then have the guts to plant the trees, and have the perseverance to learn the nuances of cultivating them.



## CNC SWISS

Citizen – Star – Tsugami – Tornos Bechler  
Hanwha – KSI – Nexturn – Nomura

## CNC LATHES & MACHINING CENTERS

Miyano – Mori Seiki – Mazak – Okuma – Daewoo – Gildemeister  
Index – Traub – Kitamura – Matsuura – Nakamura Tome

## BARFEEDS & BARLOADERS

LNS – IEMCA – FMB – EDGE – MTA – SMW

**Buy – Sell – Consign – Auction**



**Mori Seiki DL-150Y**, 1998, Y-Axis, Twin Turret/Spindle



**KSI SQT-32**, 2005, 1 1/4", 5LIVE/40D/5+1+2ID/1+3BW, Mag BF



**Tsugami BS-20BIII**, 2001, 3/4", 4ROT/60D/4ID/3BW



**Miyano BND-42T5**, '00, 1 1/8", 12 Station Turret, Sub-Turret  
Iemca Boss 542 Barfeed



*Automatic Machinery Co., Inc.*

150 Martin Street Longmont, CO 80501

Ph: 800-543-7666 Fax: 303-651-6556  
www.automatics.com tmw@automatics.com

## Does the stock market yo-yo

because of the mortgage madness mean a recession in 2008? As I write this in late August, it seems quite possible.

Here's how I see what is going on: Housing prices in many markets, particularly big cities on both coasts, have skyrocketed over the last ten years. Price inflation became a bubble when unscrupulous lenders and money sellers enticed buyers desperate to invest in the American dream of home ownership by offering teaser loans which enabled people to get into homes that they probably could not afford unless interest rates settled at historically low long-term rates. These were not ridiculous bets because adjustable rate loans had been good choices for many years when Alan Greenspan had been holding rates down post- 9/11. But when the Fed started pushing interest rates higher because of a knee-jerk reaction to perceived inflation, the adjustable rate loan became a noose for many people who could barely afford their homes.

The boom and bust cycle in homes is hardly a new phenomenon. We see a collapse every 12 to 15 years it seems, as the lessons of leverage are forgotten by both lenders and borrowers.

The dirty little secret of home mortgages is that they have become Wall Street instruments traded in packages around the world. This is why banks in Europe and Japan end up in trouble, because a hard-working Mexican immigrant family in Stockton, California, commuting two hours to the Bay area to work, can't make their re-racheted house payments.

Several stupid twenty-something hedge funders gobbled up billion dollar packages of these ready-to-tip mortgages while they eyed their Hamptons hideaway. Their thirty-something bosses cheered them on. Now the investment bankers are looking at each other's naked naivetè. How many times have these Ivy League "masters of the universe" proved to be totally ignorant of the real world? Unfortunately, cascading credit woes quickly filter down to the world of lumber, windows and faucets. Homebuilders are working on subdivisions planned years ago. Now there is little mortgage money, even for the good risks. The whole housing market has major indigestion and this means falling home values, which prompts folks who are struggling to make a payment to walk away from their home, which is now worth less than they owe. And this is how a small, relatively contained problem becomes a panic and quite possibly, a nasty recession.

Lots of people get scared when they see a rash of "for sale" signs in the neighborhood, and prices falling across the board. In our global village, everybody is connected. This is how an economic ingrown toenail becomes an emergency room nightmare.

Ben Bernanke's Fed has appeared to always be one lap

# swarf

behind the events. A rapid drop in interest rates seems like the best relief available. He does not want to bail out the bird-brained bankers and ratings agency enablers who got us into this mess, but for the greater good he may have to.

The legitimate mortgage business will come back, and some of the phony brokers will reappear with new names, but it will take time. The dot.com boom burst eight years ago, and Silicon Valley has emerged stronger than ever. Mortgage madness will abate and the housing surplus will be absorbed. But it will take time. I'm afraid 2008 looks like a tough year. The political ramifications will not help incumbents of either party.

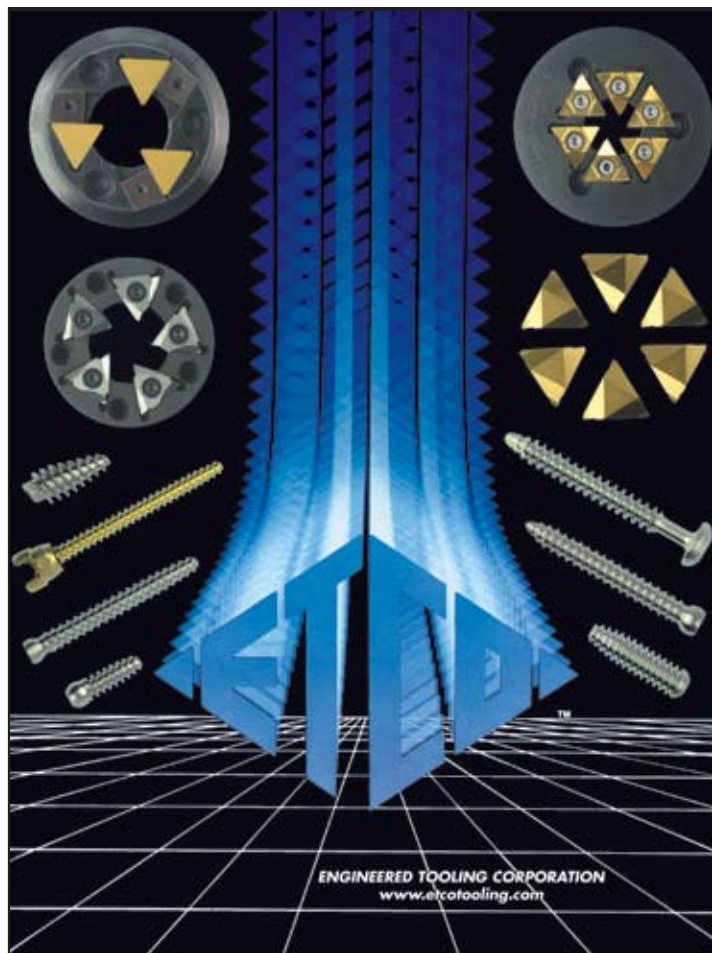
## I was talking to my friend Tony,

who is my favorite Starbucks barista. Like many Starbucks coffee crushers, he aspires to do other things with his life. A few times a year he takes off with his rock band and goes on tour. Tony is a talented drummer and he loves the music scene, but he also has a wife and baby, so the vagabond musician's life is not for him. His band is edging into popularity, so he has frequent weekend gigs at Chicago clubs. He just returned from the band's most successful tour— to Western Canada and California. He said he made enough money to pay off all his bills and put some dough away. As we talked, he told me about the economics of the rock band world.

Unless you are huge, you do not make money from selling your recordings, he told me. Records do get you recognition so you can play live. But clubs and the tour venues also pay artists poorly. Virtually all the real income for musicians like Tony comes from selling merchandise, mostly at concerts and clubs.

It's a rather strange business model, but not that different from movie theatres that make their gravy on popcorn and Raisinettes. Talking to Tony the drummer reinforced the power of branding for me.

On a branded product made in China, the cost of manufacturing is usually under 20 percent of the selling price in



## ENGINEERED TOOLING CORPORATION

TELEPHONE - 781-788-8888

WEBSITE: [www.etcotooling.com](http://www.etcotooling.com)

FACSIMILE - 781-736-1987

E-MAIL: [info@etcotooling.com](mailto:info@etcotooling.com)

### COMPLETE LINE OF INDEXABLE THREAD WHIRLING TOOLS AND INSERTS

- FOR ALL CNC SWISS MACHINES
- ALL INDEXABLE WHIRLING BODIES AND INSERTS
- ALL THREAD FORMS AVAILABLE IN FULL FORM AND PARTIAL FORM
- SPECIALIZING IN ALL BONE SCREW FORMS

GIVE US A WHIRL AND CALL ETCO FOR ALL OF YOUR  
THREAD WHIRLING AND THREADING NEEDS



**ENGINEERED TOOLING CORP.**

57 Grant St., Waltham, MA 02451

781/788-8888

Fax: 781/736-1987

[www.etcotooling.com](http://www.etcotooling.com)

the American market. The real money is made by capitalizing on the name and controlling the distribution. When Tony's band is on tour selling tee shirts, they are making virtually 100 percent profit on the stuff they sell, and probably saving only a small morsel for the IRS. Which brings me to the contract machining business, where many of us live.

Sam's Unknown Job Shop in Hoboken with no brand traction and with distribution controlled exclusively by his customers is in a lousy position in the global economy. Sam's is now often competing directly with a Chinese job shop with \$10 a day employees and no OSHA or EPA.

Sam's big problem is that he has no market for tee shirts and coffee cups because Sam's Unknown Job Shop of Hoboken has virtually zero name recognition. For Sam to succeed he has to be incredibly efficient and clever and develop a cadre of loyal customers who see value in their relationship with loveable Sam. It can be done, and it is done every day by thousands of skillful machine guys. But realistically, without brand and some control over distribution, it is an uphill fight every day.

The branding hurdles are difficult for a job shop, but not impossible. I think the key is to identify an audience or market and then aggressively build brand recognition within that small segment. I can imagine building a successful brand with five significant customers by frequent touches through

a variety of channels. You can build recognition through letters and videos and talks with the buyer, the engineers, and the marketing folks, all in the same firm. If you cannot unlock the code for differentiating your company, you will be doomed to quoting 100 jobs to get one, and then wondering what you missed in the print to land that one.

For Sam's Unknown Job Shop in Hoboken, the secret sauce will be different than the secret sauce of Joe in Joplin. But in the global marketplace of instant communication, we can all learn from my friend Tony the drummer. Build a name and sell those tee shirts.

---

## Noah Graff wrote this recently

on *TMW's* blog ([swarfblog.com](http://swarfblog.com)) which garnered a lot of conversation and comments.

Zhang Shuhong, owner of the Lee Der Industrial Company, responsible for supplying toys with toxic lead paint to Mattel, committed suicide. Would this scenario have occurred in the United States? And, what does this mean for American manufacturing?

Was it a customary Asian act of shame, was it guilt, or was it out of fear of the totalitarian Chinese government?

# EXCITEMENT:

best enjoyed at places other than **your orders**



29.25 yrs experience per salesman  
126,526 item numbers

IN STOCK Thread Rolling attachments  
- 37 Winter heads  
- 24 Reed heads  
- 28 Salvo heads

**800.328.6424**

[www.detroitautomatic.com](http://www.detroitautomatic.com)

# swarf

My guess is he was scared of a totalitarian government which wants to strangle him now for tainting one of its most important product sectors. According to the *New York Times*, 80 percent of the world's toys are manufactured in China. Certainly, Zhang Shuhong was going to be held accountable for his actions. He had strong reason to fear the wrath of the Chinese government, which in May had sentenced to death Zheng Xiaoyu, the former head of the Chinese State Food and Drug Administration. He was a scapegoat for the recent pet food scandal, which killed scores of American cats and dogs.

What does this event mean for Americans and American manufacturing? I suppose it's a positive sign. The Chinese are, without a doubt, taking responsibility for their actions. The capitalist world market is exerting its muscle and forcing quality control. The excuse that companies like Lee Der Industrial Company use, stating they have to "cut corners to make their margins" isn't going to fly with American companies, which will be crucified for "little

negligences" like lead paint. I doubt that the Chinese government will raise its standards for moral reasons. It's poisoning its people as we speak, with awful environmental practices contaminating the country's air and water. But hopefully the world can now expect safer Chinese products, and perhaps Chinese companies' costs of production will have slightly less advantage over manufacturers in the United States.

## When I look at the last 10 years

and ask myself what the one overarching political and economic story is, the clear answer to me is not global warming or the rise of radical Muslim terrorism. It is the incredible economic growth of China.

Think of China as a gigantic corporation and imagine 10 to 12 percent expansion compounded annually on an astoundingly huge base. This is growth on such a phenomenal scale that it has quickly changed almost everything in the economic and political scheme of things.

For several decades we lived in the world of falling prices for commodities. I scoffed at the cassettes, who saw a world of zero sums and impending scarcity, because modern

# the #1 biggest difference between us and

# ebay?

www.

DATS

answer:

You list for free

STUFF.com

[www.datsstuff.com](http://www.datsstuff.com)

history told me that brain power always finds a way around temporary shortages. I still see a world of potential plenty, but the rise of China's economy and lifestyle is putting at least a temporary crimp in the growth with abundance theory.

There is no precedent that I am aware of for an economy of China's magnitude to grow so fast for 10 years with no visible brake in sight. Some people have theorized that an epidemic like SARS or Avian flu or even AIDS would hit the country and blunt the expansion, but this has not occurred and may not.

Some people felt political ferment represented by Tiananmen Square would sweep the country and send chaos from Hong Kong to Taipei, but the Chinese are building democracy locally and not showing enormous interest in political change on a grand scale when there is so much wealth to be grabbed.

Corruption is insidious and corrosive, but it has not been demoralizing enough to derail the train of growth.

I think we must understand that China has been so poor, so miserable, so Minged and Maoed for so long that the monumental act of unleashing economic opportunity has given hope to billions of Chinese people who have a mass energy and group intelligence our planet has never seen before.

Will this century be the Chinese century? It looks like it today, but this is 2007 and China has yet to win a gold medal in basketball at the Olympics.

Don't laugh. The Beijing Games will be the big story of 2008 – way bigger than Barack vs. Hillary for the Presidential acclamation vote. The Olympics will be China telling the world, "we're number one, we're number one," while America is overtaxing itself in Iraq's quagmire.

Growth never continues straight up, forever. China will have its bubbles and hiccups. Its leaders will overreach or the people may choke on their coal dust, or the single kids might become so Westernized that there will be an epidemic of Gameboy thumb and child obesity.

And this will be the next big story. How will China adjust when the growth finally cools? Will this be the signal for political turmoil or the result of it? Will the pollution spark a rebellion in a population enfeebled by black rivers and charcoal air.

China is everybody's favorite story today. Like it, hate it, getting rich there or getting murdered there, it is the new center of the economic universe.

To an uncomfortable degree, China already controls America because the Chinese have so many dollars to

invest. Heaven help us if they stop buying Treasuries. But we control them too, because if we stop buying Mattel toys because of the lead paint on them or bad pet food, or tainted counterfeit toothpaste because the country has no viable regulation, today's China will start to feel the pain.

The American-Chinese political, economic relationship is evolving before our eyes. It is the big, big, big story of a lifetime and I can't take my eyes off of it.

---

## One of the hardest decisions

for any economically sensitive person to make is whether to be a follower or a contrarian. The smart follower sees a trend and rides it for gain. But eventually every trend ebbs, and sometimes crashes and burns – witness the residential housing meltdown.

The contrarian is always looking for what is out of favor so he can get in on the cheap. This approach requires unshakable confidence and an impervious attitude towards ridicule. Corn farmers are classic contrarians because the price of corn has been stuck for years. Finally this year they have been rewarded nicely. Could it be that the hearty contrarians in America who have invested in screw machine technology as so much work has leaped to China will be similarly rewarded?

---

## The story of the Williams family

business in one of the most inspiring sports success stories of the past 50 years. The Williams family I'm referring to is father Richard, mother Oracene and daughters Venus and Serena, who have won 13 Grand Slam titles between them.

Richard Williams, son of Louisiana sharecroppers, was no tennis player, but he had a dream for his two daughters with wife Oracene. He was going to make them into world championship tennis players. Think of the absolutely total lunacy of this proposition. Williams is a poor black man, living in Compton, California, soon after the L.A. race riots, with a blended family of kids who did not even play tennis. He concocts a scheme to turn his baby daughters into tennis prodigies, then devotes his life to making this fantasy actually happen on the crumbly Compton courts.

Imagine the whole family heading out to the courts and feeding balls to Venus and Serena. The girls took to the game and bought into the Richard Williams' mythology that they could win Wimbledon if they practiced like maniacs and believed in their father's madness. Venus started to attract local attention by the time she was nine years old. Serena, who is 15 months younger, idolized her older sister, and practiced just as hard. Reebok heard about the family Williams and took a look. Promoter and father, Richard, then parlayed Reebok's interest into a long-term endorsement deal that enabled the family to move to Florida where Venus and Serena could get the coaching of one of the best development coaches in the world, Rick Macci.

Richard Williams was smart enough to keep the girls off of the Juniors circuit. In doing this, he developed a mystique about the poor little black girls who were going to change the elitist, clubby world of tennis. He gave the press and the sports' Brahmins a glimpse of Venus and younger sister Serena to tease them about their potential, but he was not going to do to them what Jennifer Capriati's parents had done to their daughter; throw her on to the Women's Tour at 14 years old.

I had a chance to see a little bit of Venus and Serena at Grenelefe, a tennis resort in central Florida where Macci coached them and the family lived.

I took my whole family there for a tennis vacation, knowing the Williams sisters were training there. I was hoping that my children would pick up the tennis bug. We had gone to Wimbledon the year before. It worked to some degree. Two out of three kids still enjoy playing.

At Grenelefe they had a chance to socialize with two of the half-sisters of Venus and Serena. Those girls were not thrilled about living in central Florida, which they saw as a redneck outpost, but they were making the best of it for the economic betterment of the family.

The fairy tale that Richard Williams had envisioned was soon to unfold. Venus made her pro debut at 17 and was soon the best player in the world. Her big serve and fluid movement overpowered the reigning queen, Martina Hingis, who did not have the athleticism to beat her. Serena, who had been in the shadow of her big sister growing up, developed a huge, muscular game that quickly vaulted her to the top.

The sisters have continued to dominate the women's game when they have been healthy and totally interested. Richard and Oracene are divorced now, and the sisters have moved some distance from their father's sometimes weird and goofy antics. But to me, the story of the multi-millionaire

daughters of crazy Richard Williams of Compton, who once had a bizarre dream and made it come alive, is one of the great family business sagas I've witnessed.

## Sharpening Tools

The news from Hydromat in St. Louis is heartening. After slow business forced necessary cutbacks and payroll paring, a huge reversal in fortune in the second quarter put Bruno Schmitter in a good mood. The clients who have sustained the company for the last 20 years are starting to be augmented by a new set of high production players, particularly in automotive-land.

**I had a long talk with Steve Birman of High Tech Research in Chicago, who has developed a dynamic parts measuring and tool wear monitoring software package for precision parts manufacturers called MICRONITE. He has been working on this for 18 years and written a Great Books worth of code. His current masterpiece is being used by several automotive vendors. Systems like Birman's take the operator skills out of part making for a less labor-dependent shop floor.**

CNC Software Inc., manufacturer of Mastercam CAD/CAM software, has announced the 2007 "Innovator of the Future" (IOF) national competition. The competition entices students to try a real-world manufacturing challenge.

Boyd Coddington of the TLC show *American Hot Rod* is the celebrity judge again this year. According to Mastercam, Boyd was so impressed by the caliber of parts entered into the first contest, he was eager to do it again.

This year's challenge is to design and machine a 1/2-scale steering wheel. The part must be programmed with Mastercam software, can be made of any material appropriate for an actual steering wheel, and the entrant must tell a "story" about making the part. For specifics and specs, please go to Mastercam's website - [www.mastercamiof.com](http://www.mastercamiof.com).

The student who designs the winning entry will be awarded a \$1,000 scholarship to the school of their choice. The winner and their Mastercam course instructor will receive an expense-paid trip to California to meet Boyd Coddington and tour his shop. All entries, along with completed forms, must be postmarked by December 31, 2007.

By JERRY LEVINE

## Are We Rome?

I worry a lot about our country. I worry about the rise of China. I worry about militant Islam. I worry about immigration. I worry about the competency and values of our young people, and also about the competency and values of our political leaders. People tell me it's a normal part of aging – irrational thinking. But whether I am getting old or not, there is a legitimate philosophical question: Are we Rome? Are we destined to decline and fall?

I latched onto Cullen Murphy's book, *Are We Rome?* which examines that question and answers with an emphatic, No!

Murphy asks what is an empire, and are we one? He quotes several "triumphalists" and "declinists" who point out the good and bad of our present situation. He quotes Niall Ferguson, who argues that the world needs a liberal empire and the U.S. is the best candidate. But America is an empire in denial, lacking the will and staying power to shoulder an imperial role.

Murphy sets up a crude ledger of comparisons. Rome and America are the most powerful actors in their worlds, both militarily and with language, culture commerce, technology and ideas. They both created global administrative, economic, military and cultural structures that the rest of the world takes for granted.

Both societies are made up of many peoples, are open to newcomers, and are willing to intermarry and grant citizenship. Both see themselves as a chosen people and their national character as exceptional. Both endure periods of catastrophic leadership, and see the future in terms of Manifest Destiny.

But, Rome in 1000 years never left the Iron Age. Romans never traveled faster than on horseback. In 200 years we have seen the Industrial, Information and now the Biotech Ages. We've been to the moon and back. Rome had no middle class, thousands of slaves, and patricians who relied heavily on inherited wealth. Our strength is our middle class, entrepreneurship, free markets, rule of law, and our ability to move up economically and socially.

Rome came to an arbitrarily designated end on September

A.D. 4,476. But it didn't really die – it was too big. It dissolved unevenly, first in remote provinces like Britain, and then over the next 250 years in areas swept up by Islam.

Some pieces were carried forward in the Church and in popular customs. Life was what it had been with a series of adaptations.

