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# Today's Machining World

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Price Cut Usage?

June 2007 volume 3 issue 6

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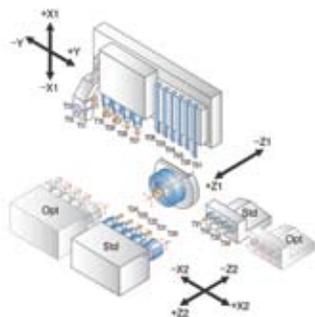
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# in this issue



Today's Machining World

June 2007 volume 3 issue 6



## Departments

7 Editor's Note

11 Forum

13 Swarf

20 Book Review  
*The Persian Puzzle*  
by Jerry Levine

22 Fresh Stuff

41 Shop Doc

42 Next

44 One on One

56 Product Focus  
Vertical Machining Centers

66 Think Tank

67 Postings

68 Changing Shocks

78 Afterthought  
*Matchmaker, Matchmaker*

73 Ad Index

74 Classifieds

## Features

### 32 Stainless Steel

Will the rising price cut usage? by Lloyd Graff

### 48 How it Works

Material analysis for the machine shop by Barbara Donohue



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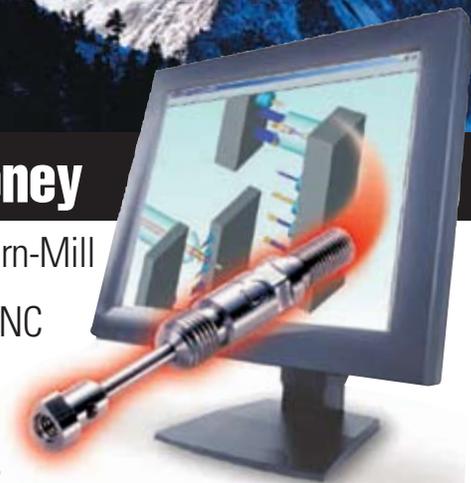
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# editor's note

## The Monthly Odyssey

On May 12th I had the opportunity to interview Michael Lewis. Michael wrote *Moneyball* and *The Blindside*, two books we have reviewed in *Today's Machining World*.

Why do we have a book review column? Isn't this a nuts and bolts, feeds and speeds magazine?

The readers of *TMW* are really smart and have lots of interests. Our task is to do a publication each month which engages you on several levels, both personal and professional. I know a lot of you love sports. It's one of the few things that bind this world together. It gives us a common language to fall back on when we are looking to connect.

Our puzzles are another element of the magazine that connect the disparate people who populate the machining world. I know they are not for everyone (personally, I am always stumped), but if one third of you like them, that's fine.

What I am trying to do in my writings is to connect business with personal experience, to demystify it and make it understandable.

I am no engineer or setup person, but I have immersed myself in the machining and metals world for so long that I have been infused with the lingo, and I comprehend what it takes to execute in an unforgiving manufacturing climate.

As a business owner and manager, I have to make the awful decisions that dramatically affect a lot of folks' lives.

My life cuts through the conventional boundaries of most magazines, and *TMW* reflects the unusual soufflé of my weekly experiences. I talk to you as a peer, a customer and a reader.

The world is coming at us from a thousand directions.

Join with me in this monthly odyssey. It will be unpredictable. Such is life.

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.

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### Reality Check

I love your publication, but your Hoffa interview was a joke; Hoffa always preaches to his choir, and he's not in touch with reality. He thinks the free choice act is a good idea and is in disbelief of reverse intimidation from the union. Why did you throw him all those softballs? I think the teamsters definitely have their place, and they do a great job, but I question some of Hoffa's rhetoric. Think hardball when interviewing these propagandists in the future. *Today's Machining World* is a well-rounded mix of all concerns.

Chuck Dover  
Moldcraft Company  
Westchester, PA.

### Pushing the Envelope

It was very interesting to see that some of the same issues and concerns facing the Teamsters are shared by owners of small businesses. In the past, almost all issues had business owners and union bosses 100 percent polarized. Your magazine continues to push the envelope with thought-provoking articles, interviews and opinions.

B. Scott Eighthmy  
American Turned Products  
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### Still Steamed

I just reread your interview with Hoffa. I'm still steamed that you even gave him the opportunity to pollute your magazine with his union propaganda.

At one time, unions did protect the worker. Now they are interested in protecting the stream of dues so they can keep paying themselves huge salaries and buying more political power with forced dues from hard working people. Hoffa complains about Korean imports. If the UAW had allowed its members to be productive instead of inefficient yet highly paid they might have prevented the consumer from discovering Honda, Toyota and Kia. The Big Three management is complicit as well because they went through the motions of bargaining, knowing that the cost of whatever they settled for would be passed on to the consumer. The result is fewer

than half of the Big Three's auto workers still have jobs while Toyota had a 12 percent sales increase last month.

Hoffa talks about the "Employee Free Choice Act" making sense to him. Well of course! Management would have no way to counter the lies, coercion, false promises and intimidation used by many unions to obtain signatures. The secret ballot would be out. As you know, most of the old line machine tool builders were driven into bankruptcy by the unions, including Davenport. They wanted one man, one machine on fully automatic equipment, driving costs sky high and crippling the company's ability to compete with foreign builders. I'm proud we are now union free, highly productive and producing top quality products at very competitive prices.

"The terrible tax cuts that Bush enacted" are the reason the economy is still pumping out jobs in spite of the loss in manufacturing jobs. Pro-business is not a bad thing. It's what keeps the United States competitive, creating new jobs and taking care of our employees. To say Republicans are the cheap labor boys is totally untrue. Most lost jobs have gone because of big labor's high costs and inefficiencies.

The most rapidly growing segment of unionized workers is the government worker, and the reason your taxes are so high is because of union control of the legislative process. The costs the legislators have allowed to keep the unions off their backs are passed on to the taxpayer. Every state, county, city, town and village is desperate for money because of the union control of everything, not just wages. They have a say in who and how almost everything is done. In New York we have what's known as prevailing wage, which requires contractors to pay non union workers the same as union workers. The contractors don't care because they just add in the extra cost, which means they get a bigger piece of the total.

If you think I'm anti-union you are wrong. I support the rights of employees to organize. We need a national Right to Work bill to force unions to earn the right to represent workers and give them a choice of whether to join or not.

Bob Brinkman  
Brinkman International Group, Inc.  
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## The Precision Machining Technology Show (PMTS),

held April 24-26 in Columbus, Ohio, was a wonderful schmoozing opportunity for those of us in the grease fraternity.

The mood at PMTS was upbeat, the crowd was – well, not a lot of people, but those who showed up were real prospects. The Tech Conference was great; 200 exhibitors showed. And the coffee bar at the *Today's Machining World* booth was fabulous. Couldn't ask for more.

This young show fills a hole in the show calendar for the machining guys, particularly in the Midwest. It is no IMTS, but it showcases the metal turning world, particularly the extended family of the screw machine core.

The screw machine guys have been reincarnated as Swiss CNC practitioners and the Swiss guys were there from A to Z. PMTS is a critical show for the Swiss sellers, and the smart ones treated it as such. Citizen, Star and Tsugami played their roles as industry leaders. Tornos had a superb location, but became the focus of ridicule and rumor because Scott Kowalski, its American top gun, didn't come to Columbus.

*(Continued on next page)*

## CNC SWISS

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

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Tsugami BS-32CII, 2000, 1¼", 8 Rotary Tools, Sub-Spindle, IEMCA



CITIZEN L(5)20VII, 1998, ¾", 4ROT/6OD/3ID/3BW, Barfeed



Miyano BND-42T5, '00, 1½", 12 Station Turret, Sub-Spindle



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(Continued from previous page)

If this had been another builder it would not have been such a big deal, but from my perspective Tornos has baffled the user and dealer community by its behavior in the past several months. First they gave the multi-spindle line to Hydromat's Edge Technology. They fired Tom Dierks and brought in a guy whose experience is in EDM equipment. They sort of moved the North American headquarters to Chicago from Connecticut. They pulled all of their print advertising from all the trade publications. Then they fired most of their dealers and brought in folks who are more skilled at selling EDM machines than Swiss CNC lathes.

Perhaps their thinking is that you have to destroy it before you can rebuild it, but there were a lot of Tornos devotees who were wondering "who's on first?" Rumors were rampant that Tornos would be sold before the next PMTS show to George Fischer – or was it George Soros? But even if your game is to sell the firm, this seemed goofy show behavior.

The Swiss CNC business is crowded already, but now Nomura is going to make a push under the Haley family's Gosiger flag. Nexturn, the Korean manufacturer, has really solidified its distribution with Tyler in New Hampshire, Manhurin in France is back in the game with TPS of Wisconsin, Hanwha has new management, and Ganesh keeps gaining market share with its less expensive but solid approach.

PMTS is a vital show for the Swiss guys, not because they are going to sell a million machines, but because the show-goers are consciously and unconsciously ranking the plethora of players.

I talked to a prominent member of the DMG delegation, who gave me an interesting assessment of the show. He doubted that his German bosses would spend the money to come back to PMTS because the head count of the show would not impress them. He said he came because his sales people, who directly touch the user community, strongly advocated that DMG should exhibit. They know that in this machining world, appearances are important, even though the buying data might indicate that PMTS is just another show that a broad range company like DMG probably cannot justify. This is a case where the DMG hierarchy may not comprehend why they can be so strong internationally and relatively weak in the U.S. DMG's behavior in the market continually expresses indecision and lack of consistency.

In my opinion, PMTS is significant well beyond its number of visitors. An exhibitor at Columbus has the opportunity to advance its image and signal that it is a legitimate contender. I thought Servo-Cam did a terrific job of re-igniting interest in its product by making a technologically-advanced machine. They earned a buzz.

Index continued to look the part of the industry technology leader while maintaining the softer, kinder

# swarf

demeanor that Olaf Tessarzyk has worked hard to impart.

PMTS is not only about orders taken, it is about leadership and buzz. The firms that understood those principles both going in and going out were the winners of Columbus. The ignorant ones not only lost, they lost big.

## I met Tyler Shinaberry at PMTS.

He is the kind of kid who gives me faith in the future of the industry and the country.

He's only 18 years old, but he often contemplates what his legacy will be.

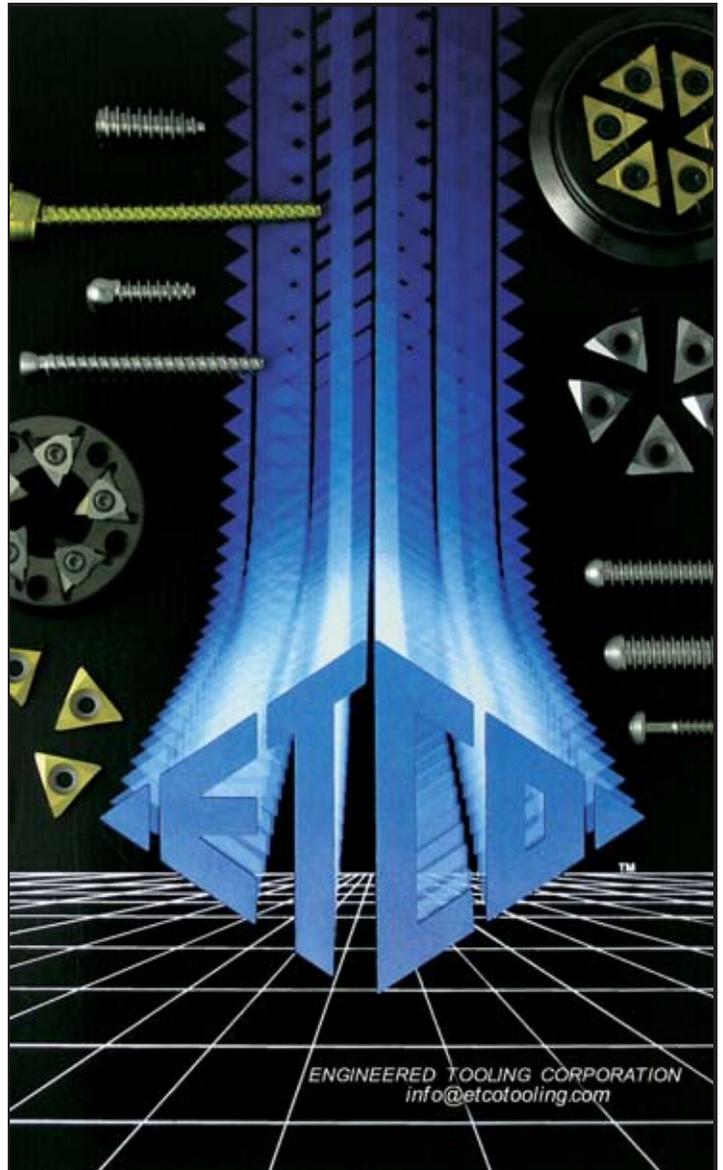
Tyler grew up on a farm in rural central Ohio. He's a full-time student and part-time entrepreneur, but this will likely switch around soon. His current business plan is to do CAD/CAM grunt work for a stable of machining firms with low overhead semi-students working out of a wired barn. This is akin to Silicon Valley outsourcing to India with less aggravation because everybody speaks American.

I think this business is a temporary stopping point for Tyler. Deep in his heart he really wants to be King, or Gates or Jobs, at least.

What I love about Tyler Shinaberry is his boundless ambition coupled with an alabaster naivete. This kid does not do cynicism. Since PMTS he has become a blogger on Swarfblog. He probably could write the column better than me, so it's great to have him as a regular contributor.

When I meet young people like Tyler or Andy Phillip and Onik Bhattacharyya of Microlution, or job shop builder Denny Grice of R & L, or software company builder Hanan Fishman of Partmaker, I start to feel really hopeful about the machining world.

For all the baby boomers who are hanging it up, I say the amazing opportunities are out there for those who would be King. Go Tyler Shinaberry.



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## Chrysler is going to Cerberus.

China is investing \$3 billion in Blackstone. Delphi is controlled by private equity firms, particularly David Pepper's Appaloosa. The Ford family has bet the farm on Alan Mullaly to save its behind, but would you bet that a private equity group won't control it in three years? Automotive in America is going private. Boo-yah!

The Daimler sale of Chrysler is instructive. The suckers of Stuttgart are essentially paying Cerberus to take Chrysler off their books. Magna of Canada desperately wanted it, but they had to invite a Russian metals mogul (AKA the Russian Mafia) into the deal to raise capital. The Daimler guys were only interested in the stock price (it has skyrocketed since they announced they were going to dump Detroit), so they were not going to do a deal with a team with unsavory connections. When the UAW came onboard after Ron Gettelfinger heard that Tom LaSorda, almost one of the family, was going to be the operating head, the deal was almost a fait accompli.

Private equity loves a deal like Chrysler because the risk reward is heavily tilted in their favor. Cerberus, from my

viewpoint, is getting Chrysler for less than liquidation value. If slash and market does not work, they can split the company and sell off everything but Jeep, or sell Jeep and keep everything else.

Cerberus has the agility, guts and connections to win big on Chrysler.

## Canadian manufacturers face an

**uphill climb with an appreciating currency and an expensive social safety net system. But the Canadian Federal government has concocted a helpful gambit to enable its manufacturing business to hang in there.**

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Canada is also liberalizing depreciation allowances for purchasing equipment, enabling those who know how to work the system to stay competitive.

