

CNC WEST

Volume 35 - Issue 6

THE MAGAZINE FOR WESTERN METAL WORKING MANUFACTURING

WESTEC PREVIEW ISSUE

- 
- **ORANGE IS THE NEW VISE**
 - **EFFICIENT PRODUCTION IS A WIZ**
 - **TIM PAUL'S CAD/CAM PERSPECTIVE**
 - **TOOL GRINDING SHOP SIMPLIFIES THE CUTTING EDGE**
 - **SKIMMING SMART AND SAVING**
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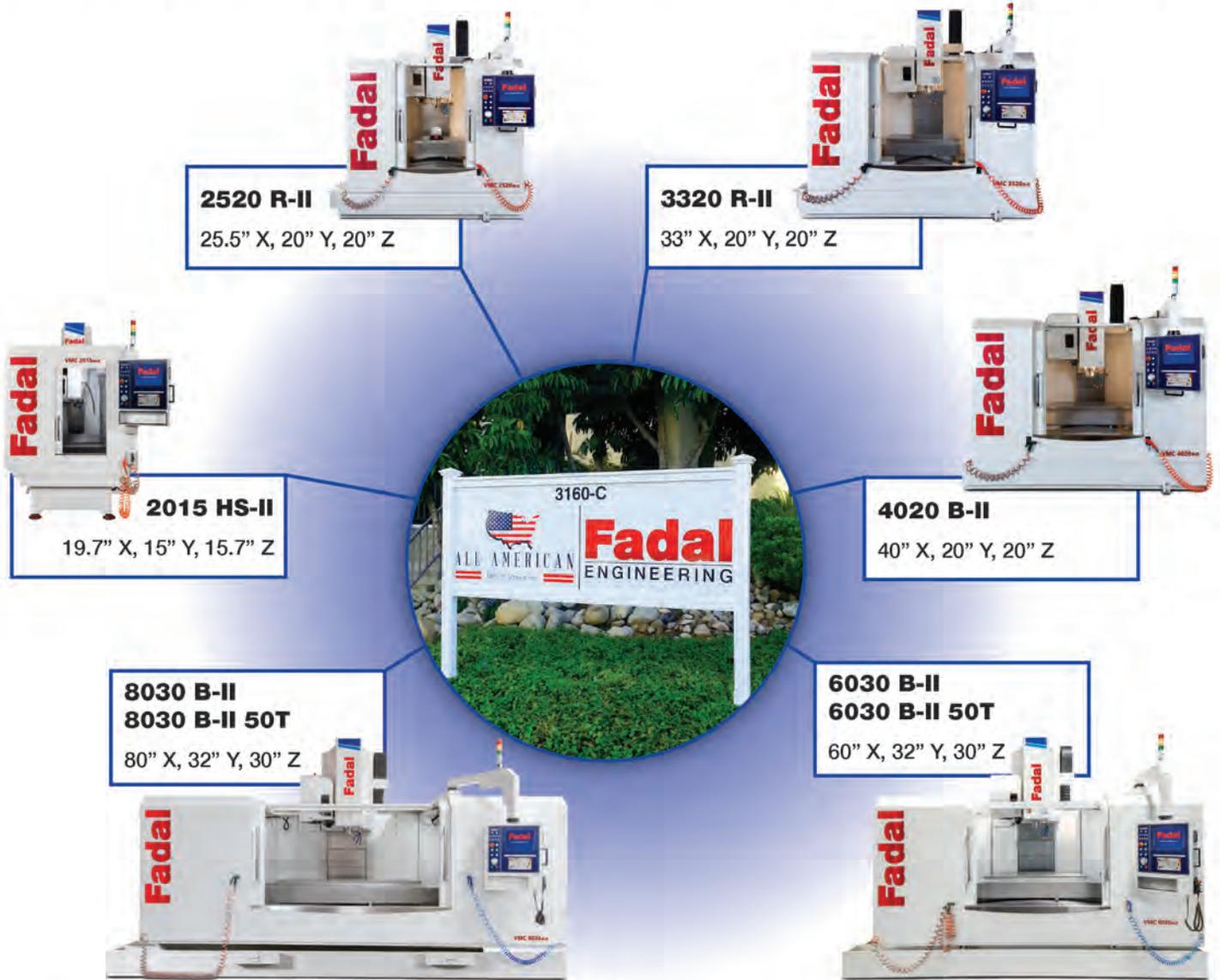
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CNC West