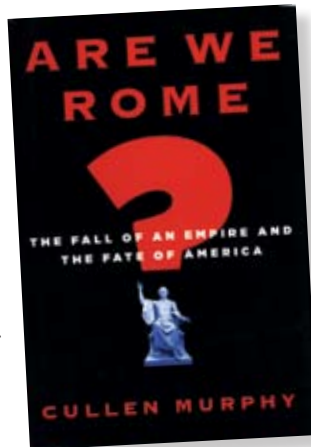
In the book's epilogue Murphy again asks, "Are we Rome?" He answers, "In a thousand specific ways, no. In a handful of important ways, certainly yes." As peoples, we and the Romans cherish different values, but both have certain dangerous traits – among them an arrogance that can lead to being blindsided.

Murphy finds his solution in the words of Roman Historian Livy, "What makes a society strong is the well being of its people – basic justice and opportunity, and the conviction that the system is set up to provide it."

The book closes with Murphy's 100-Year Plan:

1. Instill an appreciation of the wider world.
2. Stop treating government as a necessary evil. Rely on the big things it can do well.
3. Fortify institutions that promote assimilation.
4. Take some weight off the military. Adopt a long range energy policy that weans us from the Middle East and our need to defend the world's oil supply and shipping lanes.

We worry that we will eventually decline and fall. But we are constant striving to make life better for ourselves, our children and others. This is a large part of our social contract. Murphy concludes, "Are we Rome? In some ways we might be, and we're making some of the same mistakes. But, the antidote is everywhere. The antidote is being American."



Comments? You can email Jerry at [jerroldlevine@yahoo.com](mailto:jerroldlevine@yahoo.com)

# WORLD-CLASS PERFORMANCE



**\$71,900**

# AFFORDABLY PRICED

- Features:**
- 10,000 RPM Spindle (Oil Cooled)
  - 25HP (MTDR) 30 minute
  - 20 HP (Continuous)
  - X Axis 40"
  - Y Axis 20.5"
  - Z Axis 20"
  - CAT-40 Tooling
  - 24 Tool double arm tool changer
  - 1.9 Second tool to tool
  - 1417 IPM rapid rate X & Y axis
  - 1102 IPM rapid rate Z axis
  - Chip auger with bucket
  - Fanuc Oi-MC Control
  - 8.4" Color LCD
  - MPG Manual pulse generator
  - Manual guide Oi
  - 2 Year control warranty
  - 13,860 lbs Machine weight

**Contact us at 888-424-6224 or [info@gbincincinnati.com](mailto:info@gbincincinnati.com)**



## Hi-LIGHT

At EMO in Hanover, Germany, DMG will present 14 new machines and a new machine design that demonstrates the powerful interaction of style, ergonomics and functionality. Aside from the high-grade surface material in matte white or high-gloss black, the DMG

LIGHTline® spans the lateral door area and the entire height of the respective machine, and visualizes the operating condition of the machine with diverse colors rather than with the traditional signal light. All machines in the "New Design" generation have 4080 percent larger transparency of the safety glass panels.

A further notable highlight in the framework is the new ERGOline® control that has a 19" screen that resembles a flat screen rather than a machine control. The ERGOline® control can be positioned either on the left side or on the right side of the workroom with the help of a cantilever. DMG has replaced the old key cabinet with a DMG SMARTkey® system. The personalized authorization of the operator, together with the corresponding access rights or the individualized preparation of the control, are some examples the system's capabilities.

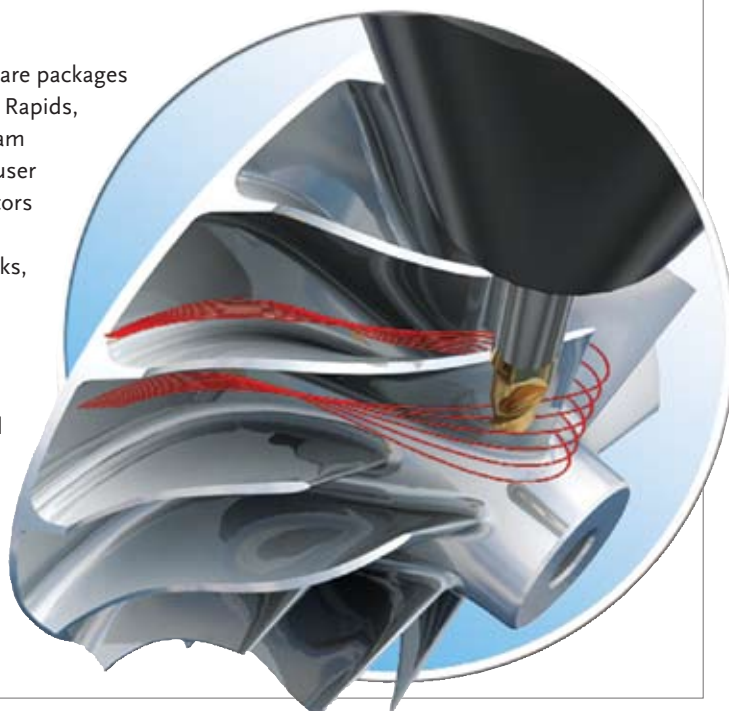
For more information, please contact DMG America at 847-781-0277 or visit the company website at [www.dmgamerica.com](http://www.dmgamerica.com).

## Feature the Power

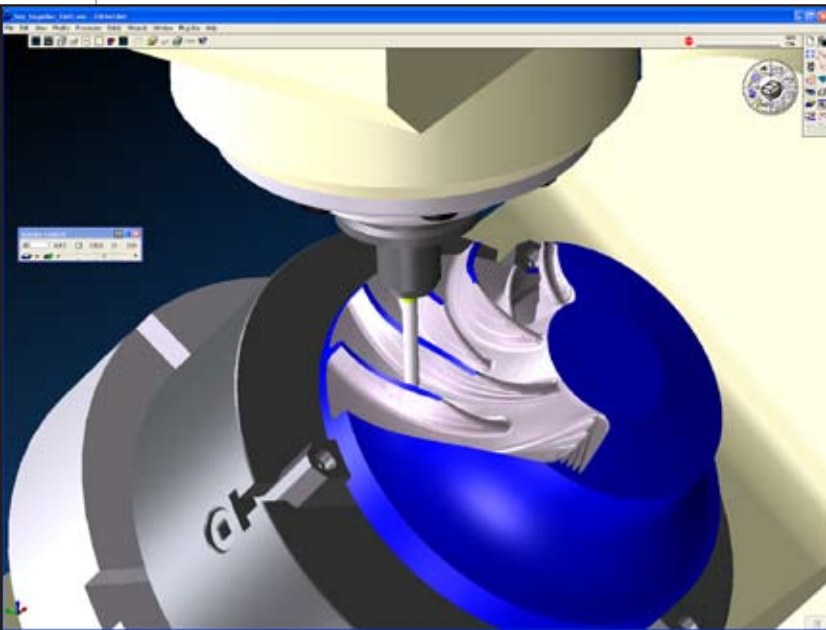
Delcam will demonstrate the latest versions of its milling software packages PowerMILL and FeatureCAM at the Great Lakes show in Grand Rapids, Mich., September 18-20, Booth #613-632. New options in Delcam PowerMILL include a tool-axis editing function that allows the user to select any region of a toolpath and redefine the tool-axis vectors within that region. New automated functionality has also been added for faster programming of the five-axis machining of blisks, blades and impellers.

Five-axis simultaneous milling capability is now available in Delcam FeatureCAM, offering a variety of methods for controlling the tool axis. The user will be able to set a specific lead and/or lean angle. This can be done either to access areas unable to be reached with three-axis machining or to give better cutting conditions. FeatureCAM 2008 also features new and updated post-processors, in particular for turn-mill equipment including the Mazak Integrex, Daewoo Puma and Nakamura-Tome machines.

For more information, please contact Mary Shaw [mes@dclcam.com](mailto:mes@dclcam.com)



# fresh stuff



## Cinco de CAMO

Gibbs and Associates announced that a new GibbsCAM option, which supports 5-axis simultaneous milling, will be demonstrated at EMO 2007. Special promotional pricing for the GibbsCAM 5-Axis bundle will be announced at EMO. The new 5-Axis option introduces multi-surface 5-axis roughing and finishing; multi-surface 5-axis flowline machining; surface edge 5-axis swarf cutting; adaptable interface, based on part type strategy, show only what is needed; advanced gouge protection ensures safe cuts in even the most complex operations; complete control over entry/exit, cut-to-cut, and between cut moves. The 5-Axis option is fully integrated with GibbsCAM's Machine Simulation option allowing the user to virtually set-up and prove-out complex 5-axis programs off of the machine tool. The 5-Axis option is also supported by GibbsCAM's integration with CGTech's VERICUT machine simulation application.

Information about GibbsCAM is also available at the company's website, [www.GibbsCAM.com](http://www.GibbsCAM.com).

## Vertical Challenge

Toyoda Machinery will introduce its newest machine line at CMTS (Canadian Manufacturing Technology Show) October 15-18 in Booth #3600. Toyoda's new Inverted Vertical Turning Centers feature a traveling inverted spindle, allowing for direct part pick up. A mono-block polymerized concrete-filled, steel fabrication base delivers maximum vibration dampening and rigidity. Toyoda's horizontal SX Series has a 40 horsepower, 6,000 rpm spindle. The new machines are available with 550 mm or 630 mm pallet sizes. The table load capacity is 2,860 lbs.

The BM-1200 vertical machining center offers performance for heavy-duty machining of ferrous materials. The rigid iron base is paired with four Y-axis box guideways to eliminate saddle overhang while the extra-wide column expands machining capability. Many high-torque and direct-drive spindle configurations are available in CAT 40 or CAT 50 tapers.

For more information call 847-253-0340 or visit [www.toyoda.com](http://www.toyoda.com).



fresh stuff

# fresh stuff



## OmniTurn - Engineered to Order

.00005" resolution, .0001" accuracy  
*Made in America - Quick deliveries*

Don't settle for an import's "1 size fits all" stock machine. Compete with a machine fine tuned to your specific needs

OmniTurn offers over 50 interchangeable options.

If we don't have what you need we will build it quickly here in America.

- |                            |                      |
|----------------------------|----------------------|
| Vertical cut off           | Parts conveyors      |
| Through spindle coolant    | Chip conveyors       |
| Spindle brake              | Drill load sensor    |
| 1 or 3 phase operation     | Direct PLC interface |
| Automation                 | High flow coolant    |
| Live tooling               | Parts catchers       |
| Tool checkers              | Tailstock            |
| Short cycle drives         | Network interface    |
| Low pressure collet closer | Air Blasts           |



**C axis \$39,970**



*Time Studies - Tooling Layouts - Methodizing - Test Cutting  
Training - Service - Support - Spare Parts - Tooling*

**(631) 694-9400    www.omni-turn.com    sales@omni-turn.com**

## Mini Maxi

Intertech Worldwide Corporation has announced the new MiniMAX 3, 4 or 5-Axis vertical machining centers to offering a working cube of 17.7" (X) x 13.7" (Y) and a standard table size of 21.6 x 11.8". The MiniMAX has a machine base of massive cast-iron construction with full splash safety guarding. The standard spindle is a BT 30 (BT40 optional) supplied with an umbrella style utilizing a 10 tool ATC featuring 6 sec. change speed. Standard spindle speed is 12,000 rpm, (24,000 optional) driven by a 7.5 hp servomotor with direct-coupled servomotors for control of axis movements. Distance of spindle nose to table surface: 3.94" to 17.71".

The PC Control has a 10½" flat color monitor capable of 6-axis simultaneous interpolation. The programs are compatible with Fanuc and other programs using standard "G" codes and "M" functions.

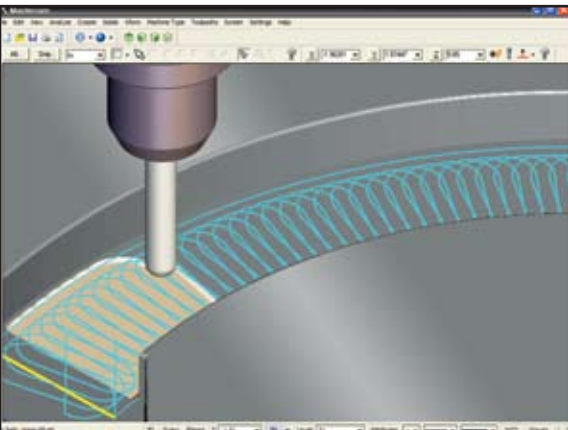
For more information, please contact Intertech Worldwide Corp. at 561-395-5441 or visit [www.intertechworldwide.com](http://www.intertechworldwide.com).

# fresh stuff

## Master X

Mastercam X2 Mill has introduced new capabilities, including: radial and spiral finishing toolpath styles rounding out the high speed suite; rest material functionality has been added to high speed finishing toolpaths; rib cuts have been added to the surface finish flowline, surface rough flowline, and 5-Axis flowline toolpaths. The rib cuts are determined by a number of slice cuts perpendicular to the flowline curves of the surface. When you choose the cut direction, the software will slice the flowline curves and create a toolpath at the midpoints of each slice. "Peel Milling" delivers powerful high speed cutting to 2D projects, moving the tool in and "peeling" away material, layer by layer. A scallop height calculator has been added.

For more information, contact CNC Software, Inc.,  
800-228-2877 or visit [www.mastercam.com](http://www.mastercam.com).



On intricate precision parts...

## SLASH CYCLE TIMES!



**More tools in the cut  
dramatically reduces cycle times**

Maier ML-ProLine Series Swiss-style CNC lathes are designed for 2, 3, or 4 tools in the cut at once. In fact, the ProLine F Series is the only CNC sliding headstock automatic capable of machining with 4 tools simultaneously.

**Power and flexibility for more  
productive machining strategies**

Combining unmatched power and flexibility, Maier lathes let you exploit innovative machining strategies to dramatically reduce cycle times — without sacrificing accuracy.

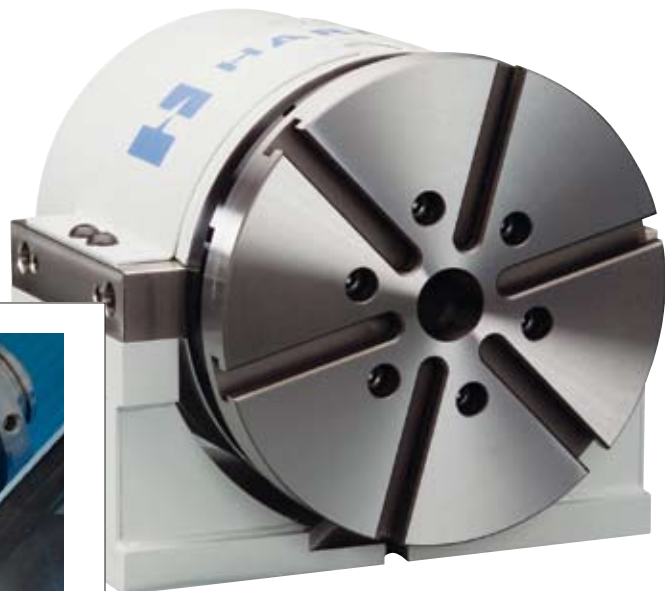
- Linear motor speed and precision
- 7.5 HP main and subspindles
- 2 HP mill/drill motors
- Machining in up to 15 axes
- Angle drilling with standard mill/drill head
- Up to 38 total / 32 driven tools
- Up to 4 tools in the cut at once
- Powerful FANUC controls

TEL: (978) 443-5388 | [sales@methodsmachine.com](mailto:sales@methodsmachine.com)  
FAX: (978) 440-9405 | [www.methodsmachine.com/62](http://www.methodsmachine.com/62)

Boston | Charlotte | Chicago | Denver  
Detroit | Los Angeles | Phoenix

**Methods  
Machine  
Tools Inc**

# fresh stuff



## Directly Related

Hardinge has added the DD200 high-speed gearless rotary unit to their family of Direct-Drive Rotary Systems. The design eliminates backlash, providing high servo stiffness and rapid and accurate bidirectional response with repeatability of  $\pm 2$  arc/sec. Benefits include: up to 2,100 degrees-per-second indexing speed; wraparound torque motor for a smaller foot print; design manages heat dissipation and maintains stability of the center line of the spindle; 4th-axis integration supported by Fanuc and Heidenhain allows operators to take advantage of maximum machine capability; semi 4th-axis operation using Hardinge's standalone Servo Control for use on CNC machines that can't support "pole position detect"; and a flexible collet-ready spindle that allows quick changeover from collets, expanding collets, step chucks, power chucks and face plates without an adapter. The Hardinge DD200 incorporates a direct-drive, rare-earth, permanent-magnet torque motor. A high resolution  $\pm .077$  arc/sec encoder is mounted directly to the spindle enabling  $\pm 3$  arc/sec system accuracy.

For more information call 800-510-3161 or visit [www.hardinge.com](http://www.hardinge.com).

# SPEED IS MONEY

*Upgrade your machines to flexible multi-purpose machining centers.*

## ASTRO SERIES AIR

• Air Motor/Spindle (Integrated)  
**1,500~160,000rpm**



## ASTRO SYSTEM AIR

• Air Motor+Spindle  
**2,000~58,000rpm**



## ASTRO-E ELECTRIC

• Electric Motor+Spindle  
**2,000~80,000rpm**



# NSK AMERICA

NSK AMERICA CORP. : 700 B Cooper Ct, Schaumburg, IL 60173

TEL: 800-585-4675 FAX: 800-838-9328

[www.nskamericacorp.com](http://www.nskamericacorp.com) e-mail: [info@nskamericacorp.com](mailto:info@nskamericacorp.com) Manufactured by NSK Nakanishi Inc.

# fresh stuff

## Analyze This (right)

Thermo Fisher Scientific Inc. has announced the NITON XL3 800 Series, providing alloy grade identification, on average, in less than two seconds. The NITON XL3 Series include increased testing speed enabling the user to increase sorting volume as much as tenfold; a 75 percent reduction in measurement times for difficult to separate alloys such as SS304/321 and Pg/Pg1; fast verification of incoming materials to perform final QC and to document the material composition of finished product.

The NITON XL3 Series incorporates 80 MHz real-time digital signal processing and dual state-of-the-art embedded processors for computation, data storage, communication and other functions. The x-ray tube-excited XL3t 800 features a 50 kV, 2 watt miniaturized X-ray tube with multiple multi-layer primary filters. The XL3t can also be equipped with small-spot sample analysis allowing users to switch between full area analysis for large samples and a 3 mm small-spot to analyze small sample areas.

For more information, contact Thermo Scientific NITON Analyzers at 800 875-1578 or visit [www.thermo.com/niton](http://www.thermo.com/niton)



## SOUTHWICK & MEISTER, INC.

OVER HALF A CENTURY SERVICING THE SWISS-AUTOMATIC INDUSTRY

Specializing in the manufacturing of

**COLLETS, CARBIDE GUIDE BUSHINGS, BARLOADER COLLETS & ALLIED TOOLING**

for all

### **SWISS TYPE AUTOMATICS**



BARLOADER COLLET

HEADSTOCK COLLET

GUIDE BUSHING

PICKOFF COLLET

We still have a number of customers that we started with in 1952.

We feel this is a positive reflection on our engineering service, consistent quality and timely deliveries that we have provided over the years.

### **ALLIED TOOLING** INCLUDING PRECISION 5-C AND 16-C COLLETS

MPC collets and holders (ER style), ISCAR insert tooling, brazed tool bits, knurling tool holders, cam blanks, pushrods, flags and replaceable tips, ESCO collets, bushings, wire guides, feed roll sets and tool bit blanks.

**Meriden, Connecticut 06450-0725**

**Phone: (203) 237-0000 • Fax: (203) 634-4509 • [www.s-mcollets.com](http://www.s-mcollets.com)**

# fresh stuff



## Logical Control

The new KurtUSB MLX (Multifunctional LVDT eXtra) modular building block processes input from various electrical signals with high speed and accuracy and can provide programmable responses for automatic operation. The KurtUSB MLX module has a powerful CPU that processes electrical signals; signals from different types of sensors can be processed by software allowing the MLX to be configured to work with several different types of devices. With internal programmable logic controller (PLC), the MLX can be programmed to inputs and can control complex automated equipment through discrete outputs, stepper motors, analog outputs, or remote DeviceNet devices.

Kurt's new 5-axis clamping system now makes possible continuous 5-axis cutting motion of complex pockets, Sculptured and contoured surfaces and intricate 3-D features.

For more information, see Kurt Workholding at the Quality Expo Sept. 25-27, Rosemont, Illinois. Call 877-226-7823 or visit [www.kurt.com](http://www.kurt.com).

## By a Thread

Emuge Corporation has introduced a new series of Miniature Solid Carbide Thread Mills designed for machining of difficult materials such as stainless steels, titanium, K-monel, hastelloy, and inconel. The new thread mills eliminate the possibility and consequences of tap breakage. Thread mills are available in both 1 flute and 3 flute versions. The new thread mills eliminate the need for hand tapping during full bottom threading applications. Bottom threading can be performed to within 1 pitch. The miniature thread mills function with externally supplied coolant and eliminate the need for thread cutting oil.