Canadian firms face the same kind of labor imbalances we see in the U.S. Machinists are hard to find. I talked to Bob Stokes of Stegg Mfg. recently. He told me business is great, but because of his people shortage he's looking to buy firms in the U.S. where he sees more room to expand. The grass is always greener.

## According to *Investors*

*Business Daily* newspaper, which keeps a rolling tally on what's hot and what's not in stocks, the top ranked category of the 197 they measure is steel and metals fabrication.

This is important news because it means Wall Street is making big bets on companies that make things for ethanol and water filtration and a myriad of other infrastructure

plays. Tubing and pipes and valves that facilitate how fluids flow are red hot (check out Parker Hannifin stock). Provincial Americans think we are the world with our one to two percent growth rate, but the Rest of the World is growing like topsy. China is growing at 11 percent a year and creating an infrastructure for power and water almost from scratch.

The hottest company in *Investors Business Daily's* 100 stocks in mid-May is Synalloy, a firm based in Spartanburg, South Carolina, making and distributing steel products.

If I was looking for new customers in the machining world, this would be a logical area to nose around. We all tend to replay last year's playbook (last decade's?) instead of looking for the next bone screw maker or hard drive maker to ally ourselves with. The money is usually with the next big thing, not the last one.

Applied Materials, the company that has traditionally made the machines that built the Silicon Valley, is now positioning itself to make machinery for the silicon wafer companies. The wafers are not aimed at Apple's next gadget; they are solar panels which will make solar energy competitive with coal, especially with impending carbon taxes becoming a reality.

Today the money is no longer in chasing the next contract



Art by "Starman"

from a gasping Tier One. Wall Street is shouting at us to look at the new infrastructure, which is in heavy demand all over the Rest of the World.

## The contest is becoming a potent

tool for innovation. Threadless, a T-shirt brand in Chicago (see One on One), exclusively prints designs submitted by amateur illustrators in weekly contests on the web and has quickly become a huge player in the T-shirt business worldwide.

The DARPA challenge for artificially intelligent cars (which doesn't even offer a monetary prize now) propelled unmanned vehicles faster than a huge DOD development contract ever could have.

Sony and Nissan have been airing ads made by independent creators who win contests put on by the companies for the best commercial.

A friend of mine recently won a contest for coming up with the best new ice cream flavor, "Policeman's Special." It's coffee ice cream with Krispy Kreme donuts tossed in.

Elon Musk, who sold out his PayPal interests for a huge fortune, is sponsoring a contest for developing an environmentally-friendly car. He is also head of Tesla Motors, which is building a plant in Albuquerque to make a fully-electric \$100,000 sports car.

The best ideas often come from outside the walls of our buildings or our own minds. The contest can be a brilliant way to connect with that unfettered creativity.

## Managing Editor Jill Sevelow

was invited to attend the ESPRIT World Conference in Newport Beach in early May. She saw over 300 attendees experiencing ESPRIT's newest software version, which included new technologies for milling, turning and wire EDM. Jill reported a wildly creative environment, and said ESPRIT's employees conveyed genuine exuberance for their company and their product. She was most impressed with the structure of their workshops, which were intense courses on the latest software, which culminated in an open-ended symposium where users, dealers, programmers, owners and managers sat and critiqued current technology, generated wish lists and opened up the floor, allowing for direct conversation and brainstorming with the people who utilized their products. The next version of their product started percolating immediately after the meeting.

## We note the deaths of two people

of the machining world. Larry Rhoades, the founder of Ex One, died at 62, after feeling ill after scuba diving in Hawaii. Prior to founding Ex One, he had owned Extrude Hone.

I interviewed Larry at IMTS (see TMW December 2006, cover story) and found him to be gracious and open. The parts printing technology of Ex One has the potential to significantly alter the way things are made over the next 10 years, and Larry was the evangelist for the technology.

Don Wood, the founder of *Automatic Machining* magazine, also passed away in May. His folksy editorials made him a beloved icon to the screw machine industry. He saw an opportunity in an important industrial market segment and stayed connected to it for more than 60 years.

## I interviewed Michael Lewis,

the author of *Moneyball* on May 11th. Lewis is a favorite writer of mine because he is a wonderful storyteller. His writing exudes empathy and soul to go with his sports insight.

He likes to write about subversives – the people who do not accept the conventional wisdom like Billy Beane, the Oakland A's general manager, and Bill Walsh, the football coach who invented the "West Coast Offense" which changed the way football is played today.

My personal favorite of Lewis's writing is an article he wrote for the *New York Times Magazine* about his high school baseball coach who changed his life by challenging him to grow up, to test himself, and stand up to pressure. The article became a small book, called *Coach*, and Lewis is writing a screenplay now about his Coach Fitz, who is still coaching baseball in New Orleans.

The *Coach* piece led to another terrific article about Bill Parcells. Parcells contacted Michael Lewis to do an article about himself because he felt "he was Coach Fitz."

Lewis recounted going down to Dallas to interview Parcells. The Big Tuna pulled out yellowed newspaper clips about a long-ago boxing match, which told of two fighters who pummeled each other for four rounds until one gave up. What struck Parcells was that the fighter who had taken the worst beating almost quit but still endured, while the aggressor, who landed the most blows, gave up when the

fight tightened up. Lewis told me “I got chills down my spine when Parcels read those old newspaper articles to me.”

The discussion about athletes who quit led to talk of one of Lewis’ longstanding interests – minor league baseball players. He is working on a book called *Underdogs* about minor leaguers looking for any edge to get to the Bigs. He says steroid usage is still rampant, even though it probably damages more careers than it helps. He thinks Barry Bonds is the exception as a player who benefited from juicing. With Bonds, steroids turned a great doubles hitter into a huge home run slugger. Most players gain no benefit or even regress.

Lewis had a wonderful observation about Minor League baseball. “If you want to see a group of really unhappy people, go to a Triple A team’s clubhouse with a bunch of older players. It is not unheard of to hear a big cheer go up when a player on the Major League parent team is reported to go down with an injury.”

Lewis loves sports, but he thinks players are so obsessed by the big money in pro sports that it has squeezed a lot of the fun out of the games for them.

He summarizes his feelings in a current article in the new magazine *Portfolio*. The piece is about an effort to sell shares in professional athletes to the public. He called it a “jock exchange.”

“At this point, the soul of professional sports is beyond worrying about. Athletes are frantically self-interested; marvelously self-absorbed; always looking for any edge, however unfair; and forever leaping from team to team in search of a few more dollars. In other words, the jock market already has the morals of the stock market.”

## The difference between the real

**and the theoretical in the American justice system comes alive for me every June when the Illinois Parole Board meets to rule on whether to let out two cold-blooded killers who murdered my friend’s father for money 30 years ago.**

**The hurt never goes away for my friend, who identified the body with a bullet hole in the head. The victim was a wonderful doctor, father and husband. A jealous rival hired the killers, but was never tried.**

**The two hired murderers were sentenced to life**

imprisonment without parole, but in today’s world that sentence is subject to change. The current Illinois governor, Rod Blagojevich, has appointed new people to the State Parole Board and there is a move afoot to make room in the prisons by letting out those who have served 30 years, regardless of the severity of their crimes.

**Each year my friend and his wife suffer through the agony of the murder as the killers apply for clemency. This year the pain is more acute because there is a real possibility the killers will get out.**

**The next time you read about the sad plight of the poor, long-suffering prisoners who have paid the price for their crimes, please think of my friend and his wife and brother and sister who live in fear of these vengeful killers being released in their midst.**

## An important new book by

Nassim Nicholas Taleb, *The Black Swan*, is now available.

The title refers to the phenomenon of total logical unpredictability. Why, in a population of 100 percent white swans, is a black swan suddenly born. There is nothing in the commonly dissected data to prepare us for the black swan – but it happens anyway. The same can be said for market meltdowns and volcanic eruptions and tsunamis.

We always base our calculations about the future on data from the past. Taleb discusses the power of randomness.

A story that connects me to *The Black Swan* is from Rabbi Harold Kushner, who wrote the famous book *When Bad Things Happen to Good People*. Kushner tells the story of Morris Greenberg, who worked all of his life in a small business and finally wanted to celebrate his success by buying a big, black Mercedes. He and his wife went to the dealer and made a deal on a 500 SL sedan. While they were prepping the car so he could drive it away that day, he decided to cross the boulevard to get a sandwich. As he crossed the big street thinking about his beautiful new car, he was struck by a bus and killed.

His wife grieved and plaintively asked God why her beloved Morris was struck down after living an exemplary life in every way. And God answered her.

Morris Greenberg? Oh, my goodness. I thought it was Horace Greenberg. I made such a terrible mistake.

Sometimes life seems to be so beautifully ordered, so happily predictable, so logically manipulatable by those of us smart enough to understand the data.

And then we spot the black swan in the pond.

BY JERRY LEVINE

## The Persian Puzzle

*The Persian Puzzle*, by Kenneth Pollock, breaks down Iran's 7,000 year history to explain how it has become an extremist state, and why it has such an antagonistic relationship with the rest of the world, particularly the United States. Pollock spent several years in the CIA as a Persian Gulf analyst and five years in the Clinton Administration working on U.S. policy toward Iran. He is currently a Director for Middle-East Policy at the liberal Brookings Institute.

According to Pollock, Iranians take great pride in the history of the ancient Persian Empire. Many consider it the world's first great superpower for its vast army, rich culture, monotheistic religion, relatively effective government bureaucracy, and immense size. Iranians strongly resent that most of the world knows little about their golden age.

For the past 500 years, Iran has been the world's only predominantly Shiite state, and Iranians are often quick to point out to others that they are Aryan Persians, not Semitic Arabs. For the past 150 years, a weak Iran has fallen prey to its own corrupt leaders and powerful imperialist nations. In the early 1900s, Britain and Russia divided the country into three zones, designating the populous north to Russia, the oil-rich south to Britain, and the central desert to the Persians.

In 1951, disputes between Iran and the Anglo Iranian Oil Company (which eventually became BP) culminated in Iranian Prime Minister Moseddeq nationalizing the country's oil fields. Moseddeq, who had virtually seized control of Iran by that time, was then deposed by the Shah with assistance from the CIA in order to preserve U.S. oil interests. Iranians still hate the United States for forcefully bringing the Shah back to power, who would basically serve as a puppet leader for the United States. This hatred was a key ingredient in the 1978 revolution that brought Ayatollah Ryhollah Khomeini to power.

After the Iran-Iraq war in 1988, Iran began rearming – not to deter Iraq, but rather to protect against an American attack. It acquired Soviet submarines and naval mines with the intent of

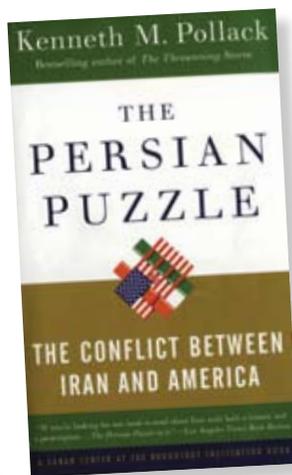
disrupting oil shipments in the Gulf. It also began a program to acquire nuclear weapons.

The Clinton Administration attempted to reach out to Iran. In a Millennium evening speech, Madeleine Albright apologized for 50 years of past American behavior, calling for dialogue with no preconditions. Europeans and Iranian reformers were ecstatic. Yet, ten days later, Ayatollah Ali Khomeini delivered a very negative response, and shortly thereafter Iran began arresting reform-minded journalists and politicians.

Ironically, after September 11, the U.S. became partners with Iran, fighting Iran's old enemies in Afghanistan – the Sunni Taliban and al-Qaeda. Unfortunately, it later switched sides in Afghanistan, offering sanctuary to al-Qaeda leaders who were fleeing the Afghan battlefield. Iran also increased support and funding for PLO militants, Hamas and Hezbollah, displaying its determination to derail any Middle East peace initiative. Most alarming is that Iran stepped up its nuclear weapons program, which is developing faster than its moderate government reform movement. Pollock calls the nuclear buildup the "Problem from Hell."

He fears that once Iran develops nuclear weapons, it will revert to an aggressive foreign policy that will further destabilize the Middle East, and threaten oil supplies and the world's economy. He offers no solutions to the problem other than an ill-defined form of containment led by the United States, because European nations Japan, China and Russia have not yet put international security ahead of their limited national interests.

The "Persian Puzzle" has become the problem from Hell.



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



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## Mini Series

The new Ganesh Mini-Turn is a CNC lathe for both bar and chucking applications for up to 1-1/4" barstock, or up to 5" chucking work. The 10-horsepower, 6000-rpm spindle features a standard A2-4 spindle nose so Hardinge 5C, Brown & Sharpe #21 & #22, and Traub A-25 and A-32 collets can all be used, as well as a 5" hydraulic power chuck.

An 8-station high-speed tool turret, with through-the-tool coolant, allows for any combination of 8-ID or 8-OD tools on the turret. The cross slide has room for a number of additional tools such as cross or end working live tooling with speeds up to 6000-rpm, in either single or 4-servo driven tool clusters with milling, drilling, and rigid tapping capability. High-speed air or electric spindles can be added to the cross slide for cross, end-working, or angular milling or drilling work.

For more information, please contact Ganesh Machinery at 888-542-6374 or visit the company website at [www.ganeshmachinery.com](http://www.ganeshmachinery.com).



## Lathe of Glory

Rem Sales, LLC has introduced Tsugami's newest lathe, the Po1. Created specifically to machine micro parts, The Po1 precision automatic lathe features a maximum bar capacity of 3 millimeters. With 1.57 inches of stroke and 50,000 rpm cross rotary tools, the Po1 is fully capable of handling your most demanding requirements. 25,000 rpm main and sub spindles are standard with full C axis control.

A robust tool zone includes six turning tools, two cross rotary tools, three ID tools, and three back working tools. Adjustable air chucks on the main and sub spindle ensure that parts are not damaged during metal removal. The Po1 is equipped with a Fanuc 32i-A CNC and latest technology motors and drives.

For more information, please contact Rem Sales at 860-653-0071 or visit the company website at [www.remsales.com](http://www.remsales.com).