Aug/Sept 2017 • Volume XXXV No 6

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Within the help of Okamoto grinders, Eric Sun makes quality vises in Placentia, CA
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PNM in Fresno turned to FactoryWiz monitoring system.
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Jason Neal, facilities manager at Golden State Engineering in Paramount, Ca. The company is happy with the Smart Skim recycling system they purchased
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Coming in Oct/Nov 2017
Cutting Tools & Workholding — Looking for innovative developments offering better, faster, more accurate cutting tools and material? This is the issue to search. Also look here for workholding, fixtures, sensors and tool management ideas.
Editorial: Sept. 20, 2017
Ad Space: Sept. 26, 2017
Ad Material Oct. 2, 2017

CNC WEST

VOL. XXXV NO. 6
Aug/Sept 2017

The oldest regional industrial publication serving the Western States manufacturing managers, owners and engineers from 1 employee to those larger plants of 5,000 or more. Its editorials feature numerical control applications in all size machine shops, tooling, programming, robotics and shop operations, training personnel, financing of new equipment, cutting tools and all related manufacturing requirements. Coverage extends to all of Arizona, California, Oregon, Washington, Nevada, Utah, Idaho, Colorado, New Mexico and Texas.

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Westec-The Other FALL Classic

When I think of Fall Classics I think of the world series. And fingers crossed that my local team the Los Angeles Dodgers will be in it. It is looking good at the moment. But there is another Fall classic in the Los Angeles area. It is WESTEC the every other year machine tool show held in the Los Angeles Convention Center.

Now I must be honest. Westec is NOT what it used to be. When I first came into the business in 1980, Westec was an event like no other on the west coast and maybe the machine tool industry. It attracted nearly 50,000 attendees over 4 days and it was one long party. Businesses were a little more frivolous with their money and wining and dining was at a whole different level. Booth babes were the norm and attendees came as much for the part atmosphere as they did to see machines. Now days things have settled down and more than likely the pretty girl working the booth knows more about machine tools or software or accessories than you or me.

Regardless it is still a great way to see live demos, go learn something and maybe get a great deal on something.

This issue of CNC WEST has over 15 pages of editorial dedicated to Westec. That is along with our normal array of feature articles that keep our readers anxiously awaiting the next issue. Our cover article this issue is about a southern California manufacturer of vises who bought an Okamoto grinder and has been very happy with the results. We also have another article on what grinders are doing to help PROMAX Tooling in northern California.

There is also an article on an issue we all like to sweep under the rug but is very real and can not be ignored. It is a story of a Paramount, CA. shop that bought a SmarkSkim to help keep in compliance with OSHA. Our other tells the tale of PNM Machining in Fresno and how they purchased a FactoryWiz monitoring system from Refresh Your Memory and it helped insure that spindles are turning and that they are running at capacity.

That is in addition to our normal Industry News and New Product sections that we deliver each issue. And while I know there won't be 50,000 people at Westec those that do go be sure to stop by the Arnold Publications booth.

Enjoy!