The New Miniature Solid Carbide Thread Mills offer precise thread depth controls, up to 2xD, so that one tool can be used for both through and blind holes. STI threads can be easily produced and the new Emuge Miniature Solid Carbide Thread Mills produce thread finish and gauging. Overall length of the thread mill is 1 5/8" (41mm) with a shank diameter of 1/8" (3.175mm). The line includes thread sizes of #0-80, #2-56, #4-40, #5-40, #6-32 and #8-32 and cutting diameters from 0.045" (1.143mm) – 0.124" (3.15mm). Thread length ranges from 0.125" (3.175mm) – 0.328" (8.33mm).

For more information, contact Emuge 800-323-3013 or visit the company website at [www.emuge.com](http://www.emuge.com)



# New HANWHA XD32H

*(Strength + Affordability) × Flexibility  
= Profits. ✓*



Description	Specification
Type	Fanuc 18iTB
Axes control	7Axes
Max. rpm	8,000/7,000rpm
Diameter	32
Stroke	320mm
O. D Tool	5
Front Tool	5
Back Tool(Driven)	4(2)
Off-Center(Driven)	2(2)
Cross Tool(Driven)	4(4)
Power	Main 5.5/7.5kW Sub 2.2/5.5kW
Weight	4,050kg
Dimension (LxWxH)	2,720 x 1,304 x 1,775mm



 **Hanwha Machinery**

[www.hanwhamachinery.com](http://www.hanwhamachinery.com)

phone : 262-373-1600 fax : 262-373-1111

N57 W13666 Reichert Ave., Menomonee Falls, WI 53051



Rex Magagnotti  
Sales

Lloyd Graff  
Owner

Jim Graff  
Owner

# Meet the Graff-Pinkert family

We provide the machines to make your precision parts.

Graff-Pinkert & Co., Inc.

4235 West 166th Street, Oak Forest, Illinois 60452 • 708-535-2200 • [www.graffpinkert.com](http://www.graffpinkert.com)



Martin Whitfield  
Wickman Service Engineer

Cathy Heller  
Wickman and Index  
Parts Manager

Manny Buenrostro  
Wickman Tooling and  
Attachment Specialist.

Greg Buenrostro  
Wickman Service Technician

Since 1941 your company's success has been our business.

With our worldwide contacts and over 60 years of machinery experience,  
we can find, set up and help you maintain the machine you need.

An Interview with

# Eitan Wertheimer

ISCAR'S CEO on Singing His Song

BY LLOYD & NOAH GRAFF



eitan wertheimer

Photo below (left) Berkshire Hathaway's Charles Munger, Eitan Wertheimer, Warren Buffet & Stef Wertheimer at ISCAR's headquarters, Sept. 2006  
 Photo (right) Aerial view of ISCAR headquarters, Tefen, Israel. Photos Courtesy of ISCAR, Ltd.



**Lloyd Graff:** I read your bio, and there isn't that much about you personally.

**Eitan Wertheimer:** ISCAR was started in 1951. I was born in '51. My father wanted to name the company after my name, but my mother told him, "Maybe it won't be successful, so don't do it." So he called it ISCAR, Israel Carbide.

**Lloyd:** Israel Carbide, ISCAR; the company has been synonymous with Israel for its whole history.

You were born four years after Israel was born. The company grew parallel to the state. What does selling out to Warren Buffet in 2006 mean in terms of Israel, or was it purely a business decision on your part?

**Eitan:** It wasn't selling out. It was a basic idea of becoming part of something bigger, and happily that opportunity opened up. We wanted to secure our customers and our people for yet again another 50 years or more.

**Lloyd:** What do you gain by being with Berkshire Hathaway?

**Eitan:** We didn't do it because we needed the money, or because we were unsuccessful. We just wanted to solve problems before we get to that years from now. Maybe I'll change my mind in 20 years, but we still have 20 years for that.

**Lloyd:** Does it bother you that Warren Buffett may not be here in a few years?

**Eitan:** We all are asking that question, but I hope that his legacy lives much longer after himself. I wish him all the best, and wish all of Berkshire Hathaway that the future will be as good as the beginning. The main question will be whether the past pattern of 40 years sticks for a longer time because we have a very strong culture in our organization and we like it.

**Lloyd:** I talked to a person who worked for ISCAR and he talked about going to Tefen (co. headquarters) and meeting with Jacob Harpaz (head of cutting tools). He said with Harpaz, he experienced the most inspiring sessions he ever had in his career. What impressed him was that Harpaz talked about the new product coming out, but then would say, "But after they challenge us on that product, we've got this product, and then after they challenge us on that product, we have this product to come in." Like he was thinking three products down the cycle. I wonder if you could



elaborate on that as it applies to the sale of the whole company.

**Eitan:** First of all, I can very objectively say that I think Harpaz's [department] is one of the best in our company. I've seen the results and I have a lot of admiration for Jacob. The other element is that our customers need something better every year. Every year they have to become more competitive, do something faster, more clever, less mistakes, less time, less rejects. We must improve ourselves continuously. Just having a single event of something good is not sufficient in any industry, for sure not in our industry; your magazine must be full of new things. Nobody would advertise inserts from 1964. I haven't seen anybody lately selling an IBM 286. It would be a very good price, but what the hell do you do with that thing. It wouldn't work anymore in our world. The new machines, the new materials, the fact that you do net shape and casting better, and the roughing brings different need for other tools, so you must think as a process, not only as single products. We're trying to be part of the book of industrialization in the metal world, and do it in clever industrial areas. Therefore we look for clever products, for productive, clever customers when looking for the next story. You see the revolution coming in countries not export-oriented; and you see the export-oriented countries, how eager they are to get down the road of efficiency, improvement and higher level of quality. You have to think as a continuous story. You're not impressive in a single time event.

**Lloyd:** Which is part of why you sold to Buffett?

**Eitan:** We sold to prepare ourselves for 15 years down the road. But at the same time, we want to sing our song. There's a song that says, "First, I sang for the song, and then I sang for the money and then I sang for the glory, but now I'm back singing for the song because I like to sing." So somebody does his thing, it is good; and we want to do our thing. We want to sing our song. That's all. Our song is customers and people and innovation and technology, and we love that world. To bring Warren Buffett to the world of manufacturing was a lot of fun for me. Usually attention goes to people on Wall Street with the glamour, titles, and newspaper stories, but somebody has to make the machine. Somebody has to make the machine tools for them. Somebody has to make the physical engines and wheels and bolts and nuts.

**Lloyd:** Did Buffet get it?

**Eitan:** Yeah, I took him to IMTS here in Chicago. I'm going to take him to more shows, because I think it's time that people respect the people who manufacture things. Listen, making clever machine parts is a good thing. I'm happy to help in that process because I come from that field. I think about people who make parts so people can [drive] a car, or keep their health, or get more home comfort, or wash their clothes, or get their glasses, or allow the newspapers to be at your table. You should not neglect the people that make things. So for us, doing this with Warren Buffett is a nice endorsement that our field is important; not more, not less than anybody else, but for sure not less.

**Lloyd:** If you were to describe your company –ISCAR– would it be a manufacturing company, a technology company or a marketing company?

**Eitan:** All the above. If you don't have two legs, hands, eyes and ears to listen, you're not a full body. You must be a full body. You must manufacture and be a very clever manufacturer. You must use the latest technology, and you must sell your stuff or it's going to sit in inventory and you won't be around after awhile. If we sell something we didn't make, we won't be successful. If we don't use technology to make new things, we will not be very interesting, and we want to be interesting.

**“Our song is customers and people and innovation and technology, and we love that world.”**

**Lloyd:** I saw that you are involved with this Clean Tech initiative in Israel and there was some talk about working with Mr. Agassi on battery-operated cars. Could you tell me something about this?

**Eitan:** Shai Agassi is the man running it and I'm just helping him a bit. It's his baby, which I think is clever and the right type of baby to get ourselves into – also to be part of clean energy, clean up our environment and be more efficient with our long-term needs.

**Lloyd:** You have had a long-term interest with antique cars in Tefen.

**Eitan:** I was fascinated by cars as a child, and still am. I



Photo (left) “GalGal,” Hebrew for “Ring and Wheel” sculpture, part of the sculpture garden at ISCAR’s Industrial Park, Tefen, Israel.

used to read every catalog I could get my hands on. In '76 I visited Detroit for the first time, and near the airport I saw a sign saying how many cars were sold. I was fascinated. Then I visited car factories. For many of us, it goes to our past, and our past is our cars; it's a perfect combination of technology and esthetics.

**Lloyd:** What do you drive?

**Eitan:** I have a Chrysler and a very old pickup. I have two museums of cars. My first car in America when I lived here in the early 80s was a 1970 Pontiac Catalina. I loved that thing.

**Lloyd:** It was like 90 feet long.

**Eitan:** It was a huge, huge thing. I used to fix it up. Me coming from a small country and having a big American car; I didn't need any more dreaming after that.

**Lloyd:** I understand you lived in New Jersey and later went to Harvard Business School.

**Eitan:** Much later. Then I worked for a while with the nephew of Albert Einstein.

**Lloyd:** So you worked in America and then went back to Israel?

**Eitan:** I worked at ISCAR as a kid, then I went out to do my thing. After coming back from the States, I did a lot of turnaround deals, but all in metal; clever products, clever materials, clever customers.

**Lloyd:** Are you trained as an engineer?

**Eitan:** I am learning. You can either learn some in school, or learn by doing. Driving, you learn in the streets, not in school, so I had little time in school and a lot of time on the streets. But my main specialty is finding people much better than me. I think I'm very lucky. From the age of three I had two of my father's *Popular Mechanics* magazines from World War II. My first technical education was from him and *Popular Mechanics*.

**Lloyd:** Do you see radical changes in the cutting tool field?

**Eitan:** It has several forces. It's materials that we will try to machine and the tools that we will use to machine them – fast or slowly. Then you have the issue of the machines, then the issue of the application. In the past we used to do rough machining and the whole form. Today it's about the finishing of things – we get away from grinding and try to turn it. A lot of applications I don't think are really solved yet. It still will take five to 10 more years to really understand how material behaves.

**Lloyd:** Do you think that the high price of nickel, which affects stainless steel, will push more people towards different kinds of materials?

**Eitan:** It depends. Certain places need certain material strengths and I think you can get some of it through the geometry, the material or a combination. I think a lot of industries are throwing a lot of material away and they want to be able to throw away less. In the aerospace business I see a high “buy to fly” ratio, which has a long way to go.

**Lloyd:** What do you mean “buy to fly”?

**Eitan:** You buy one pound of material. How many parts of the pound will fly? How much do you buy and how much will really be the end product.

**Lloyd:** We did a piece a few months ago after IMTS about the X1 Corporation process of printing metal parts using metal layering. This could have a big effect longer term on the cutting tool business and on the materials used. You don't think so?

**Eitan:** I doubt it, because I think the metal wants to be alloyed, to come together in certain processes. I think the (printing) process is very expensive, but it has a lot of flexibility from a geometrical point of view. For a short series it could work.

**Lloyd:** Talking about quality, I saw that you recently built a plant in China. Do you worry about losing control over your intellectual property?

**Eitan:** Look, worry is a part of life. I mean a lot of people overcome fears by inventing new fears. I'm not sure it solves anything. The only way we have a chance to be the best in intellectual property is to keep on inventing. We'll be copied, of course. So we have to live with that phenomenon, but sooner or later more countries will be part of the legal process that honors people's rights. It's a process. China is not yet there, but it will be one day. We may win sometimes; we may lose sometimes, but we're going to keep on developing. We are aware that today it's easier to be a copier because technology makes life easier. In the past it was much more difficult.

**LG:** But we also live in a dangerous world. In Israel a year ago bombs were dropping on you. What happened to the factory during the war?

**Eitan:** We sent half the people to Tel Aviv and kept on working. We didn't miss a single shipment or customer.

**NG:** But you moved half the people?

**Eitan:** First of all, we have a lot of automation. Second, other people just worked harder and they loved it because they wanted to show what we can be. The other element is that Israel is only one-third of our workforce. Most of the other people are in Korea, Rockford, Dallas, Brazil, China, Japan, Italy, France, and England. Of course, we knew something could happen one day. And I must tell you, in the war we lost two cars. On a normal day, somebody could have an accident and we might lose two cars. But everybody came home healthy. That's amazing.

**Lloyd:** Do you look at the Lebanon War as Round One?

**Eitan:** I don't know. I have no idea. I have no way to judge yes or no. But we do a lot of activity with Israeli Arabs. Our factory is a totally mixed factory. We have Jews, Christian Arabs, Muslim Arabs, Druze. For 50 years we have had wonderful relations. Industry and economy can be twofold peacemaking.

**Lloyd:** I wrote an article about the three "I's" of Israel, Ireland, and India – three economies booming amidst political craziness with wars.

**Eitan:** Tension brings creativity. It's unfortunate what

I'm saying, but that's life. I must say that you're 100 percent right.

**Lloyd:** Do you have investments in India?

**Eitan:** We have very big market share in India with a very nice factory in Bangalore growing leaps and bounds. We also have another partnership in Pune.

**Lloyd:** What has been the best part about your business relationship with your father?

**Eitan:** The main thing – respect. Each one of us is very independent. We had to work together, and we accepted each other's ways, and it worked fantastically. I've seen other places that somebody comes to look over your shoulder too many times – that's very difficult. The second element is you have to do it early. You don't start learning a business when you're 55. You have to start when you're willing to make mistakes, and you can accept them when you are still young.

**Lloyd:** Do you think the family model of business can still work?

**Eitan:** I've heard 84 percent of the businesses in the U.S. are family businesses. Everybody does it; it must be something not that bad.

**Lloyd:** Do you have children?

**Eitan:** I have 5 children. You don't teach your children driving or your wife to drive unless you want to wreck the family, so you have to keep rules. For children, don't give them too much sugar. You don't make their life too sweet. Teaching is good but not sugaring around. Sometimes that works. With my father I had a wonderful time, but I see many other guys where it didn't work.

I told my children, "Do exactly what you want." I prefer for them to be entrepreneurs, not to be guarding what father or grandfather did. I enjoyed like hell building what I built. I enjoyed doing turnarounds as a young man. Today I'm looking for the next adventure in the industry. I love industry. I love production. I like to work in the factory. I like the people. This is my life. I don't want to change it. Maybe somebody will say this is very stupid, but this is my life.



# the grass is greener on both sides



Precision Ground Qualities



Drawn Bar Prices



The precision tolerances and features of SMQ™ make it possible for you to take shipments from our warehouses straight to your most demanding jobs. And what's more, all of the precision ground qualities and conveniences of SMQ™ are available at economical drawn bar prices. To learn more details about the precision tolerances and features of SMQ™, call us **toll free at 877-844-6387** or visit [ugitechusa.com](http://ugitechusa.com).  
**You have nothing to lose and everything to gain.**

With **SMQ™** you're **Ready to Run!**

UGITECH USA

Providing special steel solutions



**SMQ™** IS MADE IN THE USA

An Interview with

# Carlos Cardoso

Kennametal's CEO on his vision and his life

BY LLOYD & NOAH GRAFF

**Lloyd Graff:** Kennametal was a global firm when you took over, but now you are making it more so. Can you describe your product development approach as it relates to your global plan?

**Carlos Cardoso:** When we do a product development, it's global. If you go into one of our review meetings for product development, you'll see somebody from India; from China, from Germany. They are on the phone working on the same CAD system, and then engineering is concurrent. So while the team here goes home at 4:00 or 5:00 p.m., there's somebody in India who can continue on with the project, somebody in China and so forth. We never sleep.

**LG:** That's pretty unique.

**CC:** This is why this company has become the performance company that we are; we have done some very unique things. We have concurrent engineering, one CAD system around the world, all in the same database.

**Noah Graff:** Somebody from Motorola told me their engineering branches in different countries don't

share their technology with each other, and basically they all develop their own phones independently. Is it like that here?

**CC:** No, and I believe that this is better for us. When we develop a tool, even if there are certain nuances for China, 80 to 90 percent of the tool is the same so we can produce that tool anywhere around the world for those markets. We had an instance here when we were developing a product. I went into one of the product reviews here, and they were having some engineering challenges. That evening I flew to Germany, then went to our R&D at 10:00 the next morning. There was a message for me there to see the engineer working on this product. He had already solved the problem. I slept all night on the plane, I got there and the problem was solved. That's the power of this thing.

Another important part of our strategy is global accounts. Think about Caterpillar – there's a Kennametal guy in Peoria who works with Caterpillar's manufacturing people to understand the Caterpillar strategy. One of the challenges with a lot of our big customers is they have the strategies of lean [manufacturing] and do all



carlos cardoso

this stuff with a single focus. Now, when you go to China, when you go south somewhere in the U.S., that plant says, “We’re going to do whatever we want.” So those customers are having their own challenges of getting their whole organization around the strategy. Now we have an engineer at that plant, so our guy can actually help our customers implement their strategy because we can give them the same solutions in Mexico or in China that we do in Peoria. If we sell that solution from the bottom up, those guys feel that they get a feather in their cap because they’re meeting the corporate goal, but it’s their solution in a way. So this global account is a tremendous value proposition for our customers. Caterpillar opened a plant in China – on their first day, we had a half dozen people there teaching their operators how to start up the shop.

**LG:** That’s a coup.

**CC:** This is how you focus on the customer versus just selling the product. If I’m selling you a product and that’s all I’m doing, I’m only as good as anybody else in the marketplace. If I’m making sure that you get up and running as fast you can, if I’m making sure that you’re making money as a result of being part of Kennametal, then I’m adding value. We are becoming a customer-focused company. One thing is saying it, the other thing is doing it; and I tell you, making this change is like being at the head of an aircraft carrier. Sometimes you turn the wheel and it takes awhile before that ship moves. It takes a lot of courage to take a company that is doing fairly well and is well recognized and say, “Oh my God, we’ve got to do a 90-degree turn here.” But that’s what we have to do, otherwise we’re going to be a “me-too.” We have to look at how great we’re doing today for 30 seconds – then we’ve got to spend the rest of the day thinking about how can we do better tomorrow, because the world changes fast.

**LG:** Talking about that, you’ve been growing internally and you’ve been growing with acquisitions. According to the business books, 80 percent of acquisitions fail. What’s been your experience with your acquisitions? How do you make them work?

**CC:** We have very clear strategies here. One of the things we have that is unique to this company is a documented management operating system. One part of it is M&A, mergers and acquisitions. People that do M&A for us need to be certified in their process. We have a

very disciplined process to make acquisitions. We look at about 120 companies per year. In the last 12 months, we bought five.

**LG:** Let me ask you about one – Manchester Tools.

**CC:** They were owned by Federal Signal. Manchester was part of a company that didn’t understand their business, so they were kind of on their own and their growth rates were not very high. It was a very decent company, but they couldn’t grow that much, and the resources were limited. We bought that company strategically. Manchester covers a niche product that Kennametal did not have. They have a very good cutoff line and grooving line, which Kennametal has kind of struggled with. But we now have Manchester Tool, and in the first 12 months we can take that whole line globally.

“We have to look at how great we’re doing today for 30 seconds – then think about how we can do better tomorrow.”

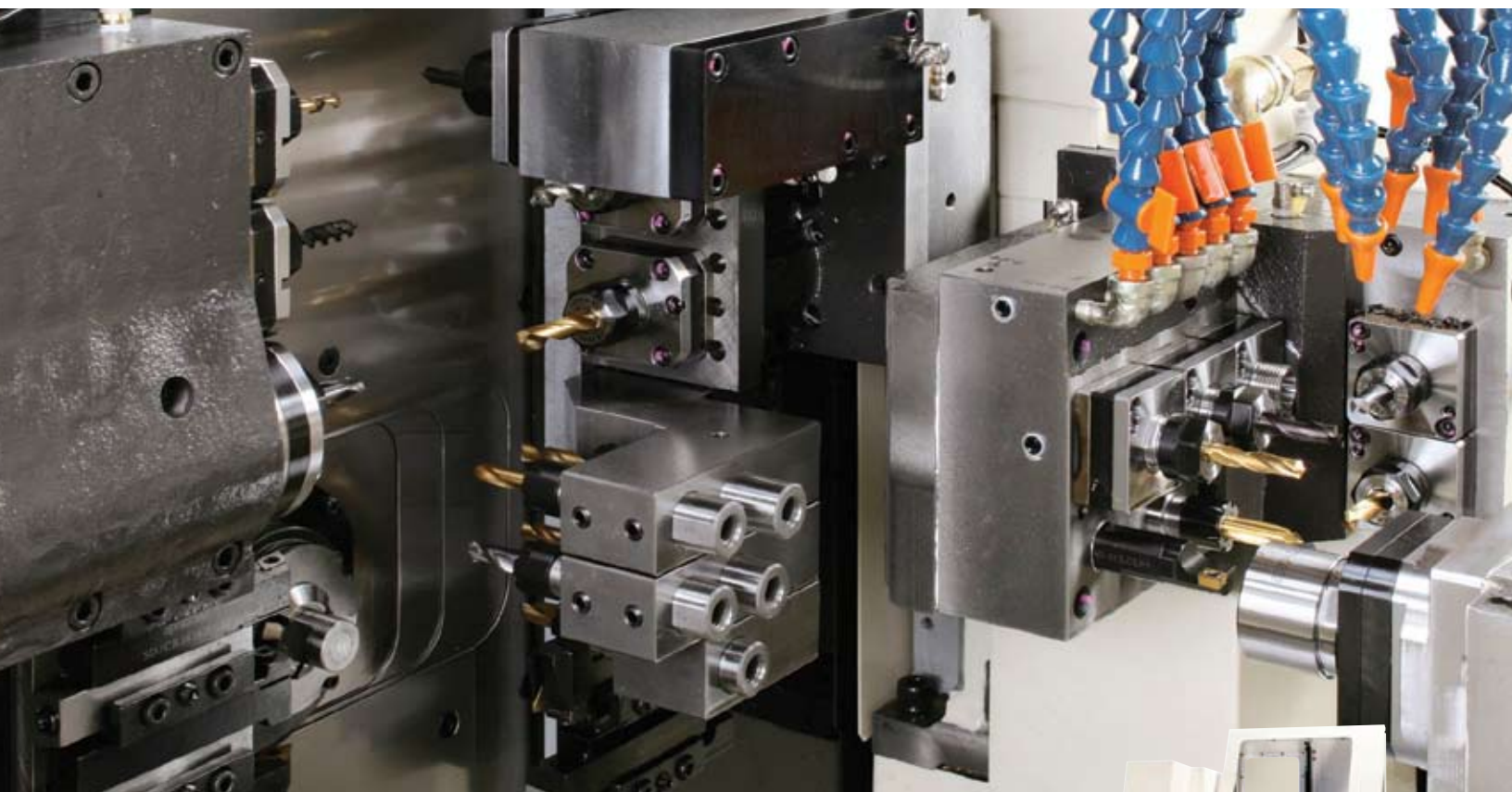
**LG:** Phenomenal distribution.