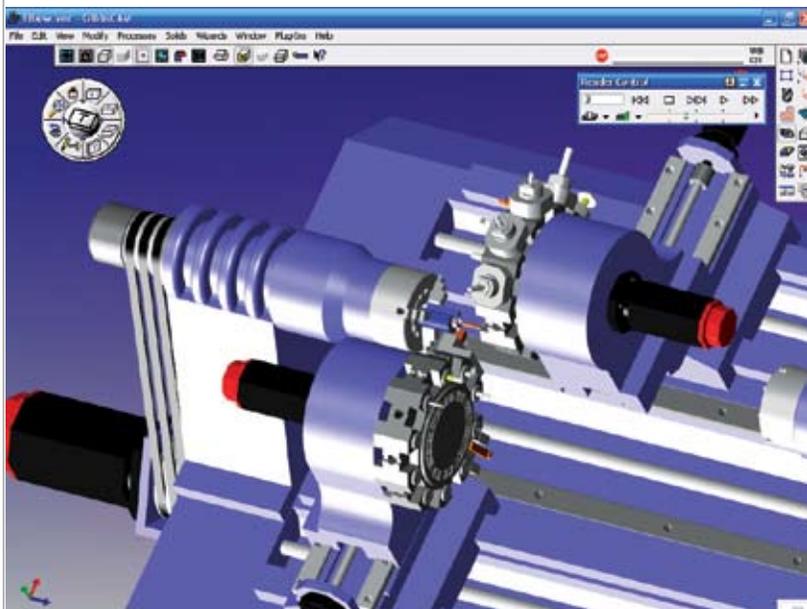
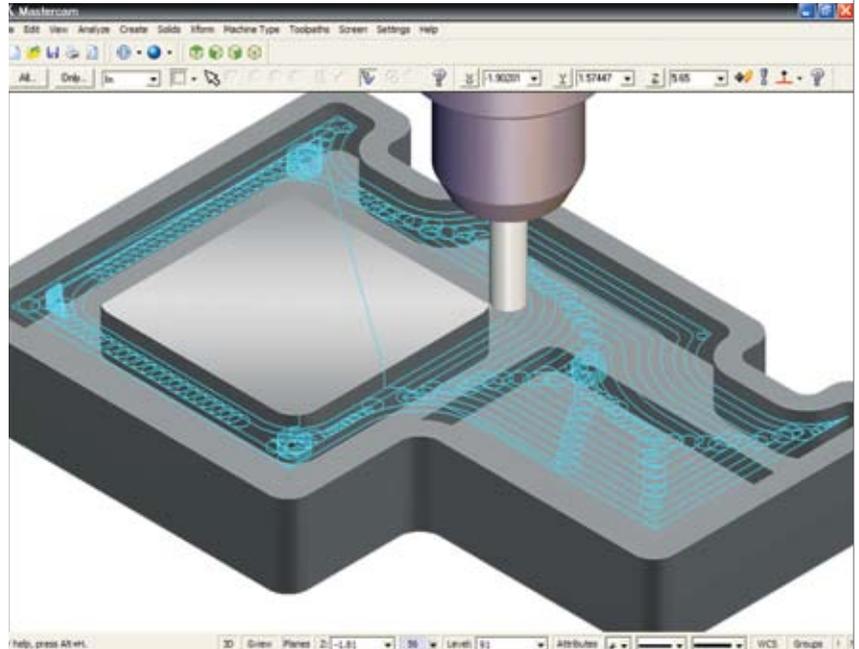


# fresh stuff

## The Maintenance Cam

CNC Software has announced the release of Mastercam X2's Maintenance Release (MR1). This release introduces significant new capabilities, including improved toolpaths for high speed machining, multi-axis enhancements. The Pencil toolpath has been enhanced to provide smoother motion with fewer retracts when used with rest material. Mastercam can calculate the appropriate number of offset passes needed, based on tool diameter. Trochoidal motion in high speed toolpaths assists with the machining of harder materials. In MR1, Mastercam gives you the ability to control when and how the trochoidal motion occurs in a toolpath. The Advanced Multi-axis toolpaths have also been enhanced to support solid geometry.

For more information, please contact Mastercam at 800-228-2877 or visit the company website at [www.mastercam.com](http://www.mastercam.com).



## Call it Mr. Gibbs

Gibbs and Associates has introduced the GibbsCAM Machine Simulation option. This capability which complements GibbsCAM Cut Part Rendering process simulation functionality, allows for entire machine tool motion of a CNC program to be validated in an accurate simulation.

Gibbs and Associates has formed key partnerships with a number of machine tool vendors, which are focusing on multi-tasking as part of their strategic market position, such as Index, Matsuura, Mazak, Mori Seiki, and Nakamura Tome. The updated version of GibbsCAM Machine Simulation being demonstrated adds support for turning, mill/turn and multi-task machine tools to the previous version which supported milling machine tools. Machine tool models can be built and setup like the real machine tool, then the CNC program is simulated to validate it prior to running the CNC program on the actual machine tool.

For more information, please contact Gibbs & Associates at 800-654-9399 or visit [www.GibbsCAM.com](http://www.GibbsCAM.com).

# fresh stuff

## Metal Matrix

CPS Corporation now offers AlSiC (Aluminum Silicon Carbide), a metal matrix composite for the housing, interconnection and thermal management of microelectronic, optoelectronic and power electronic devices. AlSiC enables a tailored coefficient of thermal expansion (CTE), offering compatibility with various electronic devices and assemblies. The isotropic CTE value of AlSiC can be adjusted for specific applications by modifying the Al-metal/SiC-particulate ratio. AlSiC also exhibits a high thermal conductivity which prevents the bowing and flexing of packaging and substrate material. The CPS AlSiC near and net-shape fabrication process both produces the composite material and fabricates the product geometry.

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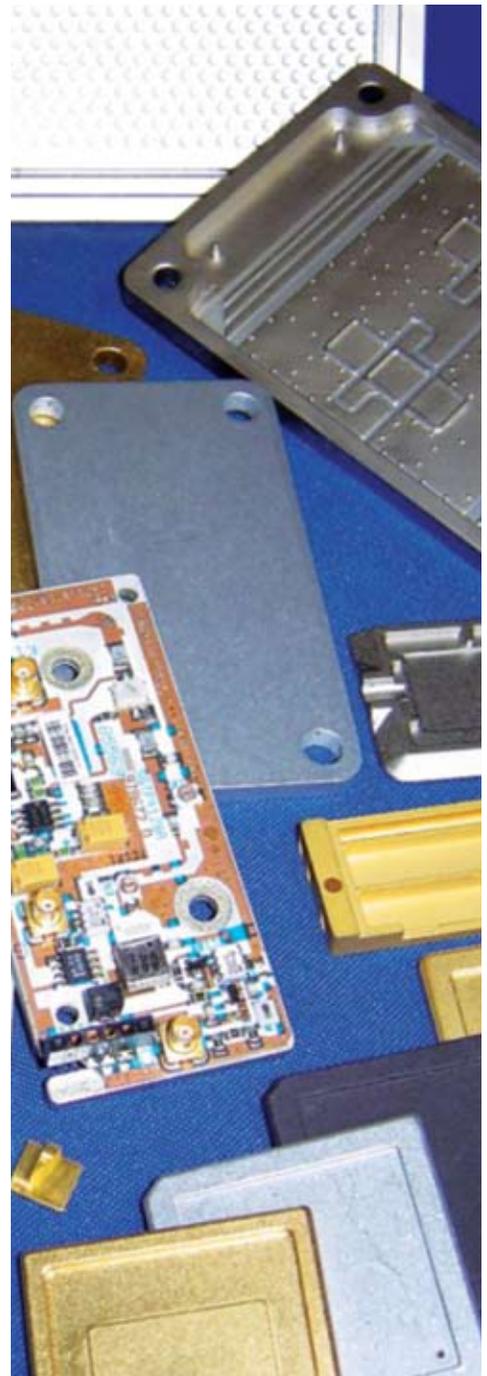


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## Kurt Clampit

Kurt's has introduced a new 5-axis clamping system which allows continuous 5-axis cutting motion. It provides a clamping force up to 8992 lb (40kN). The Kurt VB 5 AX 100 system is adjustable to handle any desired clamping width and it is limited only by the size of the machine table. The system's two clamping jaws, one stationary and one moveable, can be positioned at any desired distance from each other.

Kurt Manufacturing says its new VB 5 AX 100 eliminates jaw deflection and/or part misalignment during machining operations. Kurt VB 5 AX 100 includes a clamping width from 0.0787 inch to 9.291 inch (2 mm to 236 mm), a clamping depth of 0.315 inch (8 mm), height above the machine table of 6.889 inch (175 mm) with extended height options to 7.874 inch (200 mm) and 8.858 inch (225 mm).

For more information, contact Kurt at 763-574-8309, or visit [www.kurtworkholding.com](http://www.kurtworkholding.com).

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## Forces of Nature

TPS International, Inc., and Manurhin KMX have joined forces to sell and service the KMX line of lathes in North America. The KMX product line includes multiple models of sliding headstock lathes targeted at unique shaft and spool manufacturing up to 32 mm in diameter. TPS, located in Sussex, Wisc., and established in 1981, will be providing application, sales, service and parts support for KMX in North America. Other exclusive, well known machine tool lines distributed by TPS include Buffoli, Wirth & Gruffat and Bumotec.

For more information, contact TPS International at [www.tpsintl.com](http://www.tpsintl.com) or call 800-423-4031. (tps.pdf-new imagine coming)

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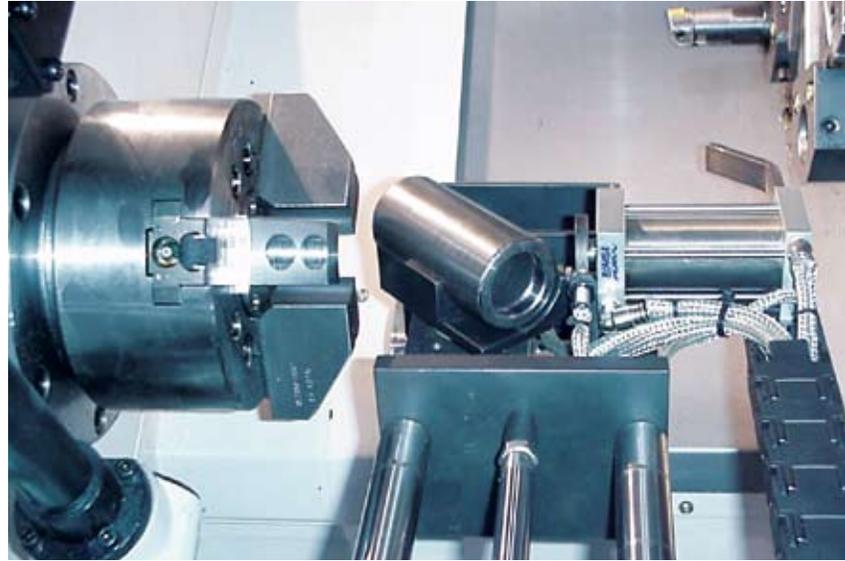
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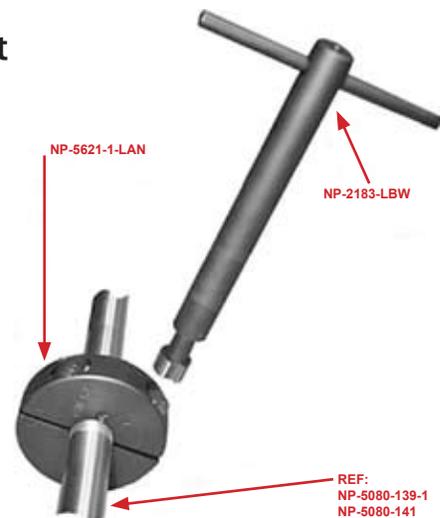
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## REM-ember This

Rem Sales, LLC is pleased to announce the North American introduction of Tsugami's newest 20mm (0.787") Swiss-turn, the SS-20. Key features include a modular tool zone with up to twenty-five (25) resident tools, a Fanuc 31i-A dual path CNC, 220mm (8.67") of stroke, and a fine ground cast iron base. The Tsugami SS-20 easily handles cross and face milling, drilling, and tapping as well as angular drilling, thread whirling and polygon turning.

The SS-20's standard main spindle configuration includes seven turning tools, five cross rotary tools, and five ID tools, while the standard sub spindle configuration includes four ID stations, two face drills and two cross rotary tools. Rapid changes to the configuration of main and sub spindle cross rotary, ID, and turning tools can be made. Thread whirling, polygon turning and angular face drilling operations are possible with an adjustable face tool attachment.

Production models will be available in September 2007. For more information, please contact Rem Sales at 860-687-3400.

## Born Free

Slater Tools Inc. is announcing the increased availability of its new Adjustment Free Rotary Broaching Tool Holder. The company is now stocking four sizes of the tool; .625" shank, .750" shank, 12mm shank and 22mm shank. These sizes are now available for immediate delivery. The new tool holder is designed for Swiss-type lathe and screw machines. Slater's new adjustment free design allows the operator to use the tool holder without the need for centering. The new rotary broaching tool holder's sleek design eliminates interference

and clearance problems, and provides easy access to the grease fitting for maintenance. Slater's new tool holder uses the standard 1.25" length rotary broaches. Stock of available standard broaches has also been increased. The Adjustment Free Rotary Broaching Tool Holder is used for any type CNC, swiss, or manual turning, milling, drilling or screw machine.

For more information, contact Slater Tools at 586-465-5000 or visit the company website [www.slatertools.com](http://www.slatertools.com).





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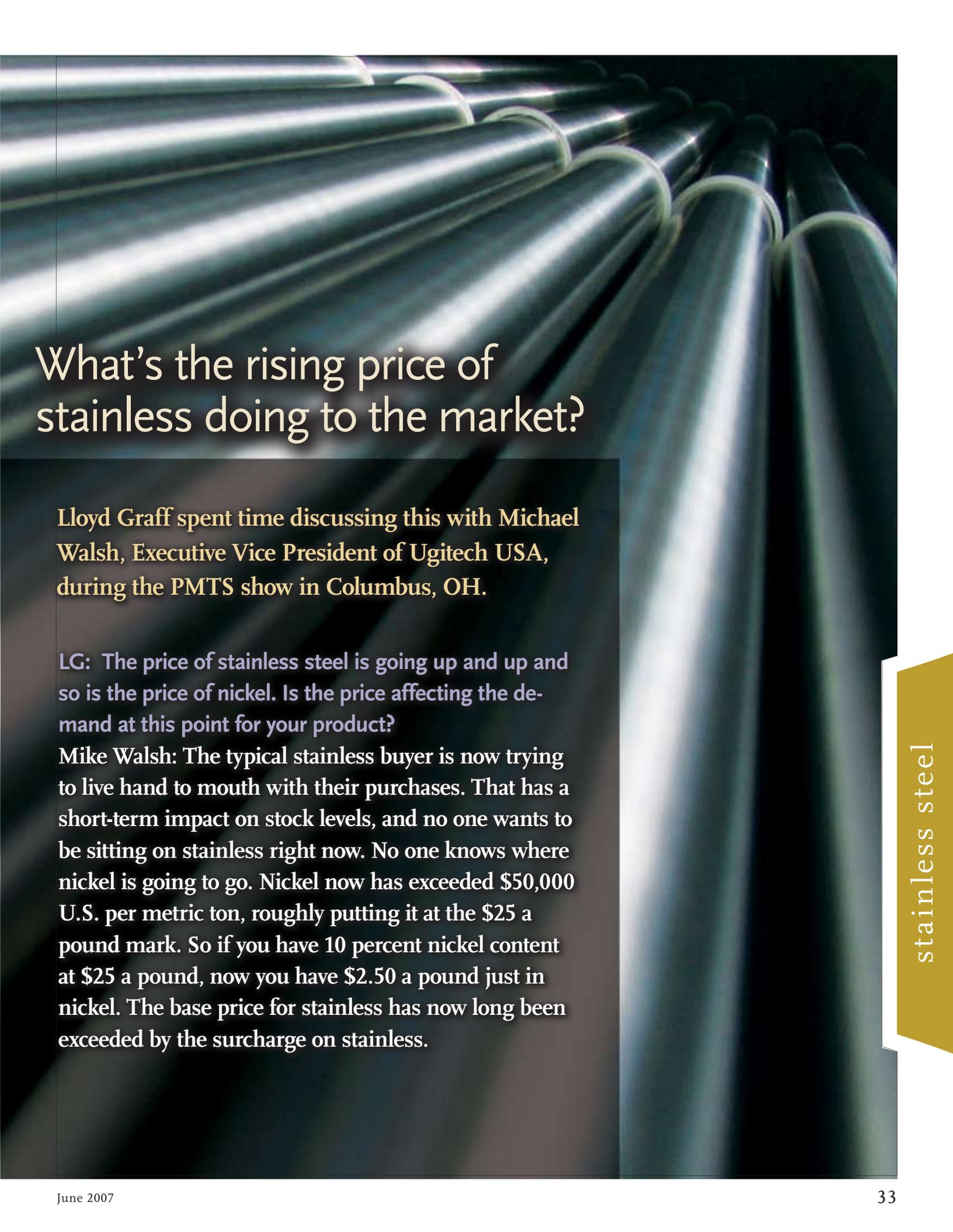
# Stainless Steel

BY LLOYD GRAFF

# Steel



stainless steel



## What's the rising price of stainless doing to the market?

Lloyd Graff spent time discussing this with Michael Walsh, Executive Vice President of Ugitech USA, during the PMTS show in Columbus, OH.