**CC:** Phenomenal distribution from a Kennametal perspective. We can multi-brand, so we can put some of those products through the Kennametal channel. To be honest with you, Manchester covers a niche that one of our competitors is very good at. I’m an offensive player. I always believe that if you’re not on offense, then you leave yourself open for your customers or competitors to kind of nibble at you. Now we have a line that we can compete with and give our competitors something to be distracted about because we’re going to go into their heart with this line. We’re going to have a product manager that is going to be focused on that line; he’s going to drive that globally. We believe that we can double Manchester’s sales every three years. We’re going to take a regional company and make it a global product line.

**LG:** Carlos, I understand after our meeting you’re going to Nantucket to talk to an investors’ conference. How much of your corporate job is plugging the stock?

**CC:** Well, I wouldn’t call it plugging the stock, but it’s

# TSUGAMI SS20



## NO GIMMICKS - JUST THE FACTS.

- NEW! Tsugami SuperSwiss Turn!
- Adjustable driven face tool for thread whirling, polygon turning and more.
- Modular tool zone can be converted in minutes.
- 8,000 rpm Main and Sub Spindle
- Driven back and cross working tools for complex workpieces.
- Wider tooling zone, easier tooling setup
- 220mm of stroke for longer parts



**Visit [www.tsugamiusa.com](http://www.tsugamiusa.com) to watch the SS20 cut!**

910 Day Hill Road  
Windsor, CT 06095  
860.687.3400  
[www.tsugamiusa.com](http://www.tsugamiusa.com)

**TSUGAMI**  
Rem Sales, LLC

a fair question. When I became a CEO, I had to do a lot more with the investor community than before, plus I wanted to put a strategy out there. I wanted people to understand the company. So in the first 18 months it was not so much about plugging the stock as it was to say, “This is the vision. This is the strategy of the company. This is where we’re going and this is what the company is.” I’m changing the focus to where I don’t need to spend as much time with the financial community. My CFO can spend time with the financial community and supplement there, where as I can spend more time with the customers; I can spend more time internally now. God knows, in 12 months my priority is going to be different. It really depends what stage we are at as a company. I spend a lot of time now with acquisitions because it’s important; it’s one of our strategies. I have to sit down every year and reflect on what happened last year; where we are, where the company is going and what will my focus be in the next 12 months.

**LG:** What are you reading these days?

**CC:** I just finished a book called *The Whisper of Your Heart*. It talks about how you listen to your subconscious, because people are going at you 200 miles per hour and your conscious is not getting enough information from your subconscious, and you’re just not as aware as you should be.

**NG:** What is an average day for you as a CEO?

**CC:** My day today is meeting with you guys in the morning. I took the first hour to prepare for the day. I work with my assistant throughout the day because my calendar is probably the most challenging thing to manage, and she does a great job. I’m doing a review today of our M&A, looking at what’s in the pipeline, what is not. I’m doing a strategic review for one of the units to try to figure out – where are we going to go next? Most often I work through lunch. Today one of the top guys from Fairfield University, my alma mater, is coming to talk to me to see if I can get more involved with the school. This afternoon, I fly to Nantucket to spend part of the afternoon and tomorrow doing investor meetings. We do quarterly reviews with all the business, so I spend two days per quarter on that. Our fiscal year ends this month. It starts in July, so we just finished planning review meetings and that takes a week for me and

my CFO. I want to make sure all the people understand the P&L in front of me, because I want to look them in the eyes and say, “Are you committed to this?” It’s very important that we have these meetings.

**NG:** How many hours a week do you work?

**CC:** The life of a CEO, you are on 24 hours a day, which is kind of sad in some ways. Because we are a global company, I can get a call at 1:00 in the morning. When you have 14,000 employees, there’s something going on somewhere around the world that I need to know about. I would say that on average I probably work about 60/70 hours a week. I feel that now we have a good team and so maybe I can get a little bit of relief on that. I spend one week a quarter in the shops. I wish I could spend 90 percent of my time in the shops because I just love it. I’m a different style of CEO. There’s CEOs that spend all their time in the office. I spend the time in the office that I have to. The rest of the time I’m on the road.

“I have to sit down every year and reflect on what happened, where the company is going and what my focus will be.”

**LG:** Are you talking about the shop here or customers’ shops?

**CC:** Both, but I like to go into our shops. I’m a shop rat, so that’s exciting for me.

**LG:** What’s the hardest part of being a CEO?

**CC:** You don’t own your time anymore. Everybody knows where I am at any time. I’m a private person. I don’t mind working 70 hours, but on Sunday I like to be able to get up and not shave and go have brunch. I can’t do that anymore because everywhere I go people know me, and people come to my table, they want to shake my hand and talk to me. I understand that comes with the job, but it’s sort of difficult for me.

**LG:** Are you going to enjoy visiting Nantucket, or just get out of there as soon as your meetings are over?



## The smallest part you make... can make a big difference in someone's life

A tiny surgical screw, exquisitely machined and finished, can help return someone to an active and productive life. Every part you manufacture serves some purpose; each contributes in some degree to the health, safety, security, or economic well being of others. With so much at stake, how can anyone settle for less than the most accurate and reliable machine tools? At Star, we don't think you should. We don't compromise so you don't have to. That's why we design and manufacture every piece of advanced CNC machining equipment, such as our new SR-20RIII, to be the most accurate, reliable and productive system available. We understand it's not just a part, it's a part of life.



[www.PerfectionInMotion.com](http://www.PerfectionInMotion.com)



**HEADQUARTERS** 123 Powerhouse Road • P.O. Box 9 • Roslyn Heights, NY 11577 • Tel: 516 484-0500  
**MIDWEST** 375 Bennett Road • Elk Grove Village, IL 6007 • Tel: 847 437-8300  
**WEST COAST** 22609 La Palma Avenue • Suite 204 • Yorba Linda, CA 92887 • Tel: 714 694-1255  
**TECH CENTER** c/o Numberequip • 4810 Briar Road • Cleveland, OH 44135 • Tel: 216 433-9290  
**TECH CENTER** 5 Craftsman Road • East Windsor, CT 06088 • Tel: 860 627-7833

**CC:** I'm getting out of there as soon as the meetings are over.

**LG:** What a shame.

**CC:** Isn't it? My family is very important to me. I have two boys, both at Arizona State University. This Friday I'm actually going to the Caribbean with them, just the three of us. That's very important. I recharge. I retreat. But when I go on a business trip, it's a business trip. When you're with employees, investors or customers, you have to be on top of your game. I often tell people that if you want to be a leader, you have to smile even if it hurts, all the time, because the way you present yourself really creates the environment for the company. If people see that I'm not smiling, they get worried about the company.

**LG:** It must be tough being a public person.

**CC:** I think it's tough. Some people like it, some people don't like it. I don't like it, but I also know it comes with the job. I have to do that for the company because if I'm recognized, then the company's recognized and I can't shy away from that. I'm at airports around the world, I hear my name and I turn around, there's somebody who knows me at the Hong Kong Airport or the Berlin Airport. Sometimes it's an uncomfortable feeling. You feel like you don't own your life anymore.

**LG:** That must be tough. You talked about your two sons. I saw that you're a sponsor for the NIMs and for the Skills Contest. I was talking to one of our freelance writers whose two sons go to Dartmouth. He went to Dartmouth. He was in a fraternity there and every year he gets a letter from the fraternity saying what the seniors are going to be doing after they get out. He said that of the 23 seniors last year, 20 of them are going to work on Wall Street. I'm thinking to myself, what a pity. Where are the guys going into manufacturing, the clergy, becoming soldiers or artists?

**CC:** We have a challenge in this country, to be honest with you. I'm fortunate that I have an education that covered everything from finance to manufacturing to engineering, so I have a pretty well-rounded background. I've worked basically in every function in the company. I love manufacturing. You make things. I tell people that Kennametal is a pervasive company. Everything that you touch, Kennametal is part of it. Think about that.

You get up in the morning, you turn the light switch on – Kennametal helped make that light switch. You go have breakfast, you have cereal. Kennametal helped make that. That's an exciting thing, but people don't look at manufacturing as sexy. That concerns me most – that engineering and manufacturing are no longer a sexy thing.

**LG:** Do you think your sons will end up working for a big manufacturing company or do they have no interest in that?

**CC:** They have no interest in that, as much as I try. Both kids are in liberal arts/marketing. They could work for a manufacturing company but not as an engineer. But I find it exciting. I just finished a trip last week on the road in the shops, and I came back recharged. I get recharged

**“That concerns me the most – that engineering and manufacturing are no longer sexy.”**

when I spend the time in the shop if it smells like oil. I love it. Talking to an operator to me is knowing that that operator knows what the company is, what the vision of the company is, knowing that he's aligned, knowing that he's excited about being part of the company. That's what drives me. That's what makes a difference for me. It's knowing that that guy's excited about Kennametal. I hope that guy loves what he does and his family is secure because of Kennametal. That really is what makes you say, “I'm really making a difference.”





UltraTurn XL™

# Filling The Gap

The Ideal Machine for:

- **Fast Cycles**...the fastest machine in its class
- **Improved Quality**...triple your Cpks over cam machines
- **Reduced Setups**...slash your setup time to under an hour
- **Reduced Maintenance**...hundreds of mechanical parts removed
- **Reduced Costs**...offload CNC and multi-spindle jobs
- **Increased Productivity**...double your output with no extra labor



# Graff-Pinkert & Co., Inc.

4235 West 166th Street, Oak Forest, IL 60452

[www.graffpinkert.com](http://www.graffpinkert.com)



Lloyd Graff  
Owner

Jim Graff  
Owner

Rex Magagnotti  
Sales



## Wickman and Index Tooling Specialists

**Tooling:** Complete assortment of new and used spare parts and attachments.

**In stock:** Threading, pickoff, cross slides, etc.

phone 708-535-2200

fax 708-535-0103

***Shop Graff-Pinkert online***  
***for web exclusive listings and prices***



<http://stores.ebay.com/graff-pinkert-screw-machines>

# CURRENT INVENTORY

**Serviceman available with machine purchase. All machines can be equipped with threading, pickoff or thread chasing. As you want it.**

## WICKMAN

5/8" 6-spindle, thdg., pickoff, 1971-88 (8)  
1" 6-spindle, 1960-1992 (9)  
1-3/8" 6-spindle, 1967-1979 (3)  
1-3/4" 6-spindle, 1965, 1993 (10)  
1-3/4" 8-spindle, 1970  
2-1/4" 6-spindle, 1962, 1973-79 (3)  
3-1/4" 6-spindle, 1982  
5-5/8" 6-spindle, 1979  
6-5/8" 6-spindle, 1979

## ACMES

1-1/4" RA6, , 1994, thdg., pickoff  
1-5/8" RBN8 - 1994 (2)  
1-5/8" RBN8 '81 (2)  
1-5/8" RB8, 1980, rebuilt 1996. pickoff  
1-5/8" RB8 thdg., pickup '68 (2)  
2" RB6, 1979, Direct Drive Rebuild (2)  
2" RB6 collet chucker, 1980  
2-5/8" RB6- pickoff4" RB6, 1975

## GILDEMEISTER

GM-16 AC '97-2000 (4) w/lemca  
GM-20, 1993

## INDEX CNC MACHINES

Index 42mm ABC, polygon '96  
Index GFG, 1987 (3)

## SCHUTTE

SF 51, 1979  
SF 67, 1973

## SWISS-CNC SLIDING HEADSTOCK

Citizen L-20, 1998  
Citizen L-32, 2005  
Tornos A10A, 2005

## NEW BRITAIN

Model 62 2-1/4" 6sp., 1975, heavy thdg.  
Model 62 2-1/4" 1967

## DAVENPORT

3/4 Davenport, 2006  
3/4" thdg., pickoff, longbed (4)  
3/4" chucker, 1991 (4) Tamer  
3/4" with Tamer & Logan clutches,  
'91, long bed  
3/4" thdg., pickup, 1977-66 (8)

## MISCELLANEOUS

Davenport slotting, 1950  
Hydromat flanges for HW25-12

Reed B-18 thread roll  
Winter 125 thread roller  
Davenport chucking package **\$1250**  
Mectron laser measuring machine mfd. 2000  
Trion air cleaner (10)  
Ring-type for chucking for 1-1/4" RA6 (2)  
\$1,950 ea  
Elb 10x20 surface grinder

## HYDROMATS

CNC 36/100 HSK tool spindles w/2-axis CNC  
flange and valves w/ 6-axis CNC cabinet.  
New in 2006- ran prototype work only!  
Customer never got production job!  
HW25-12 1986 (3)  
HB45-12 1997-1995  
HS16 Hydromat, barfeed '97 (2)  
HB45-16 chucker, 1997

## BROWN & SHARPE

#2 CNC 1-1/4"

## ASK FOR OUR IN-HOUSE PARTS EXPERT

Cathy Heller Wickman and Index Parts manager

Phone 708.535.2200 Fax 708.535.0103



WITH NOAH GRAFF

# shop doc

*Today's Machining World's*

*"Shop Doc" column taps into our vast contact base of machining experts to help you find solutions to your problems. We invite our readers to contribute suggestions and comments on the Shop Doc's advice. If you consider yourself a Shop Doc or know a potential Shop Doc, please let us know. You should also check out the TMW online forum at [www.todaysmachiningworld.com](http://www.todaysmachiningworld.com).*

**Have a technical issue you'd like addressed? Please email [noah@todaysmachiningworld.com](mailto:noah@todaysmachiningworld.com). We'll help solve your problem, then publish both the problem and solution in the next issue of the magazine.**

Dear Shop Doc,

We are frequently utilizing indexable carbide inserts for single point turning processes in our shop. It appears that most of these inserts are available in M (molded) or G (ground) tolerances. Can you tell me the benefits of one over the other? Also, how will I see the performance advantages from the more expensive G inserts?

**Weighing In**

Dear Weighing In,

Let's first briefly touch base on how an insert is made. Several powders which make up the substrate of the carbide are molded into the shape desired. The next step is to "sinter" or basically bake it. This sintering process actually shrinks the insert to the size desired, with a tolerance for its thickness and inscribed circle dimensions.

At this "molded" point, all that is left is to prep the cutting edges, then inserts are ready to make chips. There isn't any other cost involved other than packaging. Some of these molded inserts will be coated, which is one more step that adds to the cost. A subsequent grinding operation can take place on the edges, and or top and bottom of the inserts. This will ensure each insert will be held to a given tolerance.

A great reason to use ground inserts is that once you establish the centerline of a turning insert, the next insert should be sitting at the same height. Incorrect centerline height is one of the most common causes of poor tool life in turning applications.

Also, as you index the insert from cutting edge to cutting edge, you should be able to reset any wear offsets (on a CNC machine) or back off any adjustments to the starting position that the last tip of the insert started at, and begin with a good part or dimension that this tool is cutting. Each manufacturer states their tolerance on their insert. Typically it is the third letter in their insert nomenclature

In some cases, to maximize machining effectiveness when cutting materials such as aluminum or titanium, a slicing or shearing action is exactly what is preferred. This is obtained by further grinding a sharper cutting edge on the insert.

**Jim Rowe**  
Mahar Tool Supply



**HOFF-HILK**  
AUCTION SERVICES

# AUCTION NOTICE

## Bystrom Bros. Inc.

COMPLETE OPERATIONS CLOSING BY ORDER OF DIRECTORS.

### Swiss Type, CNC



### CNC Centerless, Centerless Grinding



### Automatic Screw Machines



OVER  
300  
MACHINES

### Swiss Type, CNC

Tsugami  
BU38SY New 2004  
BS20cIII New 2002  
BS32MKII New 2001  
BS20bIII New 2002

### CNC Centerless, Centerless Grinding

Cincinnati, CNC  
325-12 New 2003  
220-8 New 1994

### Royal Master

TG12X4 New 1988  
TG12X4 New 1986

### Cincinnati

325-12  
220-8 (5 Available)

### Automatic Screw Machines - Over 40 ACME's

RB8, 3/4" New 1999  
RA6, 7/16" (10 Available)  
RA6, 9/16" (5 Available)  
RA6, 1" (4 Available)  
RA6, 1 1/4" (10 Available)  
RA6, 1 5/8"  
RA6, 2" (2 Available)  
RA6, 2 5/8" (11 Available)  
RA6, 3 1/2"

### CNC Combination

Daewoo  
Puma 230 New 2001  
Lynx 200 New 1998

Mori Seiki  
SL 150 New 1996

Milltronics  
ML 15 New 2003  
Takisawa (3 Available)  
TC-1 New 1990's

### CNC Chuckers

KIA (10 Available)  
KIA 30A & 30B to 1999

Puma (3 Available)  
6S & 6G to 1998

Miyano (2 Available)  
BNC34T New 1990's

### CNC Cylindrical

Mitsubishi  
PD32-100D New 2000  
RD32-50A New 1998

### CNC Combination



### CNC Chuckers



### CNC Cylindrical



BID ONLINE  
STARTING  
SEPT. 26, 2007

Bid Online from September 26th to October 10th, 2007

**www.hoffhilk.com**

123 26th Avenue North  
Minneapolis, MN 55411  
Ph: 612-521-5500  
Fax: 612-521-9358  
info@hoffhilk.com

**REGISTER NOW**  
To receive important  
updates about this sale!

In Conjunction With:  
**Orca Machine Tools, Inc.**  
6540 Jansen Avenue NE  
Albertville, MN 55301  
Ph: 763-494-9825



A continuing column in which we ask smart people to discuss their views on topics related to the future of manufacturing

next

BY NOAH GRAFF

## If gasoline reached \$10 per gallon in the U.S., would Americans alter their driving behavior?

*Despite recent dramatic spikes in gasoline prices across the United States, with prices often exceeding \$3 per gallon, most Americans have not significantly changed their driving habits.*

### fact:

There are 107 million U.S. households, each with an average of 1.9 cars, trucks or sport utility vehicles and 1.8 drivers. That equals 204 million vehicles and 191 million drivers.

Bureau of Transportation Statistics  
salon.com, August 29, 2003

Yes. In an oil-based economy, such as the current one, an overnight price increase from \$3 per gallon to \$10 per gallon for motor fuel would cause a dramatic drop in the stock market. If the country were to enter into a recession as a result of the stock market plunge, gas prices would moderate and retreat from the \$10 mark, due to the resulting drop in demand for fuel and other distillate-based products.

Corporations could be forced to institute telecommuting policies that allowed more employees to work from home. Large urban areas would see an increase in car pooling, bus ridership, and subways. The President could enact a 55 mph speed limit on federal highways to increase fuel efficiency, as well as strict CAFÉ standards. The Strategic Petroleum Reserve could be tapped to provide temporary relief. Alternative fuels would become much more attractive, but would face availability issues.

Jim Rink

AAA-Michigan Spokesperson

If the price of gasoline reached \$10 a gallon, I think a lot of other things would have changed – like draw down of the Strategic Petroleum Reserve, deployment of troops, etc. But, the question does underscore a basic reality about American life. We have built our society around the automobile and allowed Americans to become addicted to oil (in President Bush's terms), because of the way we have configured our living space and the utter failure to require auto makers to develop and sell fuel efficient vehicles. It is figuratively (if not literally) illegal to walk to the supermarket in many American neighborhoods because we have zoned commercial properties out of residential areas. People would cut back on social activities, which are often scattered across the map, but they would not be happy.

Mark Cooper

Consumer Federation of America

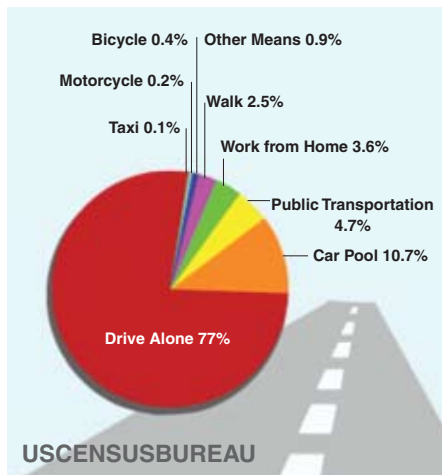
Yes, but not as much as you would think. While consumers would feel pinched by high prices, changing behavior requires having choices, and there are fewer than ever nowadays. Basically, consumers have three options for escaping high prices at the pump: Choosing a more fuel-efficient vehicle, gasoline substitutes, or alternatives to driving. Yet none of these offers consumers much solace: Vehicle fuel-economy standards have stagnated since the 1970s, a paltry one percent of retailers carry substitutes (i.e., biofuels), and sprawling suburban designs make it impossible to walk, bike or take transit. Without higher efficiency standards, widely accessible fuel alternatives, and improved community design, consumers will remain hard-wired into current reality with limited ways of coping with price increases.