**LG:** The price of stainless steel is going up and up and so is the price of nickel. Is the price affecting the demand at this point for your product?

**Mike Walsh:** The typical stainless buyer is now trying to live hand to mouth with their purchases. That has a short-term impact on stock levels, and no one wants to be sitting on stainless right now. No one knows where nickel is going to go. Nickel now has exceeded \$50,000 U.S. per metric ton, roughly putting it at the \$25 a pound mark. So if you have 10 percent nickel content at \$25 a pound, now you have \$2.50 a pound just in nickel. The base price for stainless has now long been exceeded by the surcharge on stainless.

**LG:** To whom?

**Mike:** To the buyer. One of the feelings in the market is that the nickel producers had a lot of projects. If you go back and you were talking to them in 2004, these projects were supposed to be coming on stream in 2006 and 2007 at a particular rate, and for some reason the additional supply has been slowed down or delayed.

**LG:** Do I detect some sarcasm there?

**Mike:** Absolutely. From the conferences I've attended in the last six months, and after listening to the experts on this matter, there is a frustration. If they had met their projected supply increases, we don't feel the nickel prices would've run away to the levels they're at. The real concern is that we don't know where it's going. We're concerned about the threat of substitution. We're certainly respecting the fact that we also have to do our part and work hard to develop alternatives, and that means rethinking the chemistries and the balance. Are there alternatives where you don't need to have as much nickel? There have been real improvements there, specifically our new product. In fact, it even has some better properties relative to strength at a much more affordable price because it is a low nickel grade. Substitution I think is more of a long-term concern. We don't think critical applications and major industries can just change that fast. We haven't seen it from a specification standpoint. We've seen people trying to rethink the move to the 200 Series stainless worldwide. It's had more impact in stainless steel flat roll. Bar, rod and wire, which we call long products, are a small piece of the stainless pie. Flat rolled is by far the larger piece of the pie.

**LG:** Where is flat rolled used?

**Mike:** Certainly automotive consumes quite a bit of stainless flat rolled. You would find it used for major appliances, and certainly in the food and beverage industry. But for stainless long products, to help you understand the size, in 2006 there was an estimated worldwide consumption of 27 million tons of finished or semi-finished stainless steel products. From an actual crude output, and the difference being the yield, stainless exceeded 30 million tons last year. Stainless long products, the sum of bar, rod and wire, are 15 percent of world consumption.

But going back to the [likelihood] of substitution – the feeling now globally is there's more [likelihood] of

substitution in flat rolled products than in long products. But we don't want to be naive and sit back and think that there's not a threat [of substitution] on those products also. There have been some good solutions for applications where a [company] could move from 300 Series to 200 Series stainless or from a 316 stainless to a product like UGITECH LeanDup™ 35N.

**LG:** Are we talking about 200 meaning 20 percent nickel, 300 meaning 30 percent nickel?

**Mike:** The average content for the major grades of 300 series of nickel is in the eight percent to 12 percent range. If we go back to this whole topic of escalating prices and volatility of nickel, it's also very true for two other important elements and those are chromium and molybdenum. Typical stainless content of chromium is 18 percent. And it's true for molybdenum, which I believe is now up around \$30 a pound. There does not seem to be any short-term relief in sight for the next year for chrome or molybdenum. There are people who are

**“China is now the world's largest producer of stainless steel and the biggest consumer.”**

suggesting that we could see, as we turn into 2008, some relief in nickel prices, but we've been hearing that for some time. It hasn't come to fruition.

**LG:** In China, are they producing stainless?

**Mike:** Yes, China is now the world's largest producer of stainless steel and the biggest consumer.

**LG:** Are they self-sufficient?

**Mike:** Whether they're a net exporter or importer is very particular to the type of stainless steel from a product form.

**LG:** Tell me about the stainless scrap issue. Is stainless steel analogous to brass as far as the scrap goes? In other words, can you take stainless steel scrap and easily convert it into stainless bar?

**Mike:** All stainless steel products made worldwide have a certain proportion of scrap in the melting process, and

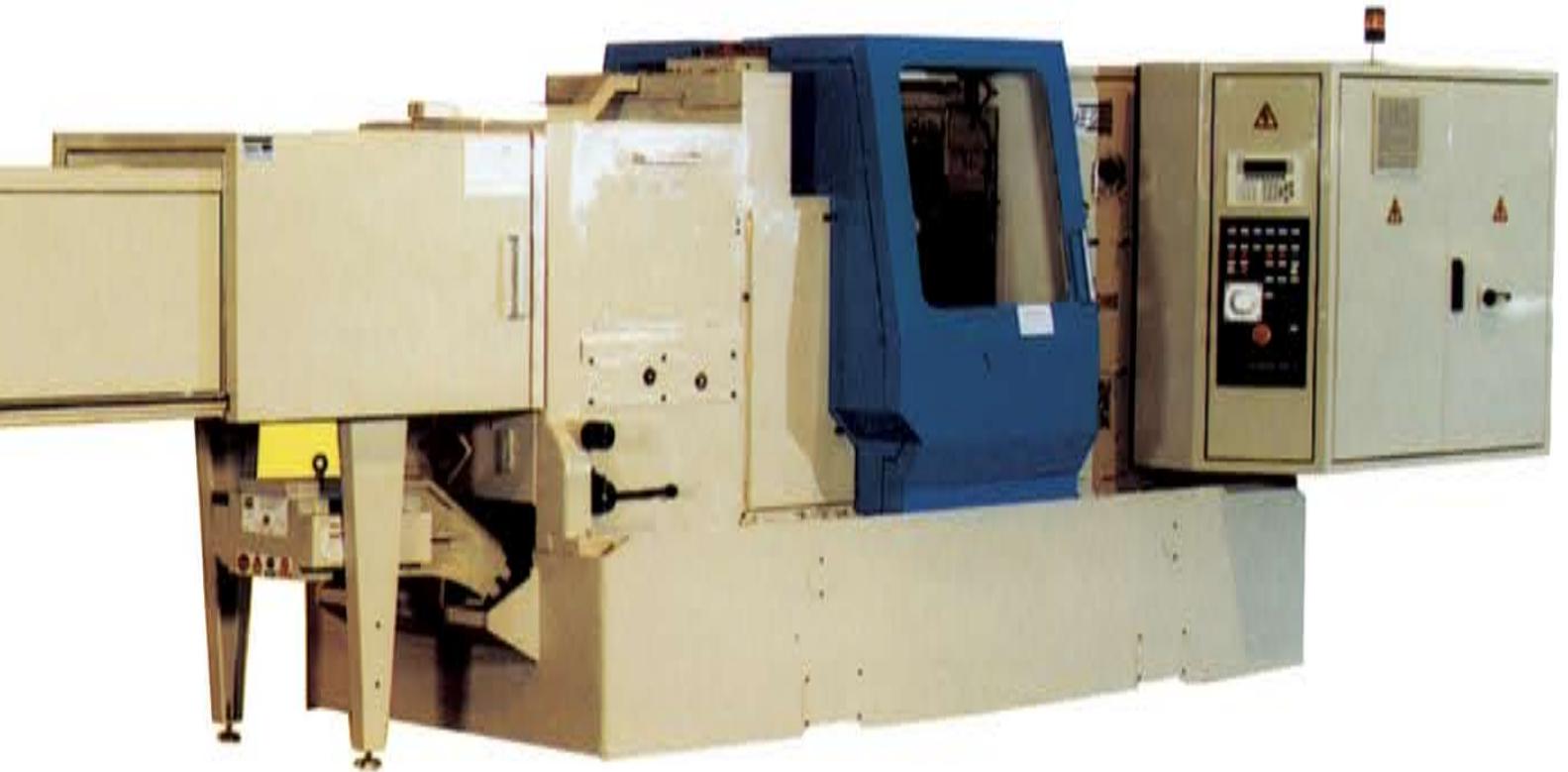
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the ratios differ. Some producers in a particular grade can have as low as 55 percent to 60 percent scrap content and that number can be higher on some commodity grades. The remaining amount of nickel that they need, for various reasons, comes from pure virgin nickel.

**LG:** A question about scrap. With brass, the scrap usually, at least for machining customers, goes straight back to the mill for reprocessing, so there's a direct relationship between scrap and bar pricing. My impression is that this is not the case with stainless – that you don't sell to a customer and then reprocess their scrap yourself.

**Mike:** Scrap buyback programs in stainless are very much in the minority; it has not been a traditional part of the market.

**LG:** So we don't have the hand and glove relationship.  
**Mike:** Absolutely not.

**LG:** Do you think it may come to that as a way of safeguarding supply?

**Mike:** No, we don't see that as any trend evolving in stainless. It has existed for years in a very small amount of the business with two very large buyers

being interested in having some form of scrap buyback, but it's not the norm of the market by any means.

**LG:** Do you ration your furnaces as far as making materials for medical or for aerospace that bring a higher dollar per pound vis-à-vis say automotive or something else?

**Mike:** No, it is not a core strategy of UGITECH to try to only focus on the high end. In fact, we are proponents of trying to find lower cost solutions and are willing to use our capacities to support customers' interested in that, such as the duplex grades, which have made progress in terms of being specked out more often, as well as 200 Series because, let's face it, the amount of working capital pressure in financing of these high valuations just creates the need for more capital requirements throughout the entire industrial chain. We believe there's a lot of opportunity worldwide in water treatment and the development of potable water. We believe there are many opportunities in the building and construction industry, as well as energy and automotive.

**“Potable water and drinking quality should be a concern for everyone on the planet.”**

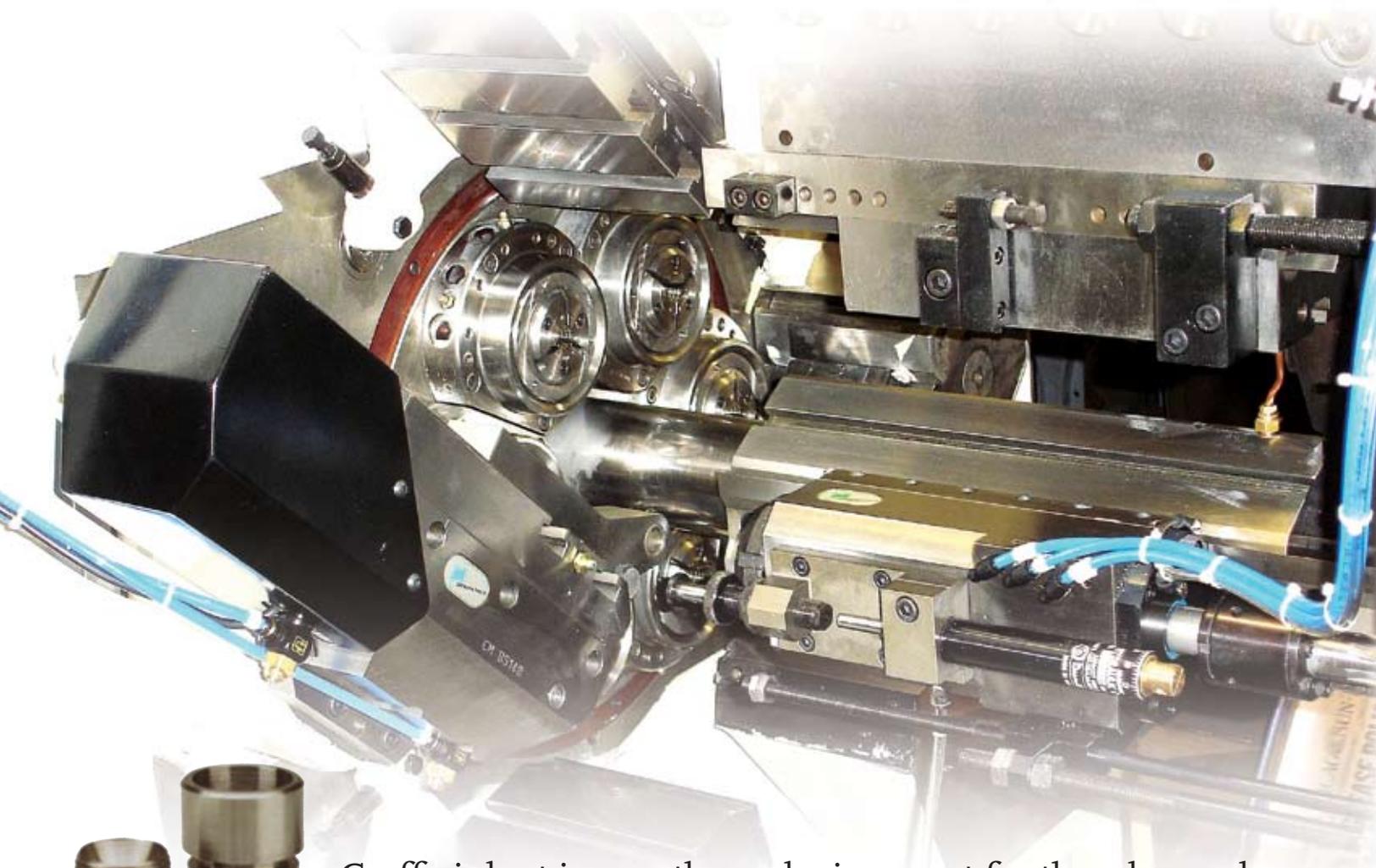
**LG:** Interesting that you bring up water because a lot of people consider water to be perhaps the biggest growth market over the next 10 years, and it would strike me that stainless would be right in the sweet spot of water treatment, water purification, etcetera.

**Mike:** I'm not an authority on the world water supply situation in terms of potable water and drinking quality, but I know it should be a concern for everyone on the planet.

**LG:** UGITECH, Ugine. Explain to us how has Ugine become UGITECH now? What's the ownership?

**Mike:** Last July, the UGITECH global business of Arcelor was purchased by Schmolz + Bickenbach, a privately owned company at the time from Germany. The company was founded on steel distribution. They have decided to migrate into production and we are now the world's number one producer from a volume standpoint.

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**LG:** Is it a publicly held company?