Deron Lovaas

NRDC

# the facts:

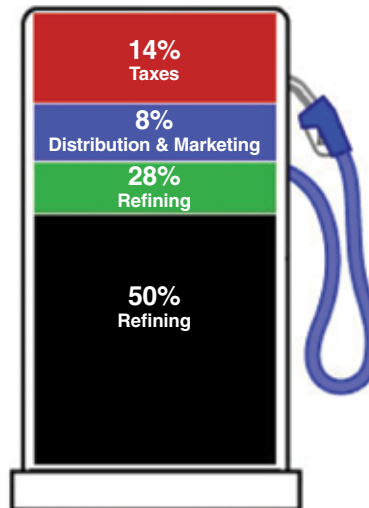
## How Americans Get to Work



Source: 2005 American Community Survey

U.S. Census Bureau, 2005 <http://www.census.gov>

## What We Pay For In A Gallon of Regular Gasoline (April 2007) Retail Price: \$2.895/gallon



Source: US DOE

HowStuffWorks (April 2007)  
<http://money.howstuffworks.com/gas-price1.htm>

## Weekly Retail Premium Gasoline Prices (Including Taxes) 08/7/2007

Belgium .....	\$6.84
France.....	\$6.67
Germany .....	\$6.95
Italy .....	\$6.99
Netherlands.....	\$7.58
UK .....	\$7.38
US.....	\$3.06

<http://www.eia.doe.gov/emeu/international/gas1.html>

## Somma BROACHING Tools



*Successfully broach square, hex and special shapes like these... Call us!*



- Exclusive bearing design gives longest life.
- Somma broach blanks cut freer and reduce spiraling.
- Produce internal or external shapes on screw machines, CNC lathes and other machines.

**Somma**  
**TOOL CO., INC.**

109 Scott Road, Waterbury, CT 06725  
phone: (203) 753-2114 fax: (203) 756-5489  
email: [sales@sommatool.com](mailto:sales@sommatool.com)

## VARLAND

*Electroplating Specialists since 1946*

ISO 9001:2000  
REGISTERED

***“Varland’s Unique Barrel Plating Services make the difference!”***

- Monitored plating cycles.
- Plating thickness, X-rayed tested.
- Excellent adhesion and full coverage.
- Careful handling and segregation of parts.
- Computer controlled loading and cleaning.
- Quality checks by operator, Q.C. Depart audit.
- Bar Code labeling and direct shipments.
- Certifications of plating specification.

### ***Barrel Finishes:***

Nickel, Copper, Bright Acid Tin, Zinc, Matte Alkaline Stannate Tin, Zinc-Iron & Tin-Zinc Alloys, Clear & Yellow Dyed Trivalent Chromate, Cadmium, Brass & Electroless Nickel.

Web Site: [www.varland.com](http://www.varland.com) • E-mail: [sales@varland.com](mailto:sales@varland.com)

Phone: 513.861.0555 • FAX 513.961-7017

**VARLAND** METAL SERVICE, INC.

3231 Fredonia Ave. • Cincinnati, OH 45229



one on one

**John Ratzenberger** is best known for his role as Cliff the mailman on *Cheers*. Today he hosts *Made in America*, a documentary-style television show on the Travel Channel in which he travels around the United States visiting American manufacturing companies and meeting factory workers. He also recently started the Nuts, Bolts and Thingamajigs Foundation to encourage and help kids develop the manual skills required to work in the manufacturing industry.

**NG:** John, tell me about your family background. What did your parents do?

**JR:** I grew up in a factory town. My mother worked in a factory, my dad drove a truck. I was a carpenter before I became an actor.

**NG:** Like Harrison Ford?

**JR:** No, No, everyone says that, but Harrison Ford was a different kind of carpenter. I was a house framer, he was a fine carpenter. I actually did it for a living. I traveled around the country and throughout Europe building houses before I became an actor.

**NG:** Why did you start the Nuts, Bolts and Thingamajigs Foundation?

**JR:** Traveling with my show, *Made in America*, it occurred to me after about 50 factory visits that the biggest problem [our country] is facing is the fact that kids now come out of high school without any manual skills. The average age of a factory worker is 52-years-old. So in six to 10 years, that's it. And without people who manufacture things, there is no civilization. It's over.

**NG:** Do you think in some ways we are headed in the right direction with TV shows like *American Chopper* and your show, and special technical Schools like Minuteman high school?

**JR:** There certainly is a trend, but still, [regular] high schools don't have shop courses anymore and TV shows are not going to change that.

**NG:** What's your greatest fear for the future of manufacturing in the United States?

**JR:** That we'll become a slave nation to China and India. That we'll have to do whatever they tell us to do, because without manufacturing we don't have any power. None at all.

**NG:** What about the people who can only afford to shop at Wal-Mart because they need the cheaper goods made in China?

**JR:** I think that's a myth. I think there are a lot of people who just don't have money management skills. I've been to some of those homes, there's a lot of stuff just lying around. You don't have to buy a new bicycle if it breaks, you can always fix it. That's what we used to do and that's what gave kids skills.

**NG:** Do you see things going in the right direction in any respects?

**JR:** Not with the media. Any time you see a movie or a TV show, they depict someone who works with their hands as losers. Your job and my job are not important for the overall civilization. But if all the factory workers decided not to show up for work, or if all the heavy equipment operators decided not to show up for work, the country would collapse.

**NG:** What's it like to live in Hollywood? You don't exactly seem the type who would like it much.

**JR:** Well, it's not a place you're going to raise goats. But you're here for a reason; because that's where the business is. It's an industry. They have raw material coming in one end of the building and a finished product going out the other end, no different from any factory town.

**NG:** Thanks John.

how it works

BY BARBARA DONOHUE

Photo below:  
Puma MX eries turn/mill center.  
Photo courtesy of DOOSAN Infracore  
America Corportion

# Bar stock

in one side,



how it works



Photos Above: Nakamura Super NTX Mill/Turn center with ATC and lower turret with Y axis, and up to 220 tools in the tool changer, and 24 on the lower turret. Photo courtesy of Methods Machine Tools, Inc.



Photos Above: The GMX 250 S linear turning/milling center with TurnPlus programming system. Photo courtesy of DMG America.

# completed parts out the other.

## Are turn-mill machines the wave of the future?

**T**hey're called turning-milling, multi-tasking, multi-function, or mill-turn machines. They turn and they mill, in the same machine, in the same setup, maybe even at the same time. They come with a lathe spindle, or more likely two, and some means of milling – turrets or a milling head or sometimes both, all with enough power to do real metal cutting.

Lathes with live tooling have been around for a long time, and, of course, screw machines have been turning and milling parts too.

But recent generations of turn-mill machines have the speed, power and flexibility to make parts faster, with higher accuracy and less setup time. They can machine from bar stock to finished parts, top and bottom, front and back, inside and out, all in the same machine,

Of course, these turn-mill centers are not cheap. A smaller, unit with, say, a 6-inch chuck, dual spindles, and two turrets, might run you \$200,000. A full-blown 9-axis tilting head machine with a 12-inch chuck could cost in the range of half a million dollars.

Can these machines really be worth it? A lot of people think so, and more and more shops are willing to pay. Manufacturers of the turn-mill machines find customers need the machines' capabilities in order to stay competitive.

"We can go to a customer and say, 'We can improve your overall process time by at least 15 percent,'" said Steve Wilkins, general manager, northeast region for Mazak Corporation, Windsor Locks, Conn. And that's a minimum, he said. Thirty percent is common, and one customer has experienced 78 percent process time improvement, he said. "They shut down the [turn-mill] machine three days a month to let the rest of the shop catch up."

### Job shops are early adopters

Job shops with 25 employees or more seem to be the most likely to buy a turn-mill machine, Wilkins said. Smaller shops might hesitate at the cost and seek less expensive turning centers or lathes with some milling and drilling capability, and many large companies seem to be slow to adopt the new technology. This is actually good for the job shops that have turn-mill machines, as they can make parts more economically.

Shops need to have their turn-mill equipment in house and running, Wilkins said. "You can't get the contract and then order the equipment." He said he sometimes receives calls from customers looking for shops that have particular types of machine, and those shops receive orders.

One turn-mill machine can complete the processes that used to be done on three or four or five machines – lathes, milling machines, machining centers, pointed out Scott McIver, chairman, Methods Machine Tools, Inc., Sudbury, Mass., importer and distributor of Nakamura equipment. "Most of our customers buy this type of machine in situations where they need to be more profitable. [They're] getting rid of redundancy, can get rid of multiple operators and stations, and get a more accurate part." Turn-mill machines account for a significant portion of his company's sales, McIver said.

Sometimes a shop owner will come in and say, "I've got a part I want to quote," but he can't machine it on his current equipment, McIver said.

Once they start down the road to turn-mill, shops can use the machine to grow their business, McIver said. They can go out and find work, parts that need lots of milling, or secondary operations.

Also, when longtime customers say, "I need a discount," and the shop owner may think, "I can't make this part

# how it works



Photos Above: Aluminum fan housing machined on the Nakamura Super NTJX Turn/Mill center. Photo courtesy of Methods Machine Tools, Inc.

NOTE: All products are made complete from raw stock to finished part, in one operation off of the Nakamura-Tome machine centers.



Photos Above: Aluminum medical device machined on the Nakamura WT-150. Photo courtesy of Methods Machine Tools, Inc.



Steel valve with many Y axis milling features making full use of the 3 Y axis on the Nakamura Super NTY3 Mill/Turn center. Photo courtesy of Methods Machine Tools, Inc.

profitably," a multi-function machine can do just that, McIver said.

"By its nature it's automated," said Dion Coleman, application engineer at DOOSAN Infracore America Corp., West Caldwell, NJ. "Bar stock in one side, parts out the other."

"This is not the way to make every part. The key is the right quantity and the right complexity of parts," said Coleman. But the correct combination of quantity and complexity is different for every part. For example, for your just-in-time customers, you will want to make short runs. Your turn-mill machine can take care of that. Once you have the part program in the control and the tools in the magazine, you can start running that part quickly, maybe even in a matter of minutes, by just changing the material and work holding.

## Quality, Accuracy, Scheduling

If you have a multi-tasking machine, once you get it set up you can start producing parts immediately, said Coleman. Even better, you can do a first piece inspection and find out if there's a problem right away, rather than after running an entire batch of parts through several machines.

And, because you aren't moving the part from one machine to the next, it won't suffer from the accumulated loss of accuracy that comes from placing a part in one fixture after another, Coleman said.

Scheduling becomes a non-issue when one machine does the process, start to finish. And work-in-process inventory goes way down. A turn-mill center can even save floor space, as you don't have carts and tables of parts waiting for their next machine.

Of course, there is more to getting up and running than just buying the machine. Application engineers at the manufacturer will help you get started. You'll probably need to get up to date on the latest CAM software for programming your machine. This may be an easy step if you've been programming machining centers, but if you're stepping up from simpler machines or have been programming manually, it's going to take a while to learn and get comfortable with the software and operation of the machine.

## Programming

A turn mill is really a lathe with up to eight different kinds of milling going on as well, said Hanan Fishman, president of Partmaker, Inc., Fort Washington Pa. There is a lot happening inside the machine, but the individual motions aren't that complex if you break them down into their individual steps.

Besides controlling the cutting, you'll want to synchronize



# THE STEEL BAR SPECIALIST

## SUPPLY

Eaton Steel stocks hot rolled bars and produces and stocks premium cold finished steel bars. Stocked and produced in strategic locations throughout the country are carbon bars, alloy bars, long bars, pre-cut bars, turned and polished bars, heat treated bars...just call us!

## SERVICE

Family owned for nearly sixty years means service that keeps customers coming back... over and over. From a "real" human voice at first call to a heart-felt "thank you" when the transaction is complete, Eaton Steel's good old fashioned service is a step above industry norms. Plus, you get steel bars on time...every time.

## ECONOMY

Not only are their bar products competitively priced, Eaton Steel also offers cost saving inventory management systems. Representatives work first-hand with customers to develop inventory systems best suited to their production and financial needs.

## EXPERTISE

Production expertise, metallurgical expertise, transportation expertise, Eaton Steel has it all. Astute personnel with years of experience in their respective responsibilities. So, if you need steel bars for your production, call Eaton Steel Bar Company and get ready for a pleasant surprise.

 **EATON STEEL**  
BAR COMPANY

[www.eatonsteel.com](http://www.eatonsteel.com)

800.527.3851 • 248.398.3434

# how it works

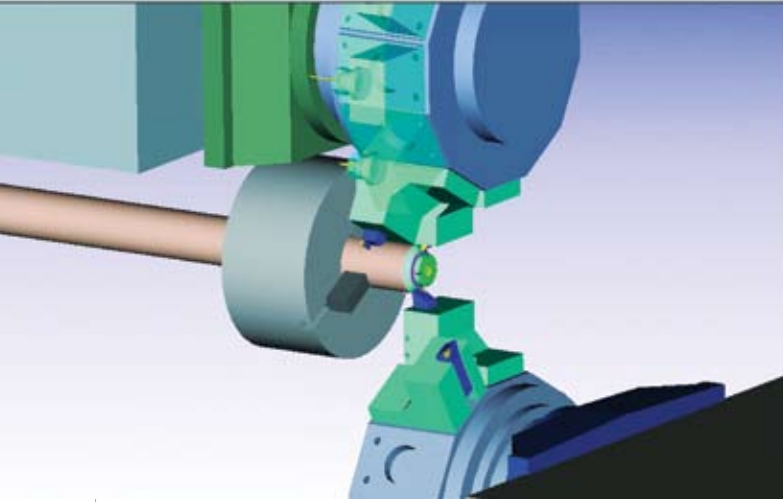


Photo: PartMaker's FMS machine simulation module is displayed for a twin turret, twin spindle machine. The PartMaker FMS module allows users to see collisions on-screen before they occur on the machine tool. Illustration courtesy of PartMaker, Inc.

operations, move the part from the left spindle to the right, perform cutoff, etc. You will also want to balance the operations on the left and right spindle, so they take approximately the same amount of time. Much of the time-saving potential of a turn-mill machine is that cutting can happen at both spindles at the same time.

To maximize the uptime for your new turn-mill machine, you'll want to create the program for each part offline, with a CAM (computer-aided manufacturing) software package.

What you really need your software to do for you is produce code that works on your machine. The offline programming process actually consists of two aspects. One is creating a program to guide the actions of the machine. The second is transforming that program into code that will work on your model of machine. This is called post-processing, and is very important. If the post-processor for your machine doesn't work right, you will have to tweak and edit the code on the machine.

You will also want to check out the program before running it on the machine. Software packages often include simulation features so you can see what happens, step by step, and watch out for any problems.

In selecting software, your primary question should always be, "Can this software generate good code for my machine?" Fishman said.

When evaluating which software to buy, you should keep in mind the following:


- One size does not fit all
- Different shops approach programming differently, and start out with different part documentation, whether drawings, or electronic files.
- Do not take the vendor's word for anything. Check it out yourself.
- Make sure the vendor demonstrates the software in a way and at a pace that is comfortable for you.
- Be sure to get independent references. You want to talk to people who are using the software and have the same machine you do.
- The manufacturer of the turn-mill machine may have a recommendation. Listen, but check out the software yourself.

You may want to take the "try before you buy" approach, in which your staff receives some training and then has a free trial of the software for a month. Or you may prefer a web-based demonstration, or a demonstration in person at your shop.

## Tooling

On mill-turn systems that have a milling spindle, the spindle will sometimes be milling and sometimes be holding a static tool for turning. This function can place a burden on the tool holding hardware.

One thing to be aware of when ordering a machine, Coleman said, is that manufacturers offer milling spindles with different types of tool connection systems. Turn-mill machines place more demands on the tool connection than





Look **NEW** into the  
**Davenport HP**  
 High Precision Multi Spindle

**FAST ROI!** *Contact Davenport for a FREE ROI Analysis!*  
*This is an example of an actual part run on a Davenport.*

	Davenport HP*	Competitor
<b>Machine cost</b>	<b>\$183,400.00</b>	<b>\$412,500.00</b>
Material cost/pc	\$0.08	\$0.08
Labor [\$ /hr]	\$60.00	\$60.00
S/U time [hr]	8	8
Parts per S/U	200,000	200,000
Cycle time [seconds]	6	6.00
#parts/year	800,000	800,000
<b>Cost/part</b>	<b>\$0.18240</b>	<b>\$0.18240</b>
Selling Price / part	\$0.26050	\$0.26050
<b>Total cost</b>	<b>\$145,920.00</b>	<b>\$145,920.00</b>
<b>Revenue</b>	<b>\$208,400.00</b>	<b>\$208,400.00</b>
<b>GP</b>	<b>\$62,480.00</b>	<b>\$62,480.00</b>
<b>ROI Realized in:</b>	<b>35 Months</b>	<b>79 Months</b>

\*Davenport machine cost includes tooling.

**800-344-5748 • www.davenportmachine.com**

# Everything You Need for Parts & Tooling to Keep Your Screw Machines Operating.

RHM



Machine and Steel Service Specialists  
Ray Morris is one of North America's  
leading stocking distributors for all  
of your metalworking needs.

From replacement parts for all of  
your single and multi-spindle screw  
machines, to workholding products,  
gages, measuring equipment, plus all  
the tooling in between, we can supply  
it all.

When it comes to your  
replacement parts, attachments  
and tooling solutions for the  
screw machine industry ...

# We Wrote the Book

- Replacement Parts
- Tooling & Tool Holders
- Collets & Feed Fingers
- Cutting Tools
- Precision Measuring Equipment
- Gages
- Parts & Accessories
- Round Edge Flat Wire
- Tempered Steel Sheet Stock

**800-243-0662**



*Division of Wayne Steel Co., Inc.*

**MACHINE AND STEEL SERVICE SPECIALISTS**

30 Precision Court, New Britain, Connecticut 06051

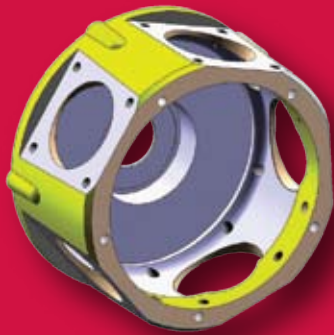
1-800-243-0662 Toll-Free

860-224-2678 New Britain CT - Local

1-800-628-5176 24 hour fax service

[www.rhmmorris.com](http://www.rhmmorris.com)

# Exploit the Power



## Mill-Turn Multitasking CAM Software

ESPRIT CAM software will unlock the profitability from your mill-turn machines with a solution certified to overcome the programming challenges and complexities inherent to these machines. The right CAM system is the key to mill-turn success. ESPRIT is the right choice to release the ultimate productivity of your machine investment.

ESPRIT delivers powerful full-spectrum programming for 2–5 axis milling, 2–22 axis turning, 2–5 axis wire EDM, multitasking mill-turn machining, and B-axis machine tools.



# ESPRIT™

The Right Choice

For more information about the benefits of CNC programming with ESPRIT:

dpotechnology.com  
800•627•8479

## how it works

either turning or milling. “You’re using that spindle to hold both static and rotating [tools],” he said. “The indexing is critical.” Many tooling companies have application engineers who specialize in tooling for multi-function machining and can advise you. Some offer tools and accessories specifically designed for multi-function machines.

The Coromant Capto connection system was developed for multi-function machines, but can be used elsewhere, as well. It is designed to provide repeatable installation within 80 millionths of an inch, said Jim Grimes, a product specialist at Sandvik, Inc., Fair Lawn, N.J.

Grimes said Sandvik has also developed a line of tooling for multitask machines. Multiple cutters can perform different types of cuts, which saves time on tool changes and saves space in the machine’s tool-changer magazine.

### Getting the most from your turn/mill machine

Today’s turn-mill machines will give you higher milling speeds than you may have been accustomed to on your older machines. Take advantage of their ability to take light, fast cuts. For best results, consult your tool vendor for the appropriate cutting tools.

And then there is the number of tools. Though the option for a larger capacity tool changer may seem like an unnecessary expense up front, consider how you will be using the machine in the future. If you keep all the tools for all the parts in the tool magazine, you will consistently minimize changeover time.

To help minimize the number of tools, look for places where you can use a single size of a cutter instead of multiples. For example, you may be accustomed to cutting part A with a half-inch end mill, and part B with a three-quarter-inch end mill. You can revise part B’s program to use the half-inch mill, thus saving one tool.

These turn-mill machines may sound too good to be true, but users are finding they can cut process time, not to mention setup time and work-in-process inventory. The wave of the future? These multi-tasking machines may be a key to success.



Photo: Coromant Capto coupling. Photo courtesy of Sandvik, Inc.