**Mike:** Schmolz + Bickenbach is a listed company on the Swiss Exchange. They do show the financial structure of the organization there. It is a very fast growing company, very focused on steel production, processing and distribution; and that in fact is how the company is organized. Those are the three main groups or pillars where they have chosen to deploy, which is a new structure for them. Within the last year it hasn't just been UGITECH that was acquired. They also bought a producer of tool steels called A. Finkl & Sons in Chicago.

**LG:** You've built a facility in the Chicago area?

**Mike:** We have major investment that is underway and it is in the Chicago area. We're very excited about that. But we would prefer to wait until the project is truly completed before we talk more in the market. The target is third quarter of this year and we're right on pace for that. It'll use some really neat technology. In fact, for some of the work we'll be doing, it literally will be the newest equipment in the world. There are no production lines like it anywhere.

**LG:** How huge is the barrier to entry into the stainless business?

**Mike:** Oh it's big. I mean it's not cheap, but then again if you have access to low cost or no cost capital, or capital you might not ever have to pay back...

**LG:** Are we talking Russia now?

**Mike:** No, [but] there's certainly some frustration by the North American industry over China's currency manipulation. Also, the concern is over very high rates of default, so if they already have preferential discounted capital or access to it and they're being allowed to have high default rates, that's a real advantage. There's more capacity coming on in China than anywhere else.

**LG:** Because of the tremendous growth in infrastructure there?

**Mike:** Yes, absolutely. There is another concern. Are they going to find themselves in a real overcapacity situation? China has been keeping the world growth rate of stainless demand up, therefore also helping

support nickel prices. World consumption last year of long products, for example, was up 15 percent.

**LG:** That's unheard of.

**Mike:** It was a record year. The growth rate this year that is being projected for the U.S. market is only two or 2.5 percent. We're hearing European rates of four percent. Then you hear the Asian growth rates at 12 percent and now all of sudden you can see where the fast pace growth is coming from. There are a lot of consumer-oriented white goods being exported from Asia.

**LG:** Could you export steel bar to Asia from here successfully?

**Mike:** Not with the present currency situation. Exports have improved. Certainly people who hold euros right now have had a nice advantage.

**“China has been keeping the world growth rate of stainless demand up.”**

**NG:** Why wouldn't exports be good right now?

**Mike:** Exports are good, but would we be competitive shipping a finished stainless steel product from here to China? No, because of the Chinese currency compared to the dollar or the euro. So if you're looking at 1.35 euro to a dollar, it can make stainless steel products made here cost competitive for importation into Europe. The same is not true for exporting to China from the U.S. Right now. They have not gotten into sophisticated types of stainless and are mostly seen in commodity stainless.

Thanks, Mike.



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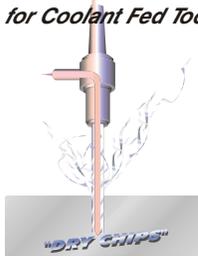
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Diameter	32
Stroke	320mm
O. D Tool	5
Front Tool	5
Back Tool(Driven)	4(2)
Off-Center(Driven)	2(2)
Cross Tool(Driven)	4(4)
Power	Main 5.5/7.5kW Sub 2.2/5.5kW
Weight	4,050kg
Dimension (LxWxH)	2,720x1,304x1,775mm



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Dear Shop Doc,

There is this tool holder in our Brown & Sharpe tool crib that is some type of turning tool. No one here has ever used it. It has two blades but no rollers or backrest. One of the more experienced guys here said it's a rough turning tool but thought they were hard to use. Can you tell me anything about this tool?

## Just Curious

### Dear Curious,

Your information is partly correct. The correct name for the tool in question is a balanced turning tool, and it isn't difficult to use. The balanced turning tool is excellent for removing large amounts of stock at maximum rates. There are three primary ways to set the blades, depending on the requirements of the manufacturing process. In all of those cases the blades cut tangentially to the stock. Some shops have gone to carbide blades allowing for increased feeds and speeds.

The first method of setup is a true "balanced turning" application. The blades are each set at the same turning diameter; each blade removes the same amount of material that is determined by the depth of cut and the feed rate. The feed rates can vary from .005" per revolution up to .01" per revolution. However, the depth of cut can range to .250" deep, allowing .500" stock removal for one pass. The full depth of cut for each blade and the feed rate determine the thickness of the chip.

The second method for rough turning is to set each tool to remove one half of the total stock that needs to be removed. One half the full depth of cut and the feed rate will determine the chip thickness in this scenario. I personally have removed up to one inch of stock in one pass with this method, using 5/8" turning blades.

The last method is to use the two blades as a rougher and a finisher in one pass. In this case, one blade removes 80 percent of the material. The second (finish) blade is set behind the rougher by at least the thickness of the chip (feed rate), and it removes the last 20 percent of the material. Some operators will stone the finish blade to give it some drag on the material. The feed rate will determine the quality of the finish in this case.

In all cases, the tools need to be centered and relieved properly to avoid rubbing. Three to twelve degrees, depending on material type, is a good top rake. The tool holder provides the side clearance when the blades are centered properly.

These tools are not difficult to set and they allow a much greater stock removal per pass than roller box tools. The roller box tool is preferred when a tight tolerance or superior finish is required. Good luck in using your "new" old tool.

**George Morris**  
AMT Machine Systems

*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).*

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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

## In five years will China be the number one exporter of steel in the world?

*China exported in excess of 43 million metric tons of steel products in 2006. Today it has 120 million metric tons of excess steel-making capacity.*

In five years China will have the capacity of half the world's steel production. China is actually not a low cost steel producer. U.S. mills beat China in terms of their labor efficiencies and lower cost raw materials. China does not have an economic advantage in producing steel compared to the U.S.

However, China's steel companies enjoy [the advantage] of gross government subsidies in the form of debt forgiveness, land, and money to build steel mills. Those subsidies along with currency manipulation have enabled China to grow from an importer of steel in 2004 to an exporter of 30 million metric tons over imports in 2006. Last month's [export] numbers were double that. Even if the Beijing government changes its [unfair] policies, it does not appear that it can reign in its provinces to follow new standards.

Tom Danjczek  
Steel Manufacturers Association

Yes, I believe they will be number one. The pace at which China is adding new capacity is such that at some point we will get an overhang of excess capacity which will drag down world prices; the catalyst will probably be a sharp slowdown in the domestic Chinese economy, which is quite feasible sometime within the next five years. As to price, the notion of the "China Price" becoming a benchmark that many world competitors are or will be unable to meet has already materialized for less sophisticated manufacturing, but will likely spread upward the technological scale. While the U.S. government and manufacturers talk about exchange rates and subsidies, there are many more reasons behind the China Price, e.g., lax regulation and safety standards.

Professor Oded Shenkar  
Fisher College of Business, Ohio State University

**U.S. steel Imports, 2002-2006** (quantity in metric tons, value in dollars)

	2002	2003	2004	2005	2006*
Total Imports	29,652,212	20,978,967	32,484,663	29,128,436	41,799,272*
Imports from China	749,798	582,898	1,676,120	2,153,804	4,853,454*
Value from China	\$258.7 million	\$264.5 million	\$1.097 billion	\$1.676 billion	\$3.454 billion*

Source: U.S. Census Bureau \*Extrapolation to year-end based upon 11 months of data through November 2006

next

## the facts:

I would argue that China is already number one. According to the Chinese Iron and Steel Association (CISA), China exported in excess of 43 million metric tons of steel products in 2006; China is on a 60 million metric ton pace annualized based upon CISA's 1Q 2007 export statistics; and China exported over seven million metric tons of steel products in April 2007 – an 84 plus million metric ton pace annualized!!! China today has nearly 500 million metric tons (again annualized) of liquid steel capacity and a “plethora” of new steelmaking projects on its horizon; therefore, China should remain for the foreseeable future the world’s most under priced and over supplied steel market and consequently, the world’s leading exporter of steel products.

John Nolan  
Vice President and General Manager, Steel Dynamics Inc.

The entire effective steel-making capacity of the United States is now less than the current surplus production capacity of China. Steel Manufacturers Association <http://steelnet.org>

Chinese 2002 steel exports to the U.S. increased from 750,000 metric tons valued at \$259 million, to an estimated 4.6 million metric tons valued at \$3.3 billion in 2006. Steel exports to the U.S. from state-subsidized Chinese steel companies have increased more than 600 percent since 2002. Steel Manufacturers Association <http://steelnet.org>

The average efficiency of North American integrated steel producers is estimated at two man-hours per metric ton, while large Chinese steel producer, Maanshan is estimated to have an efficiency of 40 man-hours per metric ton. John Nolan, Steel Dynamics Inc.

**Definition of “ton”** There are three different types of “tons”: A “short ton” is equal to 2000 pounds. A “long ton,” also known as a “British ton,” is approximately 2,240 pounds. A “metric ton” is equal to 1,000 kilograms, or approximately 2,204.62 pounds. The Associated Press Stylebook, 2006

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one on one

Seven years ago, **Jake Nickell** and his partner **Jacob DeHart** started Threadless, a T-shirt brand which exclusively prints designs submitted by amateur illustrators in weekly contests on the internet. Threadless is a division of skinnyCorp, an internet community website owned by Nickell and DeHart. In 2005, the last year it disclosed its figures, skinnyCorp did \$6.2 million in [sales], all on the web.

**NG: What did you do before you started Threadless?**

**JN:** I was 20 years old, working full-time at a web development company and started Threadless on the side. After two years I started doing it full-time.

**NG: Did you have any kind of business background when you began?**

**JN:** No, my background was more in web development and design. But I wasn't even intending to start a business when I started Threadless. It was more just a hobby, something I was doing for fun.

**NG: What inspired you to start it?**

**JN:** Jacob and I were both members of an art community called Dreamless, which held a T-shirt design contest that we both won. Jacob and I started talking about how cool it was to have won the competition and came up with the idea for Threadless, an ongoing competition where people could always be submitting illustration work.

**NG: Who votes for the designs in the contests? Do you ever pick shirts that don't sell?**

**JN:** Anybody can just sign up [on the internet] and vote. When the voting is completed, we look at the top 100 scoring designs and then pick 20 to 30 from that list. Everything sells within around three months.

**NG: How long does it take from when the design wins to being ready for sale on the Internet?**

**JN:** It's not a set number, but we've done it in as fast as three days.

**NG: So what exactly is your business? T-shirts? Or social networking – with services like skinnyCorp's podcasts and blogs and message boards?**

**JN:** It's more about building communities within spaces that we're interested in. Most of the projects we create, we just thought would be cool. We've got probably seven projects and four of them don't even have a revenue stream.

**NG: Have you thought about having Target or other retailers distribute your T-shirts?**

**JN:** Target came to us, and so did Urban Outfitters and some other big name stores. It's never really interested us because you can't tell the story in a department store. [The story] is kind of the main reason people buy the shirts – the fact that [the design] was submitted by a 14-year-old in Japan who's really into art right now, and she won a competition. You lose that process in a department store.

**NG: Do you have plans to take a couple of the really popular shirts and start mass producing those?**

**JN:** We don't plan to keep anything consistently in stock.

**NG: Why not?**

**JN:** It's the whole limited edition thing. It's a huge portion of what the product is. We'd rather print a new design than reprint an old one. It's about keeping stuff fresh.

**NG: Thanks, Jake.**

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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, 1975, 1957  
1-5/8" RBN8  
1-5/8" RBN8 '81 (2)  
1-5/8" RB8, 1980, rebuilt 1996. pickoff  
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)  
GM-20, 1993  
GS-20 1986 (2)

## SWISS-CNC SLIDING HEADSTOCK

Citizen M-20, 1996 (2)  
Citizen L-20, Type VII, 1996-98 (2)  
Citizen L-32, 1999

## NEW BRITAIN

Model 52, 1-1/4" 6sp., 1979 (3) pickoff  
Model 62 2-1/4" 6sp., 1975, heavy thdg  
Model 62 2-1/4" 1960, \$5750

## INDEX

42 mm ABC Index 1997 (3)  
MS 36E, 1993  
MS 25 6-spindle, 1990

## DAVENPORT

3/4 Davenport, 2006  
3/4" thdg., pickoff, 1985-1965 (10)  
3/4" chucker, 1991 (4) Tamer  
3/4" with Tamer & Logan clutches,  
'91, long bed

## CNC MACHINES / CNC LATHE

Okuma VQC 40, 1987  
Citizen L-25, 1998  
Index 42mm ABC, '97 (3)  
Index GFG, 1987 (3)

## MISCELLANEOUS

Kaltenbach KB 455NA saw, 1998  
Recess unit for Hydromat (as new)  
Hydromat base for 45-12, 1996  
Hydromat flanges for HW25-12  
Reed B-13 thread roll  
Winter 125 thread roller  
Davenport chucking package \$2500  
Alps bar loader for CNC Swiss \$3950  
Mectron laser measuring machine mfd. 2000

## HYDROMATS

HW25-12 1986 (3)  
HB45-12 1997-1995  
HB45-12 base, saw, barfeed \$79,500  
HB45-16 chucker, 1997