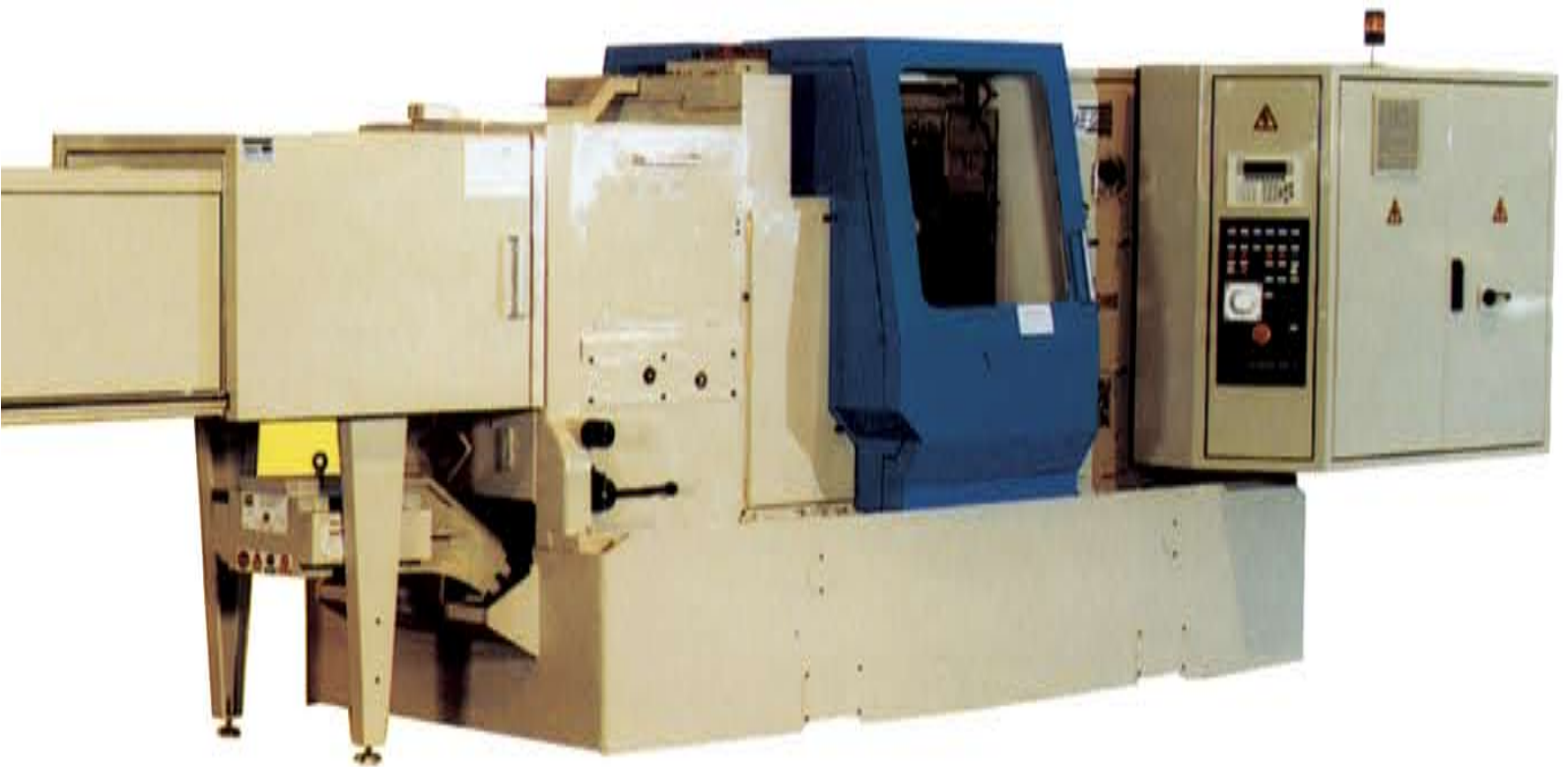


# The Easy To Set Up Wickman Just Got Easier! How?

With the addition of a computer-controlled variable feed/speed motor system combined with the quality of a Graff-Pinkert rebuild.

- No gear changes
- Significantly reduced set-up time
- Dial in the perfect RPM and feed adjustments for extended tool life

Your multi-spindle operators will love it!



**Graff-Pinkert & Company, Inc.**



And see for yourself why we believe Wickman is your best choice for your precision parts!

THESE MILL/TURN MACHINES MULTI-TASK:

Each month, *Today's Machining World* works to help you understand how the precision parts marketplace works, what's available in the industry, and how you can use available resources, as well as knowledge, to run a more efficient and effective shop. In every issue, we'll feature a product category and focus on equipment key to remaining competitive in our marketplace.

By definition, a mill/turn machine sounds like the makings of a great multi-tasker. Indeed, machine tools with mill, turn and drill capability perform simultaneous milling and turning operations on the front and back of a part in a single set-up. Combined with the right CAM system for your machine, a mill/turn allows for complex multi-tasking, meaning potential for both increasing profitability and producing complex, multi-faceted parts. And in today's market, that redefines "multi-tasking to the max."



## Index Corporation

The new INDEX C100 Turn-Mills have three 14-position tool turrets and identical main and counterspindles. These machines are designed for medium complexity parts to 200mm in length from 30-42mm diameter bar.

Up to three tools can be at work simultaneously with both Y axes and backworking at the same time. The counterspindle with linear-motor driven Z-axis can be synchronized with travel of turret 3. Counterspindle pick-up from the spindle is accomplished in 1.5 seconds. Parts can be unloaded from the main or counterspindle.

Simultaneous machining with two Y axes at the main spindle

or a Y-axis at the main spindle and also one at the counterspindle – each with 70mm travel – gives users the option to divide machining operations. For example, users can machine simultaneously with up to 3 tools driven tools for complete machining in a single set-up, including heavy milling, and backworking with up to 5 tools. The C100 comes with 9000-RPM or 7000-RPM spindles. The C100 spindle drives are powerful: 20/29 kW and 25/29 kW (100% / 40%) for the 30mm and 42 mm version respectively.

For more information please contact INDEX Corporation at 317-770-6300 or visit [www.index-usa.com](http://www.index-usa.com).



## Methods Machine Tools

The new Super NTJX multitasking turning center from Nakamura-Tome features Y axes on both the upper and lower turrets, and a long-stroke upper Y-axis. It has milling/drilling capability (including Y-axis machining) on both upper and lower turrets, and a B-axis tool spindle with 40-station ATC.

A maximum of 34.9/24.8 HP is available for synchronized shaft/work turning with two spindle motors. The NTJX has a maximum turning diameter of 9.65", a maximum turning length of 42.91", and bar capacity of 2". Machining may be performed using the upper B-Axis tool spindle or with lower turret driven tools. With a Y-axis stroke of 5.5" (140 mm) and a B-axis positioning range of 230°, the 10/5 HP 8000 RPM tool spindle accommodates larger parts. A 40-station servo-driven ATC provides 1.3 second tool changes (tool-to-tool). The 7.4/5 HP 6000 RPM driven lower turret accommodates 12 rotating or 24 fixed tools and has a Y-axis stroke of 2.75".

For more information, contact Methods Machine Tools, Inc. at 978-443-5388 or visit [www.methodsmachine.com](http://www.methodsmachine.com).

## DMG America

The GMX 200/250 S linear mill/turning centers offer an adaptation of the new Siemens SolutionLine control with the integrated ShopTurn programming system. The GMX 200/250 S linear now operates with graphically-aided shop programming that is specifically designed for milling/turning centers, thereby making previously complex processes as easy and reliable as with a Universal Lathe. This includes a choice of required cycles, and 3D-workpiece simulation for all turning and milling operations that extend to the B-axis contour. The ShopTurn feature makes the new GMX 200/250 S linear a high-productivity tool for mid-size piece quantities, as well as a flexible multi-purpose center for smaller batch sizes and shop-floor operations, regardless of the complexity of the work pieces.

For more information, please contact DMG America Inc. at 847-781-0277 or visit [www.dmgamerica.com](http://www.dmgamerica.com).



## Haas

The TL-15 and TL-25 dual-spindle lathes each feature a vector drive spindle, hydraulic chucking system, an 8-hp sub-spindle with 5.3" chuck and a 12-station hybrid tool turret that holds a combination of six VDI 40 tools and six bolt-on tools. Special twin-bore and twin-turn toolholders are included for sub-spindle work.

The TL-15 features a 20-hp vector-drive main spindle with 8" chuck, and provides a max. cutting diameter of 8.2", a max. cutting length of 17.5" and a max. swing of 23" over the front apron. Both the main spindle sub-spindle provides speeds to 4,000 rpm. The TL-25 features a 30-hp vector-drive main spindle with 10" chuck, and provides a max. cutting diameter of 16", a max. cutting length of 34" and a max. swing of 30" over the front apron. The main spindle provides speeds to 3,400 rpm standard, and the sub-spindle provides speeds to 4,000 rpm. The addition of the live tooling option with full C-axis to the TL-15 or TL-25 allows such secondary operations as milling, drilling and tapping to be performed on the face of the part and around the diameter.

For more information, please visit [www.haas.com](http://www.haas.com).



## Okuma

The new Okuma Multus-B300 is designed to reduce set-up time by virtually eliminating fixturing. Thermal-friendly construction assures high accuracy, even in the most complex applications. Options include the W (sub-spindle) version and an optional equal powered sub-spindle. It is designed to hand the part from one spindle to the other to complete milling and turning operations.

The Multus-B300 also features Okuma's THINC - OSP Control. THINC is Okuma's Numerical Control using the power of the Microsoft WINDOWS™ operating system to combine Okuma's OSP control with an open architecture PC-based operating platform. THINC enables plug and play along with access to almost any application and peripheral including factory management systems, and interfaces with bar coders, feeders, robots, probes and tool setters to help streamline production.

For more information, please contact Okuma Corporation at 704-588-7000 or visit [www.okuma.com](http://www.okuma.com).



# product focus



## ***Mastercam works for Jim Quinn. It has to!***

**"Some jobs are more demanding than others. With its new streamlined, simplified interface, Mastercam helps me get even the toughest jobs done right and on time. And we all know how important that can be."**

*– Jim Quinn (JQ), Engineer/CNC Specialist,  
Orange County Choppers, Montgomery, NY*

Find out how Mastercam works for Jim and  
Orange County Choppers. Visit [www.mastercam.com/occ](http://www.mastercam.com/occ)  
(800) 228-2877 in the US, (860) 875-5006 worldwide.

**Mastercam.X**  
Experience the Power of X

# PRECISELY GROUND. PRECISELY ROUND. PRECISELY ON TIME.

**AccuRod®**

\*\*\*\*\*  
**Ground and Polished Bar/Rod Stock**

## Capabilities

- Diameters from .008" to 5"
- Tolerances to .000050"
- Lengths to 20 feet
- Finishes to 3 Ra
- Straightening
- Polishing
- Bar end chamfering
- Saw cutting
- All materials

### *Pre Heat Treated Materials*

Our ready supply of pre-heat treated materials, such as 17-4PH, 15-5PH, 440C, 416SS and M2 can be cut, straightened and ground to your exacting specifications.



**Boston Centerless**  
*Precise in everything we do.*

11 Presidential Way  
Woburn, MA 01801  
Phone: 781.994.5000  
Fax: 781.994.5001  
E-mail: [info@bostoncenterless.com](mailto:info@bostoncenterless.com)

**PMTS Booth #828**



**ISO 9001:2000 Certified**

**Toll Free: 800.343.4111 • [www.bostoncenterless.com](http://www.bostoncenterless.com)**

## Mori Seiki

Mori Seiki's NT Series of integrated mill-turn centers employs both DCG™ (Driven at the Center of Gravity) technology and the box-in-box construction of the NH Series horizontal machining centers, along with the turret with a built-in milling motor from the NL Series CNC lathes. The machines also contain a B-axis that uses a DD (Direct Drive) motor.

Mori Seiki's focus on thermal displacement while designing NT Series resulted in the lower turret being located symmetrically in relation to



# product focus

the center of the spindle, forming a construction resistant to the effects of heat.

Maximum spindle speed is 5,000 rpm with a maximum tool spindle speed of 12,000 rpm. The machines' ATC (Automatic Tool Changer) features a tool-to-tool change time of just 1 sec. and a chip-to-chip time of only 3.4 sec.

For more information, contact Mori Seiki at 847-593-5400 or visit [www.moriseiki.com](http://www.moriseiki.com).





**ammo expo**  
See GibbsCAM at Booth #544

**SOUTH-TEC**  
See GibbsCAM at Booth #3242

**Bill Gibbs**  
Founder/President

## Multi-Task Machining to the Max.

“Multiple turrets. Multiple spindles. Using them efficiently can be a programmer’s worst nightmare. But it doesn’t have to be, not if you use GibbsCAM.

GibbsCAM MTM™ allows you to maximize your multi-task machine tool’s performance, optimizing tool synchronization and spindle transfers through an intuitive, easy-to-use graphical user interface. And GibbsCAM’s factory posts, made specifically for your machine tool, ensure what you see is what you machine.

Is your multi-task machine tool performing at its best? Contact us and we’ll show you how it can with GibbsCAM, the industry’s ease-of-use leader.”



### CNC programming solutions for:

- 2- & 2 1/2-Axis Milling
- 2-Axis Turning
- Mill/Turn
- Rotary Milling
- 4th- & 5th-Axis Advanced Milling
- 3-Axis Multi-Surface and Solid Machining
- Solid Modeling and Machining
- Multi-Task Machining
- Tombstone Machining
- Wire-EDM



**GibbsCAM®**  
Powerfully Simple. Simply Powerful.®

**Gibbs and Associates**  
323 Science Drive, Moorpark, CA 93021  
1-800-654-9399  
<http://tmw.GibbsCAM.com>

# WANTED B&S OG & 2G

**Chain Drive Machines that  
were rebuilt by Melbourne Eng.**



**Melbourne** rebuilt machines will  
have this tag on it with the date and code number.  
If you have a Melbourne rebuilt machine for sale,  
please call **Wendell Rogers**

**Automatic Screw Machine Tool & Supply Co.**

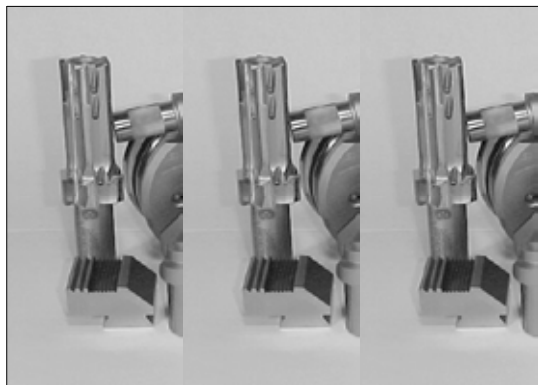
6775 Brandt Rd Romulus MI 48174

**800-832-6726** Fax 734-728-8020

[www.autoscrewamsco.com](http://www.autoscrewamsco.com)

E-Mail: [office@autoscrewamsco.com](mailto:office@autoscrewamsco.com)

## Need Special Tools?



## No Problem!

For over **90 years** the **Detterbeck's** have been solving,  
Special Tool Requirement Problems.

**You don't last that long without doing it right!**



Lester Detterbeck Enterprises Ltd.  
3390 U.S. East  
Iron River, MI 49935  
1-800-533-3328 Fax 1-906-265-6195

## DOOSAN (right)

The Puma MX features a turning spindle driven by either a 25 or 35 hp motor, generating speeds of 5,000 or 3,500 rpm respectively. A 12-station, non-lifting turning-tool turret indexes from station to station in 0.2 seconds. Live tools are powered by a 7.5 hp motor at speeds to 4,000 rpm. Polar coordinate, helical and cylindrical interpolations are standard. A 20 Hp motor drives the milling spindle, at speeds up to 10,000 rpm. Standard is a floating 40-station ATC. Tool-to-tool time is 1.5 sec. The Doosan Infracore Tool Monitoring System monitors spindle and axis load – both overload and underload – while the axis is feeding. Loads exceeding the wear settings either initiate an alarm or switch automatically to a redundant tool.

Puma mill-turns are available with dual spindles for parts as large as 21.7" diam. by either 40.2" or 60" long. A single-spindle/programmable tailstock model is also available. The controller is a Fanuc 18i-T.

For more information, please contact Doosan Infracore 973-543-2004 or email [jross@dhiac.com](mailto:jross@dhiac.com).



# product focus



## Mazak (left)

"Done in One" part processing on a Mazak Integrex e-machine enters its second generation with the new Integrex e-1060V/8 II. The Integrex e-1060V/8 II combines the Mazak's Integrex with the e-Tower, a communications system housing the personal computer linking with the new Mazatrol Matrix CNC and CCD cameras for monitoring and visually communicating machine status. The milling spindle on the Integrex e-1060V/8 II (50 hp and 10,000 rpm top speed) tilts up to 150 degrees for horizontal and vertical milling, plus angle boring or machining on multiple faces. Positioning accuracy in the C-axis is 0.0001 degrees in 360 degrees, or 3.6 million individual positions. Throughput of complex workpieces that would normally require CNC turning, horizontal machining, and vertical machining can be completed in a single setup on the Integrex e-1060V/8 II five-axis multi-tasking machine.

More information is available by visiting [www.mazakusa.com](http://www.mazakusa.com).



## KNURLING PROBLEMS?

With the most knowledgeable engineers and sales staff, Accu Trak has the answers to any technical question regarding the knurling process.



We have available for immediate delivery a huge variety of knurling wheels and holders in both "INCH" and "METRIC" sizes as well as custom knurls made to your exact requirements with the fastest delivery in the industry.

For more info on how to ensure your next knurling job runs smoothly



visit us online at  
[www.accu-trak.com](http://www.accu-trak.com)  
or call  
(800) 433-4933.

## Parts, Parts, Parts, Parts, Parts, Parts Attachments, Attachments Machinery

**BECHLER • ESCO • STROHM • TORNOS**

Over the recent years we have acquired the Swiss Automatics spare parts stock from Currier Machine Sales, Hirschmann Corp., Noble Machinery Corp., and Rombach Machinery. Items not in our stock will be located or reproduced for you.

**Over 100 Automatics in Stock • Request Our Stock List**



D6-R (SR) S/N 2121



R125



Bechler

### CNC Automatics Bought and Sold

North America's only machinery dealer with Tornos • Bechler and Esco factory trained engineers. We know and service what we sell.



NEW • MACHINE TOOLS • USED

SCREW MACHINE EXPERTS

145 Front St., Bridgeport, CT 06606 • 203/334-2197 • Fax: 203/334-1184

Send in your answer—quick!  
Fax Jill at 708-535-0103, or email at  
jill@todaysmachiningworld.com

## think tank

# Dodecahedron



A dodecahedron is a regular polyhedron made up of twelve pentagonal sides. If a dodecahedron that sits on a surface makes a 72-degree turn, it will occupy the same volume of space. That being the case, how many different possible orientations can one sitting dodecahedron have?

## Sharing Cakes (July):

Did each group get identical shares of the three cakes?

NO. The divisions of Cake 1 and Cake 3 are equal, but the red group gets bigger slices from Cake 2. If the number of chords (or cuts through the cake) is even and equal to four or more, the areas (or pieces of cake) are always equal. If the number of chords is odd or less than four, the areas will not be equal – unless the chords go through the center of the circle, as they do in Cake 1.

Who cut the cake right?



Cake 1



Cake 2



Cake 3

**Greg Roan** of BLP Products in Orlando, FL; **Kevin Siverd** of Metplas, Inc. in Natrona Heights, PA; **Steve Richards** of Yamazen, Inc. in Franklin, WI; **John Weber Sr.** of Weber Systems, Inc. in Menomonee Falls, WI; and **Gary Sewell & Lynne Weixel** of GS Design in Tallahassee, AL.

# postings



Noteable and newsworthy  
information and events for  
the month of October.

## PMPA Annual Meeting

Tucson, AZ

Oct. 12-16,  
2007

Westin La Paloma  
Resort

[www.pmpa.org](http://www.pmpa.org)

## SOUTH-TEC 2007

Charlotte, NC

October 2 - 4

[www.sme.org](http://www.sme.org)

## Discover 2007 Users Conference

With presentation from  
GE's Chief Information Officer

St. Louis, MO

[www.gefanuc.com/discover](http://www.gefanuc.com/discover)

Oct. 22nd  
thru  
Oct. 25th

## Gear Expo 2007

[www.gearexpo.com](http://www.gearexpo.com)

Oct. 7th  
thru Oct. 10th,

Detroit, MI

## Advanced Manufacturing & Technology Show

Dayton, OH

Oct. 24-25

[www.daytonamts.com](http://www.daytonamts.com)

## Canadian Manufacturing Technology Show

Oct. 15-18  
2007

Toronto, ON CAN

[www.cmts.ca/](http://www.cmts.ca/)

## Wisconsin Manufacturing & Machine Tool Expo

Oct. 9-11, 2007

West Allis, WI

[www.expproductionsinc.com](http://www.expproductionsinc.com)

## AMS

Global Conference

A chance to meet  
senior manufacturing  
execs from Auto Industry

October 2 - 3

Dearborn, MI

[www.sme.org](http://www.sme.org)

## Sputnik 1

(the first satellite)  
was launched  
by the USSR

Oct. 4, 1957

<http://history.nasa.gov/sputnik/>

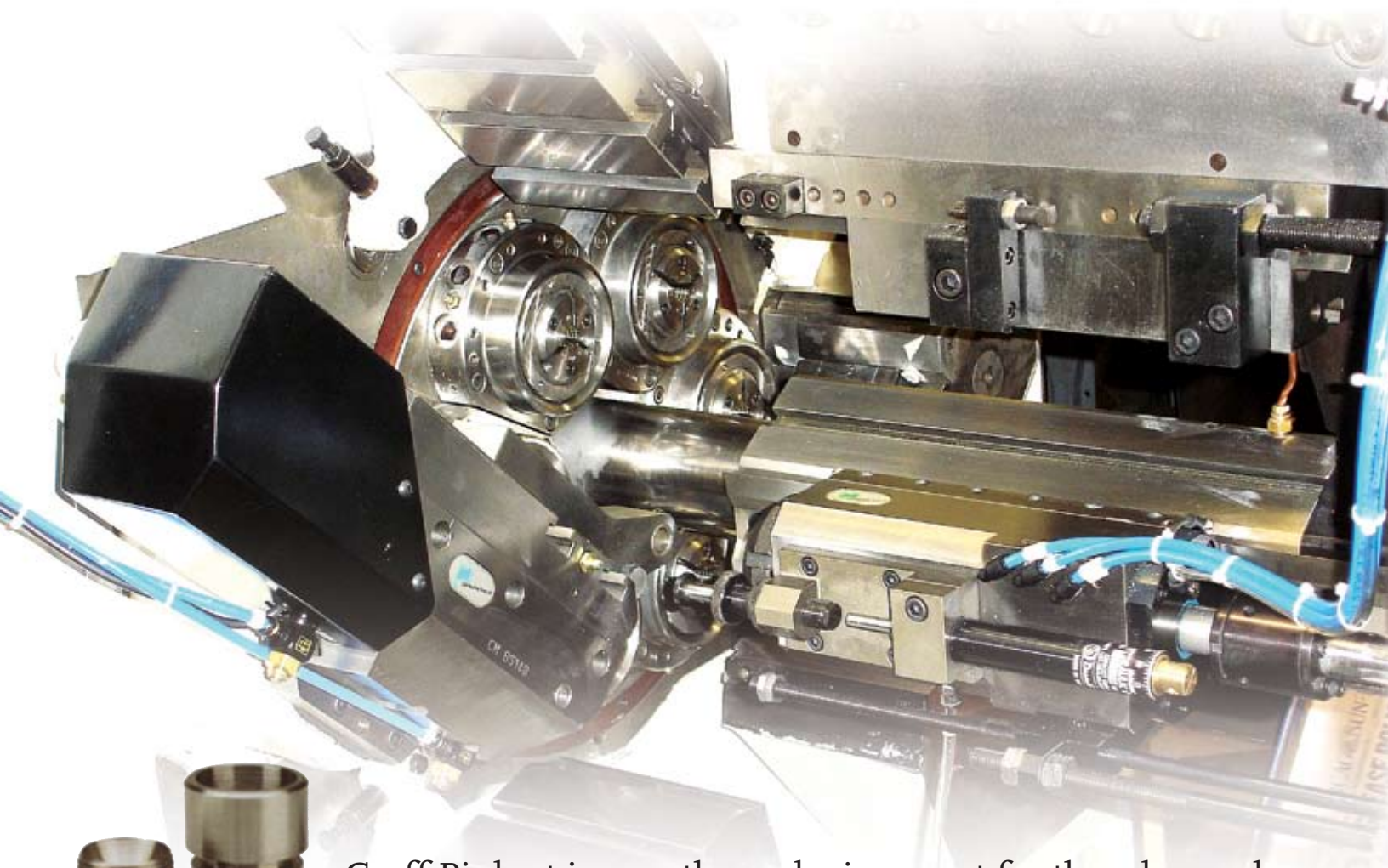
## The Jazz Singer

the first talking movie  
opened on

October 6, 1927

[www.imdb.com](http://www.imdb.com)

**With the C&M pickoff  
and backfinish combination,  
you can backdrill up to 1" in depth  
in free machining material.**



Graff-Pinkert is now the exclusive agent for the advanced  
and robust C&M pickoff and backfinish attachment.



**Graff-Pinkert & Company, Inc.**

**gpc**

No more wimpy backfinish chamfers.

# ad index



Today's Machining World

- 69 ACCUTRAK**  
Link with the pros in knurling and roll forming.  
Contact us at 800-433-4933 or visit [www.accu-trak.com](http://www.accu-trak.com).
- 10, 68 AMSCO**  
Amsco stocks a large variety of parts & tooling for B&S, Davenport, Acme, New Britain, and Lipe Bar Feeds. Call 800-832-6726.
- 45 AMT MACHINE SYSTEMS**  
Creator of the SercoCam System, increasing your productivity capacity.  
Visit [www.servocam.com](http://www.servocam.com) for details.
- 14 AUTOMATICS & MACHINERY**  
Buy – Sell – Consign – Auction used CNC equipment and more.  
Call 303-651-6545 or visit [www.automatics.com](http://www.automatics.com)
- 66 BOSTON CENTERLESS**  
Single source supplier of round bar material and grinding with unmatched quality and precision. Call 800-343-4111 or visit [www.bostoncenterless.com](http://www.bostoncenterless.com).
- 12 CHAMPION SCREW MACHINE**  
Your headquarters for tooling & replacement parts.
- 25 CNC SOFTWARE - MASTERCAM**  
Experience the power of X. Call 800-228-2877 or visit [www.mastercam.com](http://www.mastercam.com) to find out how Mastercam can work for you.
- 69 COMEX- CONT. MACH. EXCH. CORP.**  
Swiss CNC and cam automatics experts. Large stock of automatics, attachments and replacement parts. "Turnkey" including training is available. AMEA-CEA certified appraisals.
- 58 DAVENPORT MACHINE**  
A division of Brinkman Products, Inc. Call 800-344-5478 or visit [www.davenportmachine.com](http://www.davenportmachine.com).
- 16-17 DETROIT AUTOMATIC TOOLING**  
World's largest stock of threading equipment; new, surplus tooling and repair parts for multi-spindle automatics. [www.detroitautomatic.com](http://www.detroitautomatic.com).
- 57 EATON STEEL**  
Producers of cold drawn steel bars and distributor of hot rolled steel bars.  
Call 800-527-3851 or visit [www.eatonsteel.com](http://www.eatonsteel.com).
- 15 ETCO**  
The largest manufacturer of QUALIFIED SWISS INDEXABLE INSERTS & TOOLHOLDERS, specializing in grooving, turning, backturning, threading, boring & custom specials.
- 67 GIBBSCAM**  
Multi-task machining to the max. Call for your free interactive tour CD-ROM.  
Call 800-654-9399 or visit [smw.gibbscam.com](http://smw.gibbscam.com).
- 30-31 GRAFF-PINKERT**  
**46-47** Specialists in multi-spindle automatic screw machines and rotary transfers.  
**72** Family owned business for over 60 years. Check out [www.graffpinkert.com](http://www.graffpinkert.com).
- 29 HANWHA**  
Professional Swiss-style CNC turning centers. Call 262-373-1600 or visit [www.hanwhamachinery.com](http://www.hanwhamachinery.com).
- 49 HOFF HILK AUCTIONS**  
Call 612-521-5500 or visit [www.hoffhilk.com](http://www.hoffhilk.com) for upcoming auctions.
- 9 HURCO**  
A global automation company designing & producing interactive computer controls, software & machine systems. Call 800-634-2416 or visit [www.hurco.com](http://www.hurco.com).
- 68 LESTER DETTERBECK**  
Manufacturer of Special Cutting Tools, Tool Blanks, Cams and Tool Holders for the Turned Parts Industry for over 90 years. 1-800-533-3328.
- 80 MARUBENI CITIZEN-CINCOM, INC.**  
A joint venture company—Marubeni Tokyo & Citizen Watch Co., Ltd., builder of precision Swiss-type lathes.
- 25 METHODS MACHINE TOOLS**  
Dramatically reduce cycle times with Maier's Swiss-style CNC lathes.  
Call 978-443-5388 or visit [www.methodsmachine.com/62](http://www.methodsmachine.com/62).
- 2-3 NEXTURN - TYLER MACHINE COMPANY**  
The CNC Swiss machine leader. Call 603-474-7692 or visit [www.tylermachine.com](http://www.tylermachine.com).
- 26 NSK AMERICA**  
Upgrade your machines to flexible multi-purpose machining centers.  
Call 800-585-4676 or visit [www.nskamericacorp.com](http://www.nskamericacorp.com).
- 79 NTK CUTTING TOOLS**  
Great quality. Great precision. Widest selection. Call 866-900-9800 or visit [www.ntkcuttingtools.com](http://www.ntkcuttingtools.com).
- 24 OMNI-TURN**  
Engineered to order, built in America. Call 631-694-9400 or visit [www.omni-turn.com](http://www.omni-turn.com).
- 6 PARTMAKER SOFTWARE**  
PartMaker CAD/CAM greatly reduces part programming time for CNC Mills, Lathes, Wire EDM, Turn-Mill Centers & CNC Swiss-type lathes.  
Call 888-270-6878 or visit [www.partmaker.com](http://www.partmaker.com).
- 59 RAY H. MORRIS**  
Trusted supplier of OEM parts and tooling for all your machining needs.  
Call 800-243-0663 or visit [www.rhmmorris.com](http://www.rhmmorris.com).
- 51 SOMMA TOOL**  
Broaches, dovetails, hollow mills, quick-change insert tooling and more.  
Experience honest-to-goodness service. Visit [www.sommatools.com](http://www.sommatools.com).
- 27 SOUTHWICK & MEISTER**  
Manufacturer of collets, carbide guide bushings and allied tooling for ALL Swiss-type automatics. Call 800-237-0000 or visit [www.s-mcollets.com](http://www.s-mcollets.com).
- 43 STAR CNC**  
The industry's most complete line of advanced Swiss type CNC machines.  
Visit [www.starcnc.com](http://www.starcnc.com).
- 41 TSUGAMI/REM SALES**  
The perfect combination of speed and power. Swiss-type, mill-turn and machining centers. Call 800-808-1020 or visit [www.tsugamiusa.com](http://www.tsugamiusa.com).
- 37 UGITECH USA**  
Providing special steel solutions. With SMQ you are ready to run!  
Call 877-844-6387 or visit [www.ugitechusa.com](http://www.ugitechusa.com).
- 51 VARLAND**  
Specialists in high quality, precision barrel electroplating since 1946.
- 4 WILCOX STEEL**  
Cold bar steel drawn manufacturing. Committed to customer satisfaction, excellent quality and on-time delivery. Call 800-504-7452 or visit [www.wilcoxsteel.com](http://www.wilcoxsteel.com).

services

## Wickman Specialist

With more than 30 yrs. experience  
I can cater to all your needs.

Rebuilds, maintenance, problem solving, tooling,  
set-ups, training and more.  
Based in IL, will travel anywhere.  
Reasonable rates.

Call Brian Madden at  
(815) 282-5418 or

(815) 520-0375 (cell)

e-mail  
brian.madden@insightbb.com



Finally, the Best Source for Connecting  
Talent and Companies within the  
SWISS CNC INDUSTRY!

Companies - Post Your Swiss CNC Jobs!  
Employees - Find Your Dream Job!  
SwissCNCjobs.com

help wanted

## NEED A NEW JOB? NOW HIRING!

Don't Rely on any Tom, Dick or Harry!  
**LSI Manufacturing Solutions**  
Has placed more people in the Swiss CNC Industry  
than any other Firm! New Jobs Daily! More Satisfied  
Companies, More Satisfied Candidates!

**Too Many Job Openings to List!  
Send Your Resume Today!**

When You Need the Best,

**Contact**

**Lance Solak Bill Kubena**  
**LSI MANUFACTURING SOLUTIONS**

Ph. 330-273-1002 Fax 330-225-3985

**Jobs@LSIJOBS.com**

See [www.LSIJOBS.com](http://www.LSIJOBS.com) for the

**Largest Selection of Swiss CNC and  
Screw Machine Job Listings in the USA!**

The USA's Leading Firm Staffing the  
SWISS CNC & SCREW MACHINE INDUSTRY!

## PUBLIC AUCTION

**CNC & Automatic Machining Facility - Plant Closed**  
**WORTHINGTON PRECISION METALS**  
306 Beasley Drive, Franklin, TN 37064  
**Sale Date: Thurs., Sept. 27, 2007 at 9:00 AM**

**Featuring:** (5) RIS Rismatic 154-16 Station Rotary Transfer Machines w/PLC Controls (1995), (4) Okuma-Howa 2SP-20H 2-Spindle CNC Chuckers w/Fanuc 18i Control, Load & Unloaders (1996), Muratec MW16F 2-Spindle CNC Chuckers, Eurotech (Biglia) 710SL Quatroflex 6-Axis CNC Turning Center, Live Tooling, Sub Spindle Iemca Bar Feed (2001), Elb. Horz. Reciprocating Table, CNC Surface Grinder, (2) Mori Seiki ZL-15 CNC Turning Centers, (2) Mori Seiki SL-25 CNC Turning Centers, Chiron FZ-08S CNC Vert. Machining Center (2001), (4) 3/4" to 4" Acme Gridley 6-Spindle Automatics, (3) Citizens Cincom L-16 CNC Screw Machines Mini Turbo Bar Feed, (2) C&B CV5 10" x 18" Race Grinders, Tschudin GL-601 Centerless Grinder, (2) Cincinnati 340-20 Centerless Grinders, Thielhaus Micro Finish SF125-H8A Thru Feed Hone, Rand Bright HD-50 Tube Polisher, Micropulse MKII Induction Heater, (6) 5 to 20 Ton Miles & Ohio Vert. Broaches, (3) Prab & Intersource Chip Processing Systems w/Crushers, Wringers & Conveyor, (50) Cecor Chip Hoppers, MCP Chip Pelletizer, (3) Indramat & Govro Multi Head Rotary Drilling Machine, Kinefac SR-1 Spindle Roller, Crest Four Stage Dip Ultrasonic Washer, Milbrook 50W Rotary Drum Washer, 12' Manor Mesh Belt Washer, (3) Magna Lift Dip Washers, Chem Tool ECD Chemical Deburbing Lines, CFRS Coolant Recovery & Filtration System, Master Chemical Xyber Filtration System, Starrett RMS1620 Coordinate Measuring Machine, Hyster & Yale Lift Trucks to 6500 lb., Lantech Stretch Wrapper, Vidmar Cabinets, Pallet Racks, Steel Shelving & Shop Equipment. 12% Buyers Premium.

**CINCINNATI INDUSTRIAL AUCTIONEERS**  
Ph: (513) 241-9701 or Web: [www.cia-auction.com](http://www.cia-auction.com)  
Brochure, Lot Catalog & Proxy Bidding on Website!

auctions

# MAJOR HILCAST™ WEBCAST AUCTION

## TUESDAY, OCTOBER 23<sup>RD</sup> • BEGINNING AT 10AM LOCAL TIME

By order of the board of Directors

### FIRST CLASS CNC SWISS SHOP

#### Auction

Tuesday, October 23rd  
Beginning at 10am Local Time

#### Preview

Monday, October 22nd,  
9 am to 4 pm Local Time  
and morning of the sale

#### Auction & Preview

#### Midwest Location

Please go to  
[www.hilcoind.com](http://www.hilcoind.com)  
for more information

For more information  
Please contact John Butz: 407.478.8181  
or E-MAIL: [jbutz@hilcoind.com](mailto:jbutz@hilcoind.com)

### State of the Art CNC Swiss Turning Facility

**CNC TURNING CENTERS, LATHES, MILLS, INSPECTION,  
CNC MILLING, GRINDING, BROACHING, HONING, & FINISHING**

- (2) **Star** Model SR20R Turning Centers (2000), Live Tooling, Back Working, 12' IEMCA Bar
- (2) **Star** Model SB-16 Turning Centers (2004), Live Tooling, Back Working, 12' IEMCA Bar
- (3) **Star** Model SR20 Turning Centers (1995-1997), Live Tooling, Back Working, 12' IEMCA Bar
- (3) **Star** Model SA-12 Turning Centers (1997-2000), Live Tooling, Back Working, 12' IEMCA Bar
- (1) **Citizen** Model E-32 Turning Center (1994), Live Tooling, Sub-spindle, 2-Turrets, 12' FMB Bar
- (2) **Citizen** Model E25J Turning Centers (1993-1994), Live Tooling, Sub-spindle, 2-Turrets, 12' IEMCA Bar
- (2) **Citizen** Model L25 Turning Centers (1997), Live Tooling, Sub-spindle, 12' IEMCA
- (1) **Mori** Model ZL200SMC Turning Center (2000), Live Tooling, 2-Turrets, 2.5" Bar, Sub-spindle, IEMCA VIP70 Bar

*Large Quantity of Tooling for STAR, Citizen & Mori, Full Toolroom & QC Room*

*HARDINGE, SAWS, TURNMASTER, GAUGES, GRINDERS,  
FORKLIFTS, PALLET RACKING, COMPRESSORS,  
PARTS WASHER, OFFICE FURNITURE & MORE!*



# Hilco Industrial, LLC

Auctioneers • Liquidators • Appraisers  
31555 W. 14 Mile Road, Ste. 207 • Farmington Hills, MI 48334

To schedule an auction, please contact us at 248.254.9999 • A Buyer's Premium Is In Effect for All Sales • IL License #044000215

This is a partial listing only.  
For more information or to subscribe  
to our email/mailling lists, visit

## [www.hilcoind.com](http://www.hilcoind.com)

## help wanted

### Largest List Of Swiss Career Openings [www.MRGCareers.com](http://www.MRGCareers.com)

**SWISS CNC CELL LEADER**  
(coastal living, medical OEM, relo pkg., Citizen, orthopedics, program, leadership) up to \$90K – NORTHEAST MA

**SWISS CNC PROGRAMMER**  
(works in engineering, R&D, program, process development) up to \$32/hr (West of Boston) EASTERN MA

**MANUFACTURING MANAGER**  
(medical, orthopedics, implants, swiss, mill, edm, growing co., leadership) up to \$120K – SOUTHEAST PA

**SWISS MACHINIST**  
(medical OEM, surgical instruments, set up, edit, some programming is pref.) up to \$27/hr – NORTHERN IN

**SWISS MACHINIST**  
(aerospace, growing co., fantastic benefits, set up, edit) up to \$27/hr – NORTHEAST OH

**SWISS DEPT. SUPERVISOR**  
(lrg. medical OEM, over 20 empls, any brand, program, problem solve, great relo pkg.) up to \$29/hr – EAST CENTRAL MN

**SWISS MACHINIST**  
(401K & pension, growing co., set up, edit, program, Star or Citizen) up to \$35/hr + OT – BAY AREA – NORTHERN CA

**SWISS CNC MACHINIST**  
relo assist, great benefits, 1st shift, set up and edit) up to \$28/hr – SOUTHEAST PA

**SWISS CELL LEADER**  
(lrg. co., relo pkg., newer equipment, over 5 employees, set up, program, train) up to \$26/hr – EASTERN KS

**SWISS MACHINIST**  
(Chicago area, medical OEM, 5 openings, great for advancement, set up, program) up to \$29/hr NORTHEAST IL

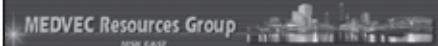


Contact

**Tom Medvec**

(330)722-5171 ~ Fax (330)722-7360  
[SWISSCNCJobs@MRGCAREERS.COM](mailto:SWISSCNCJobs@MRGCAREERS.COM)  
MORE JOBS ~ MORE OFTEN

### MRGCareers.com



#### ENGINEERING CAREER FAIR

**SCREW MACHINE ENGINEER**  
(degree not req., tool, layout, estimate, multi-spindle screw machine) up to \$75K – NORTHEAST OH

**SWISS CNC ENGINEER**  
(medical, program, tool, process, customer contact, great benefits, profit sharing) up to \$80K – NORTHEAST OH

**SCREW MACHINE ENGINEER**  
(huge salary, major benefits pkg., fluid power OEM, degree req., Acme, tool design layout) up to \$85K – SOUTHEAST PA

**MANUFACTURING ENGINEER**  
(automotive, APQP, high volume, huge plant, screw machine or CNC or rotary transfer, tool, process) up to \$80K – WESTERN MI

**SCREW MACHINE ENGINEER**  
(multi spindled screw machine, estimate, tool, process layouts, greater St. Louis, degree not req.) up to \$70K – EASTERN MO

**SWISS CNC PROCESS ENGINEER**  
(process development, tool selection, program, prove out tough jobs, OEM) up to \$70K – NORTHERN IL

**MANUFACTURING ENGINEER**  
(CNC, screw machine, process development, continuous improve, Lean) up to \$70K – NORTHEAST OH

**CNC PROCESS ENGINEER**  
(CNC turning, program, process, routings, process drawing, medical) up to \$72K – NORTHEAST OH

Contact Tom Medvec (330)722-5171  
Fax (330)722-7360  
[EngineeringJobs@MRGCAREERS.COM](mailto:EngineeringJobs@MRGCAREERS.COM)  
MORE JOBS ~ MORE OFTEN

#### Machinist Careers Opportunities

**HYDROMAT MACHINIST**  
(all shifts, growing co.) up to \$22/hr – NORTHEAST OHIO

**TORNOS MULTI-SPINDLE TECH**  
(focused on set up of new jobs & R&D) up to \$27/hr – EASTERN MO (St. Louis suburb)

**ACME SET UP MACHINIST**  
(2 PA companies, lrg. OEM's)  
YORK & PITTSBURG area locations – up to \$25/hr

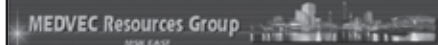
**CNC MILL LEADMAN**  
(medical 3-4 axis VMC's, set up & edit) SOUTHEAST MA

**SCREW MACHINE SET UP MACHINIST**  
(fluid power OEM) up to \$30/hr – BAY AREA, NORTHERN CA

**CNC MILL MACHINIST**  
(multi-openings, 1st and 2nd shift, aerospace OEM) up to \$22/hr CLEVELAND suburb – NORTHEAST OH

**DAVENPORT LEADMAN**  
(over 3 empl's, set up & repair, 20% growth, good benefits) up to \$27/hr – WESTERN NY

TOO MANY TO LIST ALL  
[www.MRGCareers.com](http://www.MRGCareers.com)  
Contact Tom Medvec (330) 722-5171  
Fax (330) 722-7360  
[MACHINISTS@MRGCAREERS.COM](mailto:MACHINISTS@MRGCAREERS.COM)  
MORE JOBS ~ MORE OFTEN



### All NEW! Management Openings

**PLANT MANAGER**  
(over 100 employees, safety products, Lean, screw machine, CNC major corp.) up to \$98K – NORTHEAST OH

**QUALITY MANAGER**  
(growing, auto., APQP, high volume, turnings, leadership, TS-16949) up to \$88K – (North of Detroit) SOUTHEAST MI

**ENGINEERING MANAGER**  
(screw machine, CNC, high volume, project leadership, APQP, over 6 engineers) up to \$95K – (North of Detroit) SOUTHEAST MI

**OPERATIONS MANAGER**  
(medical, orthopedics, swiss CNC, solid machining experience, planning, leadership, systems) up to \$120K – SOUTHEAST PA

**PLANT MANAGER**  
(high volume, CNC, screw machine, rotary transfer, automotive, operations, planning, over 90 employ.) up to \$105K – SOUTH CENTRAL MI

**PLANT MANAGER**  
(over 80 employ's, contract shop, Acme, Davenport, Euroturn, Schutte, Hydromat, leadership, Lean) up to \$100K – NORTHEAST OH

**TOOLROOM/MAINTENANCE MANAGER**  
(screw machine, cutting tools, manage, project management, purchasing) up to \$75K – NORTHERN SC



[www.MRGCareers.com](http://www.MRGCareers.com)  
Contact Tom Medvec

**(330)722-5171**

Fax (330)722-7360

[ManagementJobs@MRGCAREERS.COM](mailto:ManagementJobs@MRGCAREERS.COM)  
MORE JOBS ~ MORE OFTEN



### WHAT MAKES MRG #1

- More than 20 years developing contacts.
- Professionally trained negotiators.
- More job openings than our competitors combined.
- Technical experience to find the right job.
- Knowledge of our clients' requirements.
- The only firm with new job postings each week.
- Networked with other firms throughout the USA.