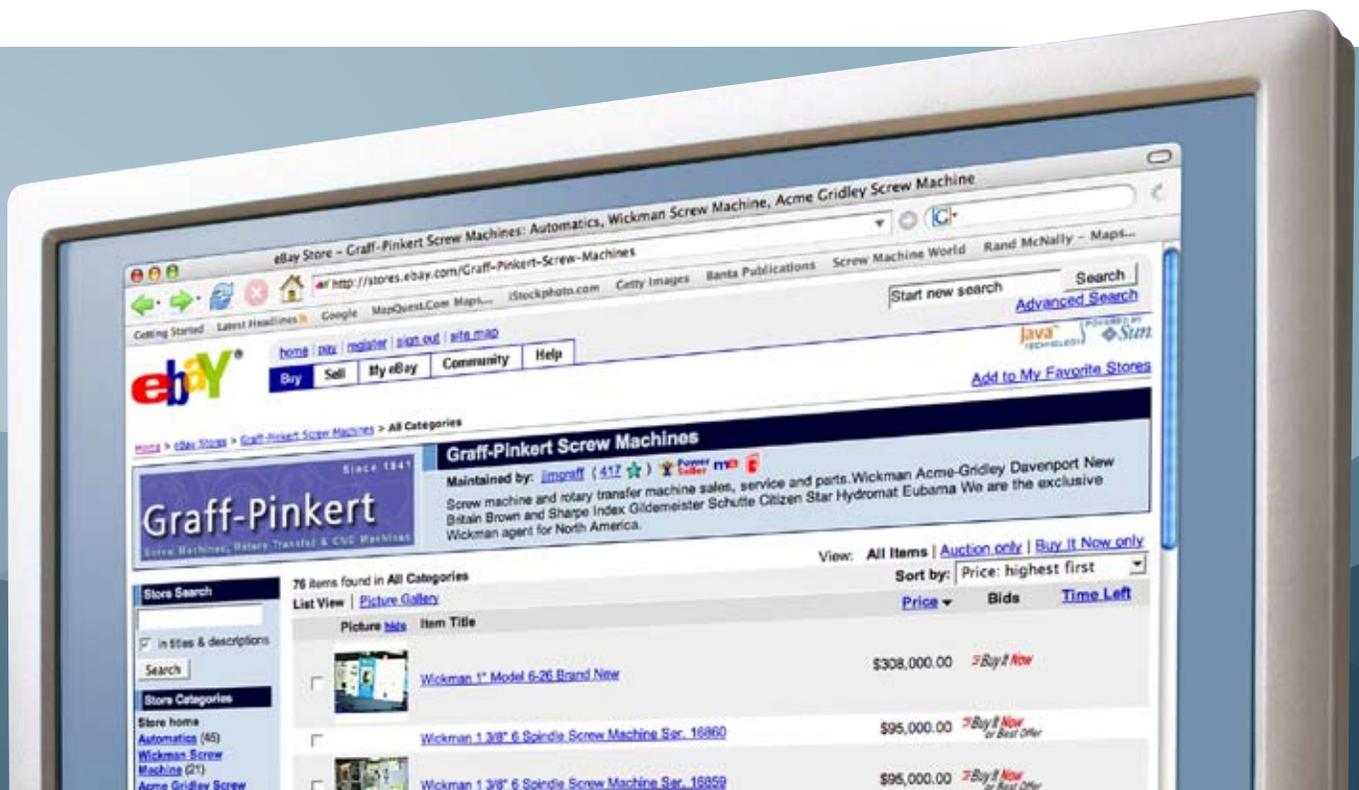
## BROWN & SHARPE

#2 - 1-5/8", 1970  
#3 - 2", 1973

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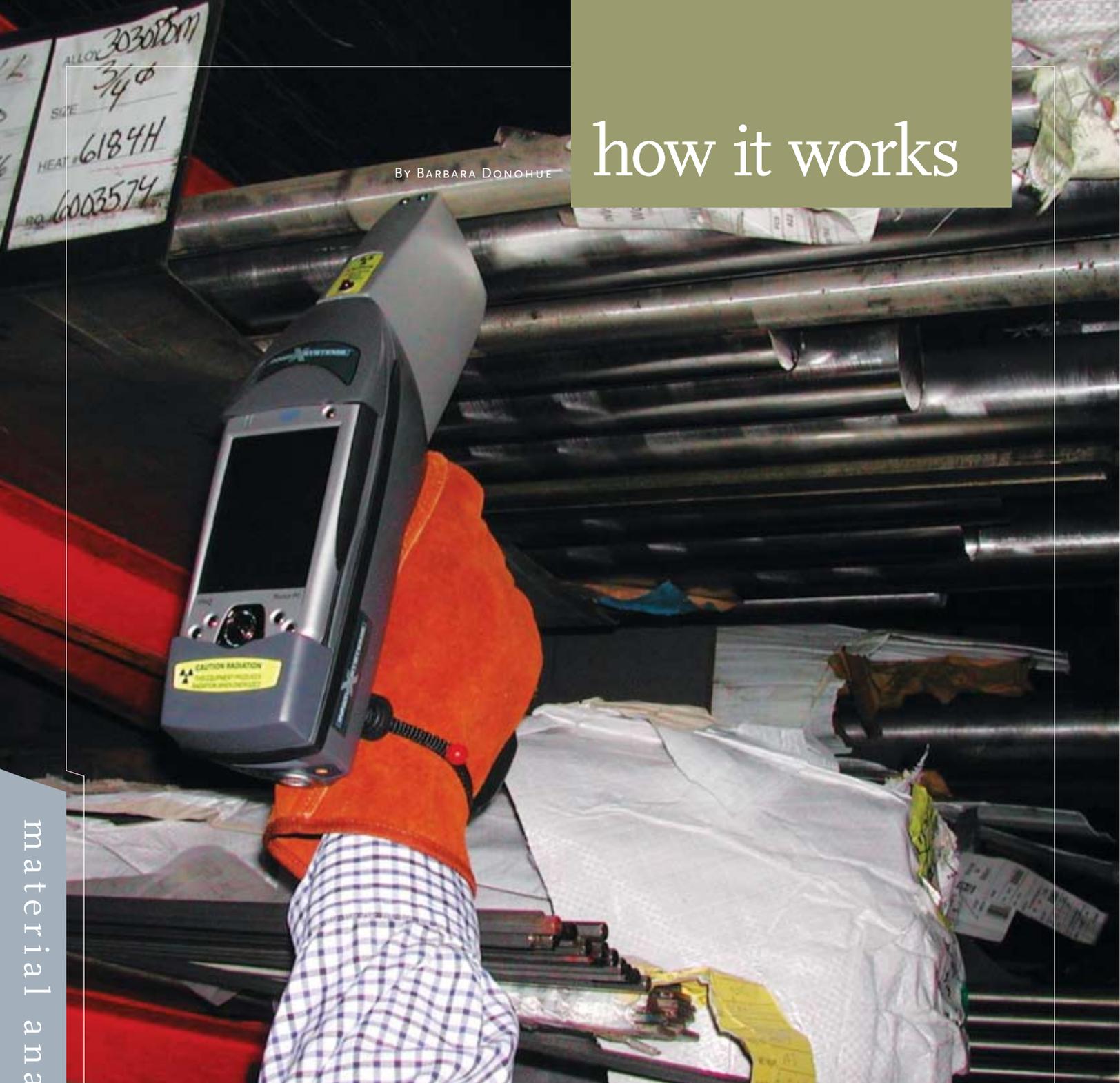
Cathy Heller Wickman and Index Parts manager

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# how it works

By BARBARA DONOHUE



material analysis

**Y**ou're in the stockroom looking at a piece of bar stock. Can you tell what material it is? Maybe it's some kind of stainless and maybe it's a high-priced nickel alloy like Inconel. It's supposed to be tagged and color coded. Maybe it lost its tag. Maybe there's no color code left and nobody bothered to mark it.

Photo above: Innov-x-ALPHA METALS ON RACK TEST. Using the Innov-X Handheld XRF to do PMI on a rack of incoming materials to verify grade and chemistry. Photo courtesy of Innov-X Systems, Inc.

# Material analysis for the machine shop

OK, it's bar stock, but what is it really?

Do you have to scrap it? With the price of nickel up around \$25 per pound, you could be making some scrap dealer very happy. So what do you do?

Fortunately, over the last century or so, a lot of very smart scientists have worked out how to analyze the chemical composition of many kinds of materials, including metals. The analytical instruments often used to do this are spectrometers.

## Spec-what?

There are lots of different kinds of spectrometers. All of them take advantage of the innate characteristics of different atoms and molecules. Many measure how atoms or molecules affect the absorption, emission, or scattering behavior of electromagnetic radiation — infrared light or x-rays, for example — and use this data to determine the chemical composition of the material under test. Others, such as mass spectrometers, detect the behavior of the atoms or molecules themselves under the influence of magnetic field or other conditions.

So, you can cut off a sample of the mystery material and send it off to your local lab for analysis. They'll likely use some kind spectrometer to do the job. In a day or two you'll receive a report that tells you what the material is. The cost for the test will probably be \$75 to \$200, maybe more. And you can use the stock with confidence.

Historically, spectrometers were big and expensive and delicate, so they had to live in a laboratory. Nowadays, it seems, everything can be miniaturized and ruggedized, and that includes some kinds of spectrometers.

## In your hand

X-ray fluorescence (XRF) spectrometers are now available in portable, hand-held and small benchtop analyzers you can use yourself in the stockroom, on the shop floor or in the QC department. XRF takes advantage of the fact that every element has a characteristic way it reacts to x-rays.

When x-rays strike an atom, it emits other x-rays — it “fluoresces.” Each chemical element emits x-rays at energy levels unique to that element. An XRF analyzer focuses a beam of x-rays onto a small area of the sample under test. The atoms in the sample fluoresce and the spectrometer detects and analyzes the energy levels and quantities of the resulting x-rays.

In a handheld unit, the x-rays come from either an x-ray tube, or from radioactive isotopes carefully shielded within the unit. You place the nose of the instrument on the part, press the trigger, and in less than a minute, the chemical composition and alloy designation appear on the unit's display. You read the results there and can send them to your computer.

These small XRF analyzers aren't cheap — expect to pay

# how it works

\$30,000 or more, depending on options — but some shops have found they do pay for themselves. You can sometimes rent or lease them.

## Consider your customers

DCI, Inc., St. Cloud, Minn., constructs tanks and storage vessels for dairy, food, pharmaceuticals and similar “sanitary” industries. They work in stainless steel and high-nickel alloys, said Brian Uhlenkamp, vice president of engineering and R&D. Material is absolutely critical to these industries. PMI — positive material identification — is what they’re looking for.

In 2004, the company acquired a handheld NITON XRF analyzer. “The material comes in and we add a lot of value to it—fabrication, machining. We [bought the analyzer] for liability [and] for our customers to know what they are getting.” Also, he adds, “to verify what we’re getting from our suppliers. We don’t put anything into stock without PMI-ing it.” Uhlenkamp said the analyzer paid for itself in about 18 months.

DCI has found material mismarked from distributors, and from mills, even when accompanied by certificates.

On one occasion, DCI needed to produce replacement parts in AL-6XN because the same parts in 316 stainless were failing due to corrosion. It was a good thing they checked the material, because the supposed AL-6XN stock they received turned out to be 316.

“Buyer beware,” said Uhlenkamp, “because you don’t know what you’re getting.” He said the company has been able to catch about 50 problems of this sort. “People assume bad material or wrong material comes from overseas. We’ve found it’s truly mismarking. We’ve seen things come in marked 304 and it’s really 316. [So] you know somebody isn’t trying to make a buck!”

A few months ago, DCI purchased another XRF analyzer, so they could have one in the plant and one in the field.

“We do random inspections on the shop floor. . . and final inspection on key components. Customers want the final report that says ‘that’s what this is,’” said Uhlenkamp. One customer even wants to watch in person when they do final testing with the XRF unit.

## Getting out of a jam

Whether it’s raw material or completed parts, it’s got to be the right stuff.

Witco, Inc., an Avoca, Mich., machine shop, bought a NITON handheld XRF unit a few months ago. It’s been very handy in the stockroom for identifying stock. “We’ve had some



MMR-SRF unit-2. A lab-model x-ray fluorescence spectrometer.  
Photo courtesy of Massachusetts Materials Research, Inc.



NITON-314. The NITON XL3 Series' VIP color touch-screen display provides viewing at any angle.  
Photo courtesy of Thermo Fisher Scientific.



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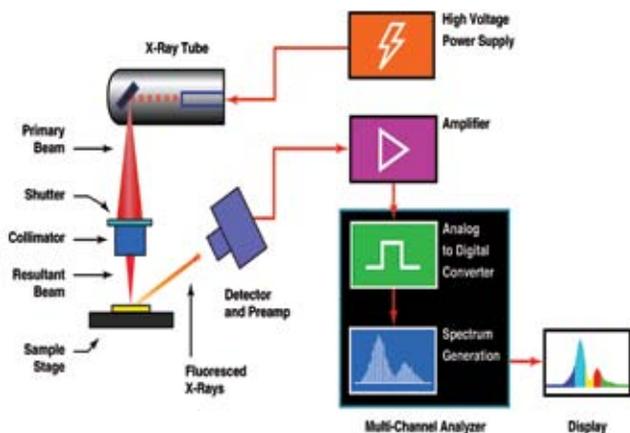


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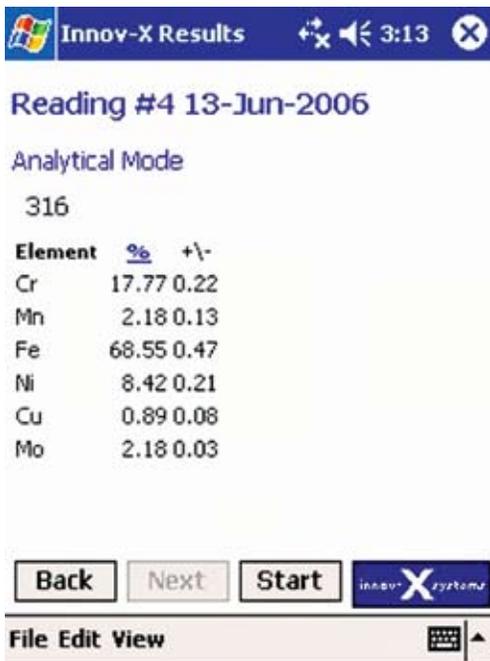


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# how it works



MATRIX-SRF-Schematic. A typical XRF instrument.  
Illustration courtesy of Matrix Metrologies, Inc.



Innov-x-ALLOY PDA SCRAN snap 010. Screen of the Innov-X Handheld XRFs PDA showing results for 316 stainless steel.

Photo courtesy of Innov-X Systems, Inc

where one end is one color and the other end is another color,” said, general manager Kevin Witt. “Now, we’re able to probe and verify [what it is].”

Once a material analyzer shows up in the shop, folks get creative about how to use it. Witt said his shop has used its XRF analyzer to help “reverse engineer” a broken machine part so they could produce their own replacement. “OK, it’s 4140, check the Rockwell hardness, and [we] made up our own,” he said.

Kevin Pelletier, sales and marketing manager at Massachusetts Materials Research, Inc., a lab in West Boylston, Mass., told about a shop that had machined 1800 parts out of different bar stock — grades of stainless and Inconel — and the parts got mixed. The customer received the parts and said “Something is wrong.” The shop tried unsuccessfully to sort the parts, and finally called Pelletier’s lab. An affiliate lab dispatched a technician to the shop where he used a portable XRF analyzer to separate out the different materials.

A shop had been running stock that it really liked, but was coming to the end of its inventory, and wasn’t exactly sure what the material was, said Michael Porfilio, quality management director at Anderson Laboratories, Inc., Greendale, Wisc. The shop owner sent a sample of the material for analysis, and the lab was not only able to identify it (a leaded steel), it told him what supplier to go to for more.

“A machine shop called and said, ‘We’ve been making this part for years and now I put it on the lathe and it’s tearing up my tools,’” said Jim Scannell, executive vice president, Dickson Testing Company, Inc., South Gate, Calif., a lab that deals mainly with forgings and castings destined for the aerospace industry. The shop sent over a sample and the lab tested it to find out what was different.

Scannell also told about a shop that was machining parts for an aircraft company and got parts from two heats (batches) of material mixed up. “You need traceability on aircraft parts,” he said. His lab was able to find small differences in composition between the two heats, so the shop was able to maintain material identity traceability. “It costs, but it’s cheaper than having to scrap out the parts,” he said.

Even after the machining is over and the parts shipped, an XRF analyzer can help you get the most for your scrap. A barrel of unknown chips might bring one price, while a barrel of Inconel chips, verified by a report from your analyzer, might bring a lot more.