### WHY MRG?

- Greater exposure to top companies.
- Many clients are exclusive to MRG only.
- Retained by hundreds of top companies.

[www.MRGCAREERS.com](http://www.MRGCAREERS.com)

Contact Tom Medvec (330)722-5171  
Fax (330)722-7360  
[Recruiter@MRGCareers.com](mailto:Recruiter@MRGCareers.com)

For Sale

## Polyurethane CNC Lathe Spindle Liners

**Maximize Machining Control**

10530 E. 59th Street  
Indianapolis, IN 46236  
Ph: 317.823.6821 • Fax: 317.823.6822  
Toll Free: 877.240.2462

Visit us on the internet at  
**www.trusty-cook.com**  
email: trustycook@sbcglobal.net



Collets, bushings, barloader  
collets and allied tooling for all  
Swiss-Type Automatics  
Call Southwick & Meister, Inc.  
203-237-0000



Or visit [www.s-mcollets.com](http://www.s-mcollets.com)  
Serving the Swiss-Automatic  
industry for over 50 years!

**REGO-FIX®**  
Swiss Precision Tools

[WWW.REGO-FIX.COM](http://WWW.REGO-FIX.COM)  
800.999.7346

**SOMMA TOOL CO., INC.**

Call us for Broaches, Dovetails, Holders, Quick  
Change Insert Tooling, Cutoff Blades, and more.  
Quick quotes on specials too!

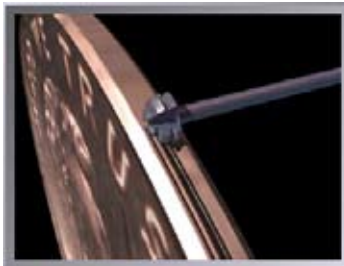
PHONE: 203.753.2114 | FAX: 203.756.5489  
[www.sommatool.com](http://www.sommatool.com)

## AM INDUSTRIAL - Cleveland, OH

Chip Processing/Coolant Filtration:  
Complete Prab chip wringer,  
American Pulverizer Crusher, Filtertech  
coolant filters, Barnes chip filters

Phone: (888) 325-5738  
Email: [sales@amindust.com](mailto:sales@amindust.com)

## Highest Quality Precision Cutting Tools



Reamers/Drills • Thread Mills  
Thread Whirl Inserts  
Dovetail Forms, Shaves, Flatforms  
All Special Form Tools • Quick Quotes  
Carbide, HSS, Cermet  
Tool Design Service and Engineering  
Tight Tolerances  
Micro-Medical Tooling

[www.completeool.com](http://www.completeool.com)  
[www.completeool.net](http://www.completeool.net)  
email: [info@completeool.com](mailto:info@completeool.com)  
763.571.4242 • Fax: 763.571.4406  
7760 Elm Street N.E.  
Minneapolis, MN 55432

**Quality • Service • Value**

**Complete**  
Tool Grinding

**Miyano**  
The World Leader in Precision

High-Performance Turning Centers  
for Complex Applications

[www.miyano-usa.com](http://www.miyano-usa.com)

**The Tooling Connection, Inc.**

Master Rebuilders of National Acmes since 1976  
Ph: 419-594-3339 Fax: 419-591-2000  
Email: [toolco@bright.net](mailto:toolco@bright.net)  
[www.toolingconnection.com](http://www.toolingconnection.com)

**www.greentechnologies.biz**

Non-marring Feed Fingers & Pushers  
For All Automatic Screw Machines



863.614001  
Greene Technology, Inc.

## RAY H. MORRIS CO.

The Industry Leader

Parts, Tooling,

Accessories, Davenport, Brown &

Sharpe, Multi & CNC

Tempered Sheet Steel Round

Edge Flat Wire

**800-243-0662**

[www.rhmmorris.com](http://www.rhmmorris.com)



**New Market Products Co., Inc.**  
800-238-2240 or 607-292-6226

A PRE-SET TOOL NO SYSTEM TO SAVE  
SCRAP, TIME & MONEY

- Dovetail Form Tool Holder
- Compact Right Cutoff Holder
- Ultra Quick Change Shave Tool Holder

**QUALITY you can count on! ...  
a proven REPUTATION!**

**OIL MIST & SMOKE  
IN YOUR SHOP?**



**ARE YOUR  
FLOORS SLIPPERY  
AND DANGEROUS?**

[www.mistcollectors.com](http://www.mistcollectors.com)  
Tel: 1-800-645-4174

**Great For Swiss CNC's  
and Screw Machines**

**LICO CNC**  
Bar & Chucker Automatics

**Lipoco Enterprises, Inc.**  
**800-364-1641**

[www.lipoco.com](http://www.lipoco.com)

## For Sale

**Mini-Skimmer™ Oil Skimmers**  
Remove Tramp Oils From Coolant!

- 30 Stock Units Types and Sizes!
- 5 Standard Belt Lengths
- Sold Since 1990!



**FREE CATALOG!**

**Wayne Products Inc.**  
Web: [www.wayneproducts.com](http://www.wayneproducts.com)  
Email: [info@wayneproducts.com](mailto:info@wayneproducts.com)

**SLATER TOOLS™**  
Number One for Rotary Broaching

**ROBUST BRANCHES & FINISH MILLERS**

- Fast, accurate method of producing polygon forms while the workpiece is rotating
- Internal and external toolholders available

**FAST DELIVERY ON ALL POLYGON FORMS**

**CENTER LINE DISTANCE**

- Precision bearing placement for greater rigidity
- Independent inner bearing provides rigidity while allowing center shaft to rotate
- Spring loaded design compensates for workpiece center variation

**SHAPING SQUARE TOOL HOLDER**

- Features built-in radius diameter within 7°.0005
- Complete tool modification from set and working operation
- Fluting body compensates for tolerance spindle error
- Easy jaw design gives easy tool removal
- Unique block and function available

**ORDER FACTORY DIRECT**  
**888-488-8000**  
24 Hour Fax: 508-463-9830  
[www.SlaterTools.com](http://www.SlaterTools.com)  
44728 TRIMITY • CLINTON TOWNSHIP, NJ 08848


## BROWN & SHARPE SPECIALISTS

COMPLETE LINE OF  
NEW REPLACEMENT  
PARTS FOR BROWN & SHARPE  
AUTOMATIC SCREW MACHINES

Competitive Pricing  
Same Day Shipping  
HYE-TECH MACHINE  
ENTERPRISES INC.

Toll-Free: (888) 484-9900  
Fax: (631) 287-3638  
Web: [www.hyetechn.com](http://www.hyetechn.com)

**Precision Grinding**



- BioDur® 316LS stainless
- BioDur® 108 alloy
- BioDur® TrimRite® stainless
- Custom 455® stainless
- Custom 465® stainless
- Titanium alloys
- Tolerances to .000050"
- Finishes to 3Ra

**Boston Centerless**  
Precise in everything we do.

11 Presidential Way  
Woburn, MA 01801  
Phone: 781.994.5000  
Fax: 781.994.5001  
[info@bostoncenterless.com](mailto:info@bostoncenterless.com)

**ISO 9001:2000 Certified**

800-343-4111 • [www.bostoncenterless.com](http://www.bostoncenterless.com)

BioDur, Custom 455, Custom 465 and TrimRite are registered trademarks of CRS Holdings, Inc. a subsidiary of Corporate Technology Corporation.

**help wanted**



**Your Best Chili Recipe!**


Our December  
"How it Works" will feature

**THE BEST CHILI  
IN THE WORLD.**

If you think you've got a recipe  
you'd like to share.....  
send it on in!

Please submit recipes to  
[jill@todaysmachiningworld.com](mailto:jill@todaysmachiningworld.com)

Please enclose your name,  
company, and any stories or  
anecdotes about your chili recipe.



**ROTARY TRANSFER  
MACHINES**

TYPE 60-15  
ALL MACHINES UNDER  
POWER IN OPERATION

15 STATION CENTER CHUCKING  
AUTO PICK & PLACE (LOAD/UNLOAD)  
DRILLING, MILLING, TAPPING,  
MULTISPINDLE HEADS  
HIGH PRESSURE  
COOLANT SYSTEM  
AND MORE

CONTACT: CARLOS MARTINEZ

**HILITE INTERNATIONAL**  
CARROLLTON, TX  
PHONE 972-389-4109  
FAX 972-389-4127

LOCKING ADJUSTING NUT AND WRENCH  
(LOW COST SERVO REPLACEMENT)

**Call Nowak Products, Inc.**  
800-423-0970  
email: [nowak@nowakproducts.com](mailto:nowak@nowakproducts.com)



# afterthought

## Pockets of Memory

It's 14 years this week since my mother, Thais Graff, died. I memorialize her on the date in the Jewish calendar, my sister does it on the secular calendar, and my brother Jim goes either way.

My memory of her fades a little every year, and I hate that. I keep photographs of her on our home refrigerator, on a cork bulletin board of family pictures, and in collages made by my wife and daughter. They help me remember her face, but her touch and smell continue to drift off.

I take a brief instant every morning to imagine her, to hear her voice, to connect a mental smile to the name "mom" that grows silently in my flat garden of memory.

My mother gave me that one most precious quality that every kid yearns for - full, unflinching love. For that I will be forever grateful. I never remember her criticizing me, although

a double header.

My mom never worked a job. She dropped out of college to marry my father in 1941 to the initial chagrin of her parents, who wanted her to marry another suitor whose parents had more money and social prominence than my dad's immigrant family. My father's charisma and focus bowled her over, and eventually her parents acquiesced to the marriage.

My mother truly loved my father, but he expected and demanded that she cater to him and revolve around his orbit. This worked well during the childrearing years as she embraced the motherhood role wholeheartedly, but it left her unfulfilled and dreary as the kids left the house. She said she wanted a career but my father frowned upon that, and she did not have the energy and inner confidence to go for it.

So by her mid to late 40s she was living a comfortable downhill life, looking for confirmation from her children and husband. Her health began to slide, and the joy she took from every day ebbed.

My wife Risa and I lived within walking distance of my parents for 10 years, and we used to come to wonderful Friday night Sabbath dinners and warm holiday feasts. My mom was a superb cook and baker, and she taught me how to smell a cantaloupe and pick out a great peach.

She made sweet and sour meatballs to die for and perfect apple pies and yeasty schnecken.

My mom was smart and literate. She could have done a lot more things in her years and been a happier, more fulfilled woman over the last third of her life. But for me, she was the wonderful loving mom who was there for me when I needed her most.

"My mother gave me that one most precious gift that every kid yearns for - unflinching love."

she occasionally looked askance at my wardrobe choices. When I played baseball or basketball or ping pong competitively, she was my biggest fan.

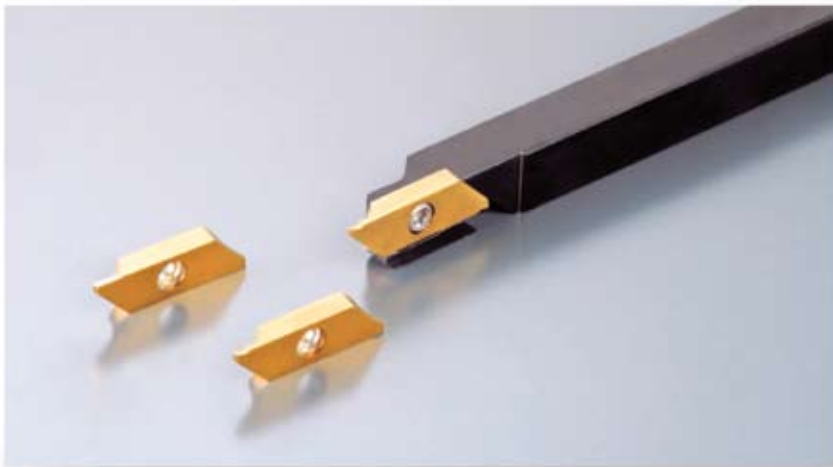
The most prominent sound bite in my readily available oral memory is her yelling from the bleachers at a high school basketball game, "Give the ball to Lloyd." She always thought I would make every shot. If I missed, she believed I got fouled.

My mom gave me one of my biggest gifts as a kid - her passion for baseball, particularly the loveable but awful Chicago Cubs. She had grown up within walking distance of Wrigley Field, and occasionally went to games with her father, Sam Kassel, a devoted and knowledgeable Cub fan who had avidly followed the team from the turn of the century, when they were the best team in the Major Leagues.

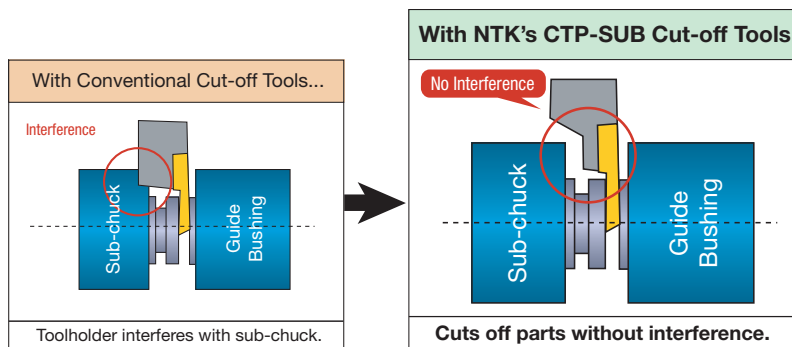
My mom and I went to many ballgames, especially Ladies Days on Fridays, to root for Ernie Banks and Ron Santo and Billy Williams, and before that - Hank Sauer and Andy Pafko. How we loved Ernie. His motto was "Let's play three" when other players were complaining about suiting up for a day game or

# CTP-SUB Series Cut-off Toolholders

*When it comes to the important criteria,  
**NTK CTP-SUB** series always makes the cut.*



## *For parting-off small parts*



- Allows cut-off of small (short) parts near guide bushing for maximum rigidity.
- Cuts off parts as close as .177" (4.5mm) to sub-chuck, even with right-hand tools.
- Provides enough clearance for sub-chucks as large as 1.417" in diameter.

## NTK CUTTING TOOLS

Division of NGK Spark Plugs (USA), Inc.

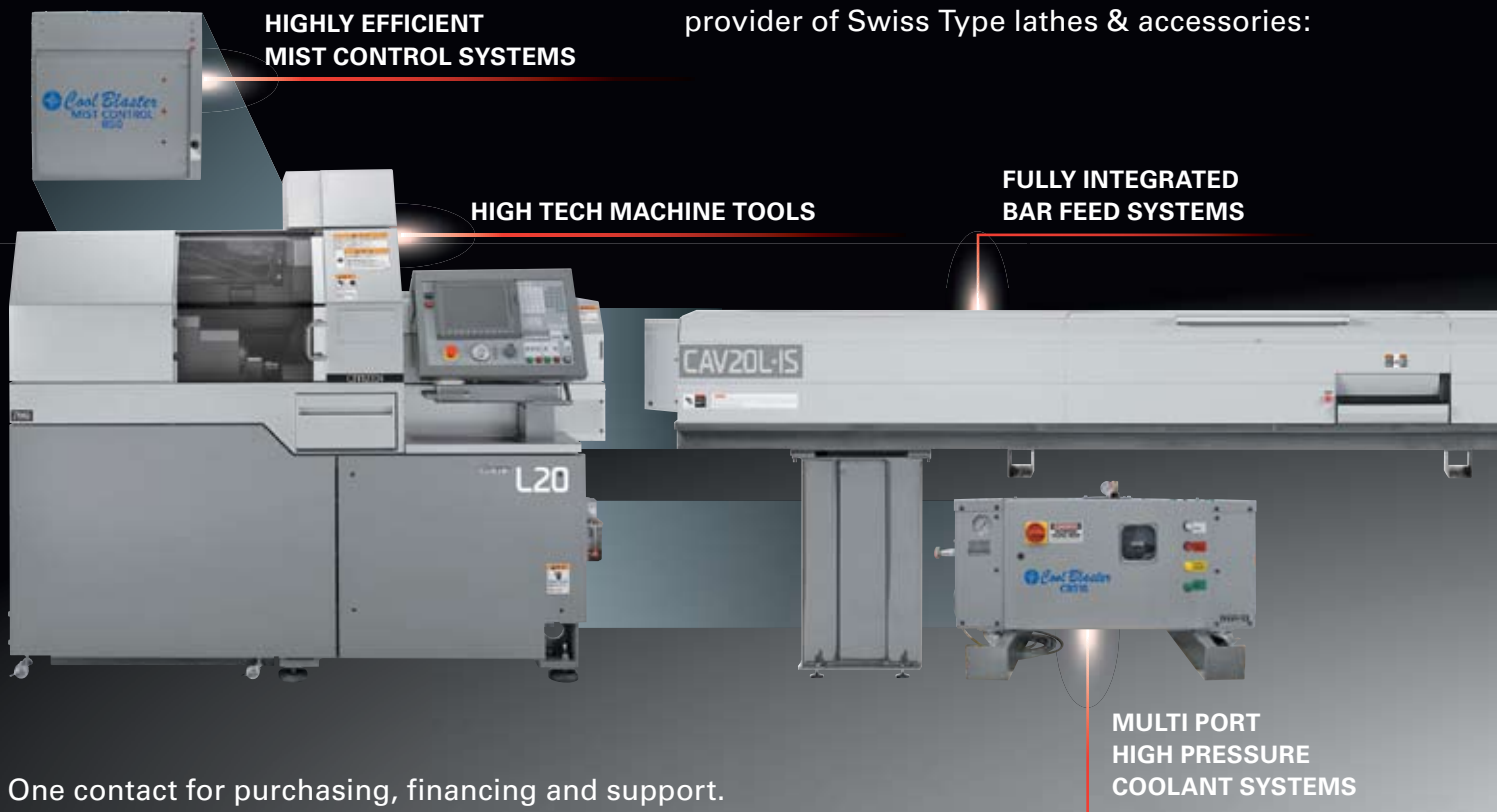
46929 Magellan Dr., Wixom, MI 48393 U.S.A.



CINCOM ADVANTAGE  
CINCOM ADVANTAGE  
CINCOM ADVANTAGE

# Technology Support Financing

Marubeni Citizen-Cincom is your single source provider of Swiss Type lathes & accessories:



One contact for purchasing, financing and support.

Citizen machines and these accessories are exclusive products provided by Marubeni Citizen-Cincom and Citizen Machinery America. Financing provided by MCC Capital.

# Cincom

[www.marucit.com](http://www.marucit.com)

Marubeni Citizen-Cincom Inc.

Contact Marubeni Citizen-Cincom or your local Citizen distributor and learn more about the **CINCOM ADVANTAGE**

Allendale, NJ  
(201) 818-0100

Elk Grove Village, IL  
(847) 364-9060

Fountain Valley, CA  
(714) 434-6224