# New!

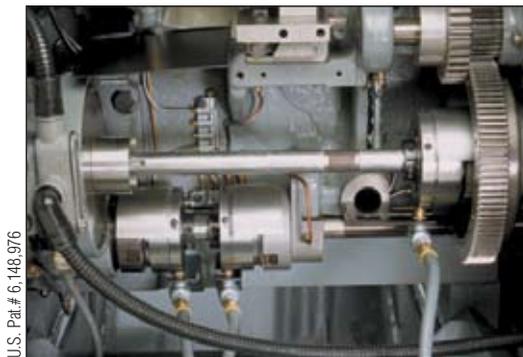
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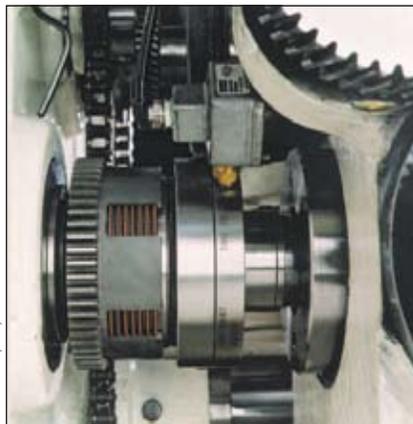


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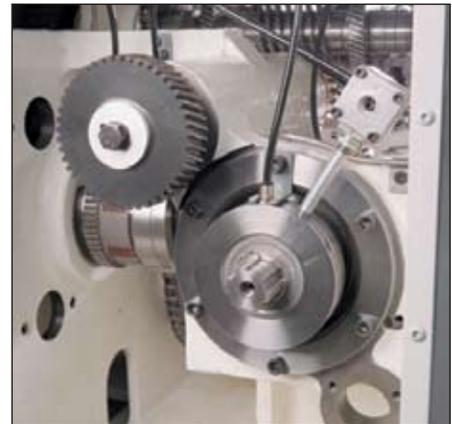


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# how it works



Above: NITON-787. Tested cast turbine blades with the NITON XL3 handheld analyzer. Photo courtesy of Thermo Fisher Scientific. Right: Using the Innov-X Handheld XRF to check scrap metal in a barrel and identify the contents going to a recycler. Photo courtesy of Innov-X.

## Handheld XRF can't do everything

The standard XRF units cannot “read” the lightest metals, those with lower atomic numbers (magnesium, for example). “Argon in the air interferes with measurements of materials with lower atomic numbers, such as aluminum,” explained Tom Anderson, NITON marketing manager with Thermo Fisher Scientific, Bend, Ore.

NITON handheld XRF products offer a helium-purge option; the handheld units from Innov-X Systems, Inc., Woburn, Mass., offer a vacuum option. Both remove air from the interior of the unit, so they identify the lighter metals. In practice, if you know you have an aluminum alloy, you may be able to use a standard unit, without the options, to look at the other elements present and then use this information to determine which alloy it is.

For very small parts, you might consider a benchtop XRF unit, like those available from Matrix Metrologies, Inc., Holbrook, N.Y. They can analyze parts down to 2 mils in size, said Frank Reilly, company president.

Your XRF unit can do a lot, but for some analytical tasks, you'll still have to go to the lab. To determine carbon content in steel or detect infiltrated hydrogen in titanium, specialized instrumentation is necessary. It's probably a good idea to get acquainted with nearby laboratories, so when you need them, you'll know their capabilities. Many will welcome you for a visit and give you a tour.

## Maintaining identity

PMI: positive material identification - you'll be hearing about it more and more.

“Aerospace and medical. . . Those two industries require stringent testing,” said Pelletier. “Others are all over the map.”

But one way I look at it is [you're doing your] due diligence.” What would happen to your shop's reputation if something went wrong, even if it was somebody else's fault?

When you know about material identity and traceability, and how to use material analysis resources, whether in laboratories or with in-house analyzers, you can ensure that your customers get what they need, and your business gets the most out of your raw materials, the value you add, and even your scrap.



## For more information

### How X-ray fluorescence analysis works:

[www.matrixmetrologies.com/id9.html](http://www.matrixmetrologies.com/id9.html), click on “Download a comprehensive X-ray Fluorescence Technology Guide”

[www.niton.com/Content/xrf/how\\_xrf\\_works.asp](http://www.niton.com/Content/xrf/how_xrf_works.asp)

[www.innov-x-sys.com/technology/fluorescence](http://www.innov-x-sys.com/technology/fluorescence)

**Analytical methods:** <http://elchem.kaist.ac.kr/vt/chem-ed/analytic/ac-meths.htm>

DCI, Inc.: [www.dciinc.com](http://www.dciinc.com)

Innov-X Systems, Inc.: [www.innovxsys.com](http://www.innovxsys.com)

Massachusetts Materials Research, Inc.:

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

Matrix Metrologies, Inc.: [www.matrixmetrologies.com](http://www.matrixmetrologies.com)

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WHAT'S UP WITH VERTICAL MACHINING CENTERS?

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 to run a more efficient and effective shop. In every issue, we'll feature a product category and focus on equipment vital to our business.

The vertical machining center has become the most commonly purchased new machine tool today. It has eliminated most of the secondary finishing machines. The following companies have given us the up and up on their machines:

## Haas

The Haas line-up of VMCs consists of more than 70 models, ranging from the ultra-compact Office Mill, which fits through a standard office door, to the massive VS-3 with 150" x 50" x 50" (xyz) travels. The capabilities of Haas VMCs are as varied as the machine capacities, with many configurations available, including 40-taper, 50-taper, geared-head, high-speed, high-production, mold-making machines, toolroom machines, gantry routers and more. The Haas control on

every Haas VMC is packed with intuitive features. All Haas products are built in the company's 1-million-square-foot manufacturing facility in Southern California, and distributed through a worldwide network of Haas Factory Outlets (HFOs) that provide sales, service and support.

For more information, please contact Haas at 800-331-6746 or visit [www.HaasCNC.com](http://www.HaasCNC.com).





## Ganesh Machinery

Ganesh CNC Vertical Machining Centers feature heavy-duty casting, while the box way design dampens vibration. Premium quality ball screws are pre-tensioned and anchored at both ends, and then 100 percent inspected for parallelism to the axis guideways. The Fanuc OiMC control features look ahead capability for high speed machining and has the ability to add a 4th axis in the future. Fanuc Digital Servo motors feature the ability to tune spindle and the axis drives for geometric accuracy. Graphic Display, Tool Life Management and a data server with a memory card (upgradable to 256K flash card) are just a few capabilities on this FANUC OiMC CNC controller. Ganesh VMC's are available in four sizes: 22" X 16", 28" X 18", 40" X 20" and 49" X 24".

For more information, contact Ganesh Machinery at 888-542-6374 or visit [www.ganeshmachinery.com](http://www.ganeshmachinery.com).



## Mighty USA

Mighty USA offers the Viper PRO series double column Bridge VMC for your complex machining needs, no matter what size mold and die, precision machinery parts, aerospace part, or large size electrical products production.

The Viper C-Frame PRO-800 is a compactly constructed full capacity machine that combines cutting power and precision accuracy. New innovative design features increased cutting capabilities, more machine efficiency, and greater machine rigidity.

For more information, please contact Mighty USA at 310-516-7478 or visit the company website at [www.mightyusa.com](http://www.mightyusa.com).



## Hurco Companies

Hurco Companies, Inc., announced the launch of the VMX84. With X/Y/Z Axis travels of 84/34/30 inches, this massive machining center meets the needs of customers who produce large parts, molds, and dies. VMX84 customers can choose from spindle speeds of 10K, 12K, or 15K. All VMX Series machines from Hurco feature larger ball screws and bigger servo drives. The increased metal removal rates and higher feed rates on the VMX machines decrease part cycle times.

The Hurco control combined with the newly released WinMax® control software provides shop floor flexibility and software productivity for both G-Code and conversational users. Hurco customers using WinMax® will experience measurable process improvements due to 25 new features including Advanced Verification Graphics with 3D solid rendering and real-time tool display.

For more information, please call 800-634-2416 or go to [www.hurco.com](http://www.hurco.com).

## Mitsui Seiki

The 5-axis VU65A-SH vertical machining center from Mitsui Seiki features a vertical head that swivels to accommodate a variety of applications. The machine's travel range in X, Y, Z axes is 1280 mm x 650 mm x 610 mm.

The VU65A-SH's main components are designed using Finite Element Analysis (FEA) to minimize distortion, even when the table is unevenly loaded. A new oil and air cooling/lubrication system has been adopted on the ballscrews, ball nuts, and support bearings, enabling a 24 m/min (945 ipm) rapid traverse rate. The saddle load is evenly distributed over four Y-axis guideways. Hand scraping and positioning accuracy tests in adherence with ISO 230-2 are also performed. A cam-driven, high-speed automatic toolchanger minimizes non-cutting time. The standard 40 taper spindle is driven by a 10 hp AC motor and provides up to 10,000 rpm.

For more information, contact Mitsui Seiki USA, Inc. at 201-337-1300, or visit the web at [www.mitsuseiki.com](http://www.mitsuseiki.com).



# product focus



## Methods Machine Tools

The RoboDrill T-21EL DDR 700 V vertical machining center from Methods Machine Tools is available with 10,000 or 24,000 rpm spindles and employs a direct-drive indexing system. The 4th axis indexer has a built-in synchronous servomotor with an aiCZ sensor. Its gear-free, zero-backlash linear motors are capable of unclamping, rotating 180°, and reclamping in approximately 0.4 seconds at a table-rotation speed of 150 rpm. Indexing precision is  $\pm 0.0055$  degrees ( $\pm 20$  seconds). The 140-mm unit has a maximum torque of 192 ft-lbs and a maximum loading capacity of 220 pounds. The machine offers feedrates to 2362 ipm, rapid traverses to 2125 ipm, accelerations to 1.5 G or more, and 0.9-second tool changes (tool-to-tool). The Fanuc 31i-A5 Nano CNC provides control resolution of 1 nanometer and a 0.4 ms block processing speed.

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

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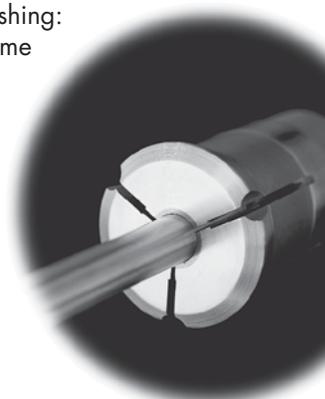
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## Kitamura (left)

Kitamura's Mycenter-2XiF "Sparkchanger" allows for work pieces to be presented to the spindle quickly and positioned with accuracy  $\pm 0.000078"$  (Repeatability  $\pm 0.000039"$ ). Hardened box ways are ground to a 16-micron finish and coated with fluorine-based resin (Turcite-B) that absorbs vibration. Major components are made of quality Meehanite cast iron. The table is also ground to a 16-micron finish. Fully supported travels on the (X) and (Y) axis eliminate table overhang, ensuring overall rigidity. Standard is a 15,000 rpm spindle with a 4-speed geared head and Dual Contact Spindle System.

For additional information, visit Kitamura's website at [www.kitamura-machinery.com](http://www.kitamura-machinery.com).

## Mazak (right)

The Nexus VCN 510C-II /5X vertical machining center from Mazak delivers 50-taper spindle for 5 face machining capability. It features a 30-Hp, 6000 rpm integral spindle/motor with 206 ft-lbs torque. The tilting rotary table provides 360 degree rotation and  $\pm 120$  degrees tilt at a resolution of 0.00001 degree. Maximum part diameter is 21 inches. The VCN 510C-II/5X's rapid-traverse rate of 1417 ipm at 0.5 G acceleration and 2.0 seconds chip-to-chip time further slashes non-cutting time. Up to 4000 tools can be registered in the control. The VCN 510C-II/5X has a X-axis travel of 41 in., Y-axis range of 20 in., and Z-axis travel of 23 in.

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



# product focus

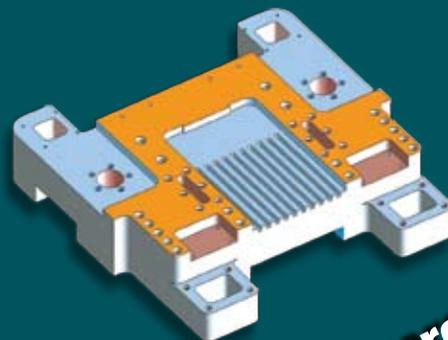


## Doosan Infracore

Doosan Infracore's new DMV 3016 vertical machining center has a one-piece bed with box type column. Its Meehanite composition dampens vibrations and helps dissipate heat. The 39.3" x 16.7" table is supported in all positions, with no overhang. Integral box-type guideways are induction hardened and precision ground. Mating surfaces are bonded with Rulon 142 fluoroplastic resin and hand scraped. The 40 taper, cartridge-type spindle is powered by a 15 Hp motor, and rotates at a maximum speed of 8,000 rpm. Axis travels are 32.2" x 16.1" x 20.1" (X x Y x Z), with 945 ipm rapid traverses along the X and Y axes, and has cutting feed rates of 315 ipm. With 4140 carbon steel, using a  $\_3.14$ " face mill (6 teeth) with a 1,466 rpm spindle speed and a 26 ipm feed rate, machining rates are 19.5 cubic inches per minute.

For more information, please contact Doosan Infracore at 973-618-2500 or email [john.ross@dhiac.com](mailto:john.ross@dhiac.com).

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## Makino (below)

Makino's V99 and V99L VMCs help eliminate or reduce benchwork and post-production polishing on large die and mold work. The V99 has an X-, Y-, and Z- axes of 59 x 39.4 x 31.5 inches with rapid traverse and cutting feedrates of 787 ipm. A worktable of 70.8 x 39.4 inches accepts a maximum workpiece of 70.8 x 39.4 x 25.6 inches. The V99L has an X-, Y-, and Z- axes of 78.7 x 39.4 x 31.5 inches with rapid traverse and cutting feedrates of 787 ipm. A worktable of 90.5 x 39.4 inches accepts a maximum workpiece of 90.5 x 39.4 x 25.6 inches.

Both machines come with a #40 taper 20,000 rpm or a #50 taper 12,000 rpm spindle. This accommodates a maximum tool size of 4.7 inches in diameter by 11.8 inches in length and weighing 17.6 pounds on the #40 taper - or 5.7 inches in diameter by 15.7 inches in length and weighing 44 pounds on the #50 taper.

For more information call 1-800-552-3288, or visit [www.makino.com](http://www.makino.com).



# product focus



## Chiron America (above)

The FZ08KS Magnum Tilt vertical machining center from Chiron America is a traveling column type machine with a fully integrated NC controlled tilting spindle. The spindle has a swiveling range of  $-20^{\circ}$  to  $+115^{\circ}$ .

With the NC swivel head, users can produce complex milled surfaces and drilled/tapped holes at every angular position, including outer/inner contours. The X, Y, Z axis travel range is 18" x 10.6" x 11". The modular system design of the Series 12K allows it to be configured as a single spindle (FZ 12K) or dual spindle (DZ 12K) machining center. The Series 12K machines offer a chip-to-chip time of 1.9 seconds, with tool capacities of up to 48 tools, 2 x 24 on twin spindle models. The CHIRON FZ 12K and dual spindle DZ 12K VMCs have X, Y, Z travel of 21 x 12 x 14 in. (550 x 320 x 360 mm) and spindle speeds up to 15,000 rpm.

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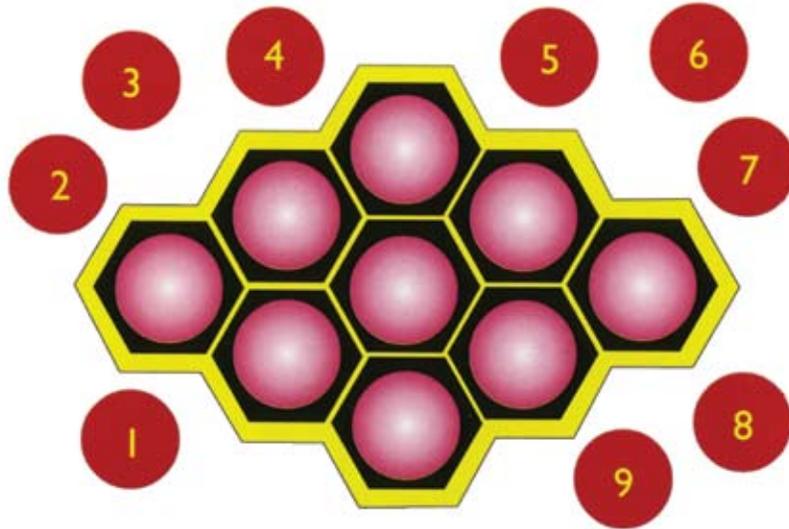
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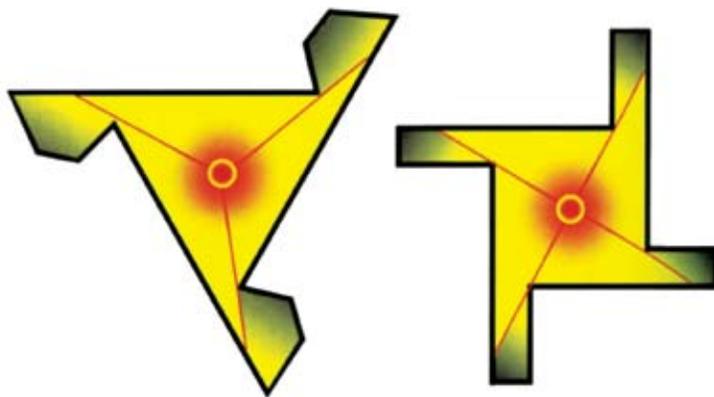
## Mathemagic Honeycomb



Can you place the numbers 1 through 9 in this honeycomb so that, for any given hexagon, the sum of the numbers in the adjacent hexagons will be a multiple of that hexagon's number? For example, if a hexagon contains a 5, the adjacent hexes must total 5, 10, 15, 25 and so on.

## Shadow Garden

Who grew the garden?



**John Lay** of Webster Manufacturing in Tiffin, OH; **Thomas Edge** of Quality Manufacturing, Inc. in Maysville, WA;  
**Bruce Dage**l of HWH Corp. in Moscow, IA; **Thomas Edge** of Quality Manufacturing in Maysville, WA; **Chris Morgan** of K & M Precision Products in Dexter, MI; **Art Fink** of ACF Machine in Union, MO; **Jim Gnesa** of El Camino Machine & Welding in Salinas, CA;  
**Andrew Horton** in West Chester, OH; and **John M. Weber, Sr.** of Weber Systems, Inc. in Menomonee Falls, WI.

# postings



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

## Shanghai International Machine Tool Fair

Shanghai,  
China

July 25 - 28  
[www.eastpanet](http://www.eastpanet)

2nd  
International  
Conference  
on Changeable,  
Agile,  
Reconfigurable  
and Virtual  
Production Toronto, Canada

July 22 - 24

[www.uwindsor.ca/carv2007/](http://www.uwindsor.ca/carv2007/)

## EMO Hannover Trade Fair: The world of metalworking

Hannover, Germany

[www.emo-hannover.de](http://www.emo-hannover.de)

Sept. 17th  
thru  
Sept. 22nd

## Machinery Lubrication 1 Conference

Philadelphia, PA

[www.tsnm.com/  
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360673&  
classid=66](http://www.tsnm.com/events/evitem.cfm?ID=360673&classid=66)

July 10 - 12

## 4th International Conference on Product Life-cycle Management,

Milan, Italy

July 11 - 13

<http://www.plm-conference.org/>

International  
Conference on  
Microalloyed Steels:  
Processing,  
Microstructure,  
Properties and  
Performance

Pittsburgh, PA

July 16 - 19

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

## Birthday of Henry Ford

July 30, 1863

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

## Wall Street Journal premiers

Sunday  
July 8, 1889

Birthday of  
Edward Lowe,  
Inventor of  
kitty litter

July 10, 1920

<http://inventors.about.com/>

## Civil Rights Act of 1964

July 2nd

## What Hath Hyundai Wrought?

In the beginning, there was Genesis. Concept Genesis, to be precise. This sleek, silver show car is likely to change the way you think about the Korean carmaker, Hyundai. There was a time, not all that long ago, when I'd avoid any assignment involving products bearing the Hyundai badge. Usually, the best I could come up with, while searching for compliments, was that its products were "cheap and cheerful."

I started thinking twice the first time I drove the Santa Fe, an unexpectedly competitive crossover/SUV. Then, model after new model, Hyundai continued to surprise and delight. Suddenly I could say, "pretty good," without adding that damning modifier, "for a Hyundai."

But nothing prepared me for Genesis, the thinly-disguised prototype that was a highlight of this year's New York Auto Show – and which will reappear in production trim about this time in 2008. When it does, what you'll see at showrooms is a surprisingly elegant sedan, sized somewhere between the BMW 5- and 7-Series or Lexus GS and LS lines. Expect all the same electronic bells-and-whistles offered by the Germans and Japanese: high-end audio, navigation, radar-guided cruise, and smart braking and chassis controls. But according to product chief John Krafcik, all that will carry a top-range price of around \$40,000, and that's with a new V-8. Opt for the smaller V-6 and the base will be closer to \$30,000.

Now, for those of you who recall the little Hyundai Pony, the stripped-down econobox that brought them into the market nearly 20 years ago, the numbers I'm quoting might still produce a sense of sticker shock. But Hyundai has clearly come a long way, and the powers that be have recognized that "price" and "value" are not synonymous – certainly not, if a bargain price tag is all you have to offer.

Those early Ponies, prone to constant breakdowns, provided a goldmine for Jay Leno and his late-night cohorts.

It's taken Hyundai nearly two decades to live down those early cars and build back up its reputation. Actually, that's still a work in progress. Steve Wilhite, the automotive veteran who signed on as the Korean marque's top American executive last year, readily acknowledges that barely one-in-four American motorists currently even consider a Hyundai product. Genesis, admits Krafcik, is aimed at "getting [the] respect" of opinion leaders who influence a dramatically disproportionate share of automotive purchases.

And if it does get respect, what then? Senior executives are hoping to build momentum for not only entering more upscale segments but moving ahead with a second, luxury channel, modeled after Toyota's Lexus. Now, that would really be a turnaround.

That raises some final thoughts. Perhaps no automotive brand has fallen so hard, and risen back so successfully as Hyundai, which this year should blow past the 500,000 sales mark in the U.S. market. It hasn't been easy, but the determined Koreans show that it's possible. Are there any lessons there for the folks in Detroit as they struggle to put their own individual turnaround efforts into place?



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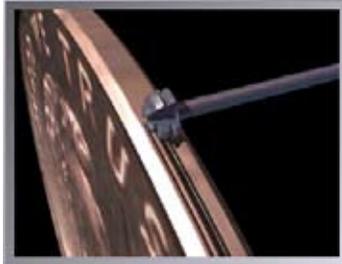
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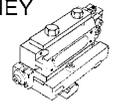
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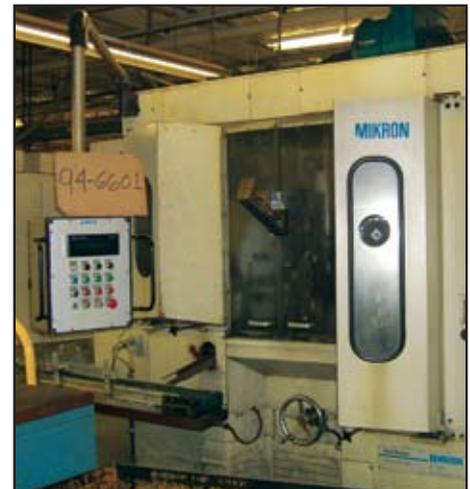
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## Matchmaker, Matchmaker

Sometimes I have a day when everything comes together and I have to say, “Thank you, God, for allowing me to experience it.”

I had one on May 7th. Noah and I had an interview scheduled with Eitan Wertheimer, Chairman of the Board of Iscar, the huge Israeli cutting tool firm that he and father Stef built and just sold 80 percent of to Warren Buffet’s Berkshire Hathaway for \$4 billion.

We got to the Standard Club in Chicago a half hour early, stepped into the elevator and Eitan introduced himself to us. He was ready to start the interview at 9:00 instead of 9:30 and we immediately began talking about Iscar, the sale to Buffet, his business career, love of cars, interest in education, the ups and downs of family business and a satchel full of other subjects.

Great chemistry. He wanted my take on business in North America, particularly the car industry and the woes of GM, Ford

We talked about Iscar, the sale to Buffet, his business career, family business and a satchel full of other subjects.

and the Tier Ones. I wanted to get his take on Israeli politics. He said that in business you can develop good people and work with them for a long time, but in politics you have no choice but deal with a bunch of difficult personalities.

He had advice for Noah about family business. The two of them seemed to hit it off immediately. Eitan’s oldest son is Noah’s age and is trying his hand at being an internet entrepreneur.

The interview lasted 75 minutes, and I felt like we could have talked for hours, but I knew that other people were waiting for a piece of his day in Chicago.

So we left the elegant, old Standard Club to prepare for our later interviews that day. Noah was preparing to talk to the twenty-something owners of Threadless, a custom tee-shirt company rewriting the business script of retail (see One on One), and I was off to see the young entrepreneurs at Microlution, a machine tool startup on the Northwest side of Chicago.

Microlution is making a CNC milling machine, smaller than a desktop computer. The next version of the tool will have a tool changer with the same kind of tiny footprint or, to be more precise, handprint. These young engineers worked on this stuff when they were students at the University of Illinois and are now translating it into what they hope will be a viable business.

I think that they are doing something very cool. The current machine is potentially a design engineer’s best friend because the engineer could make prototypes literally at his desk by himself by passing layers of bureaucracy and enormous tooling expense in a traditional big company setting.

I was impressed with their product and I liked the way they think. I had a 5:00 p.m. reception back in downtown Chicago and I needed a ride. In a moment of inspiration I asked Andy Phillip, one of the brains at Microlution, if he would like to meet Eitan Wertheimer of Iscar. After a long moment of pondering his schedule, he said yes.

We stopped by his apartment in the city (he lives two blocks from Noah), so he could change into a suit and tie for the old school meet-and-greet for big shots at the Conrad Hilton on Michigan Avenue.

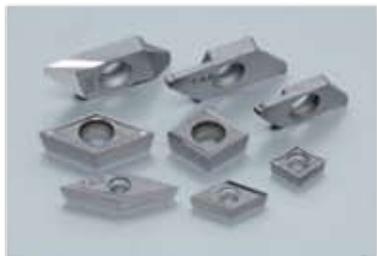
We walked into the reception (for the American/Israeli Chamber of Commerce) and saw Eitan Wertheimer surrounded by a gaggle of people. He immediately greeted me buoyantly and asked me if Noah was coming. I told him no, but I had another young guy named Andy Phillip that he had to meet. I briefly described the Microlution product, and then the two men started to talk shop. After 10 minutes they exchanged cards and promised to email. Then Eitan introduced Andy to several men from Pratt and Whitney, with whom he has a big joint venture making jet engine blades in Israel. One of the aircraft engine guys we met has 450 design engineers working under him.

I got a huge kick out of it. Will anything great come of the interviews and the matchmaking? It already has for me.

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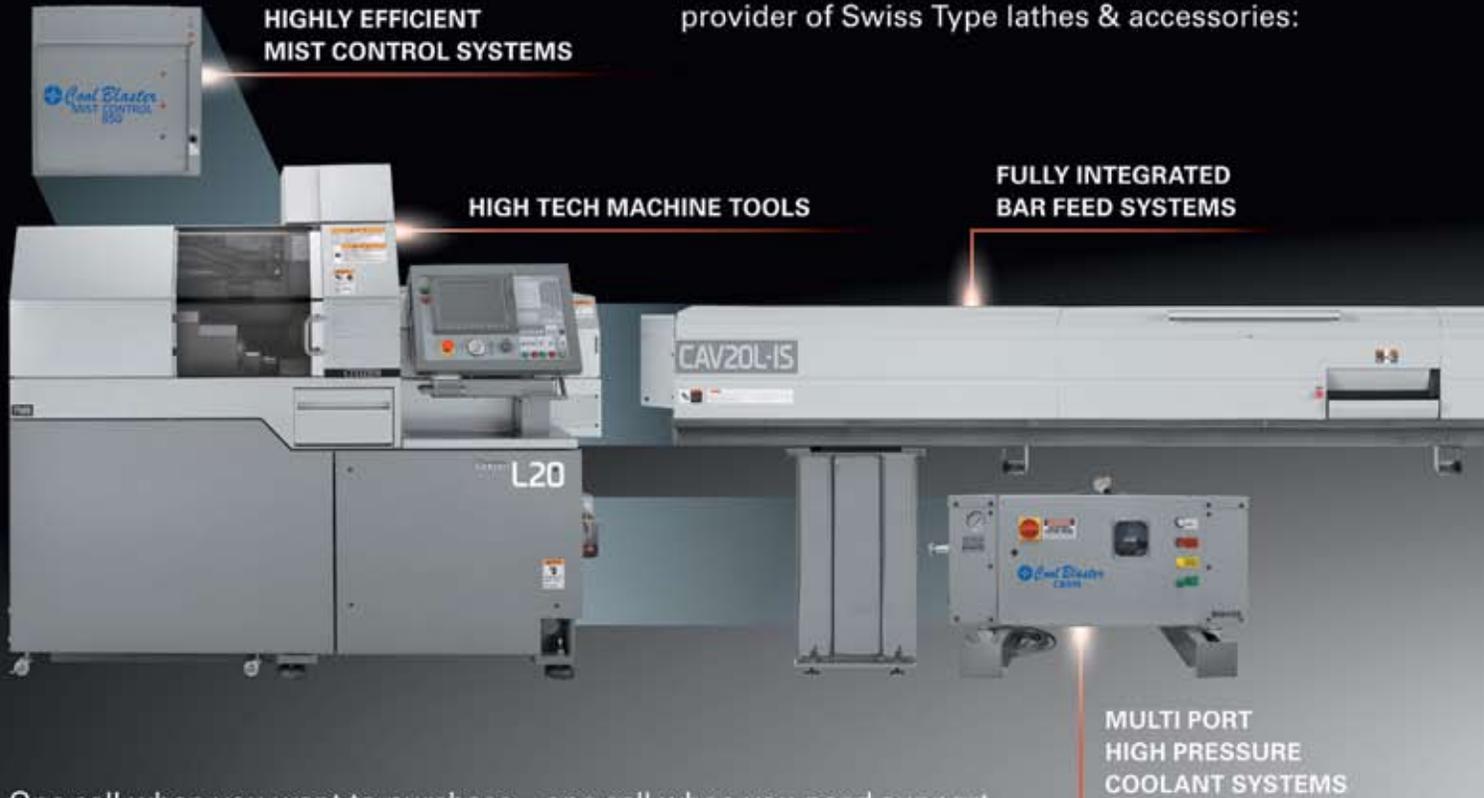
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