Sincerely

Shawn Arnold

Shawn Arnold

Publisher

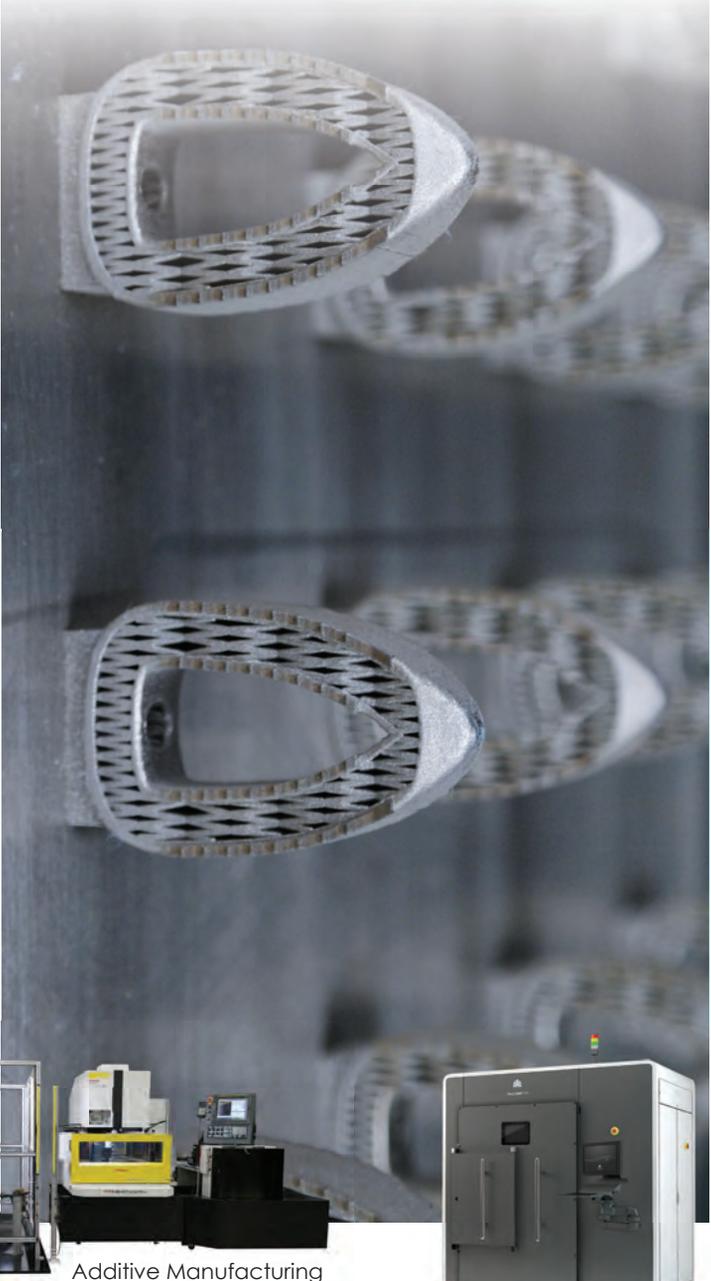
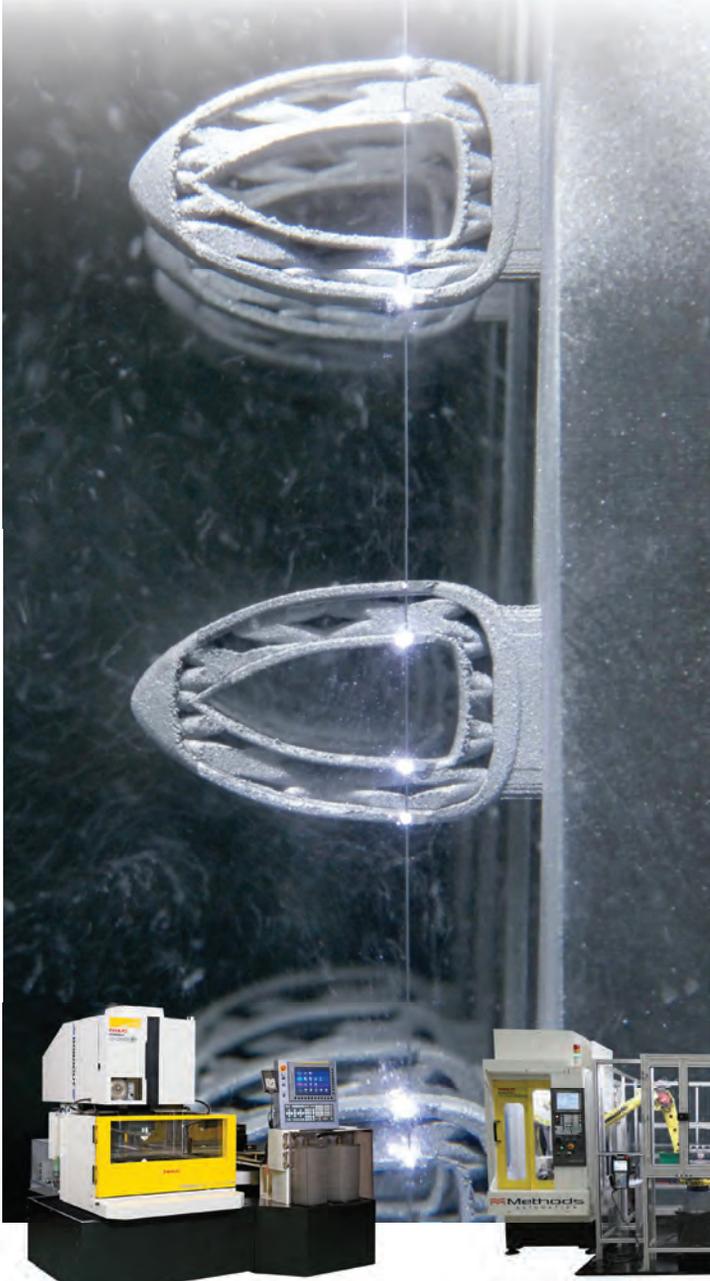


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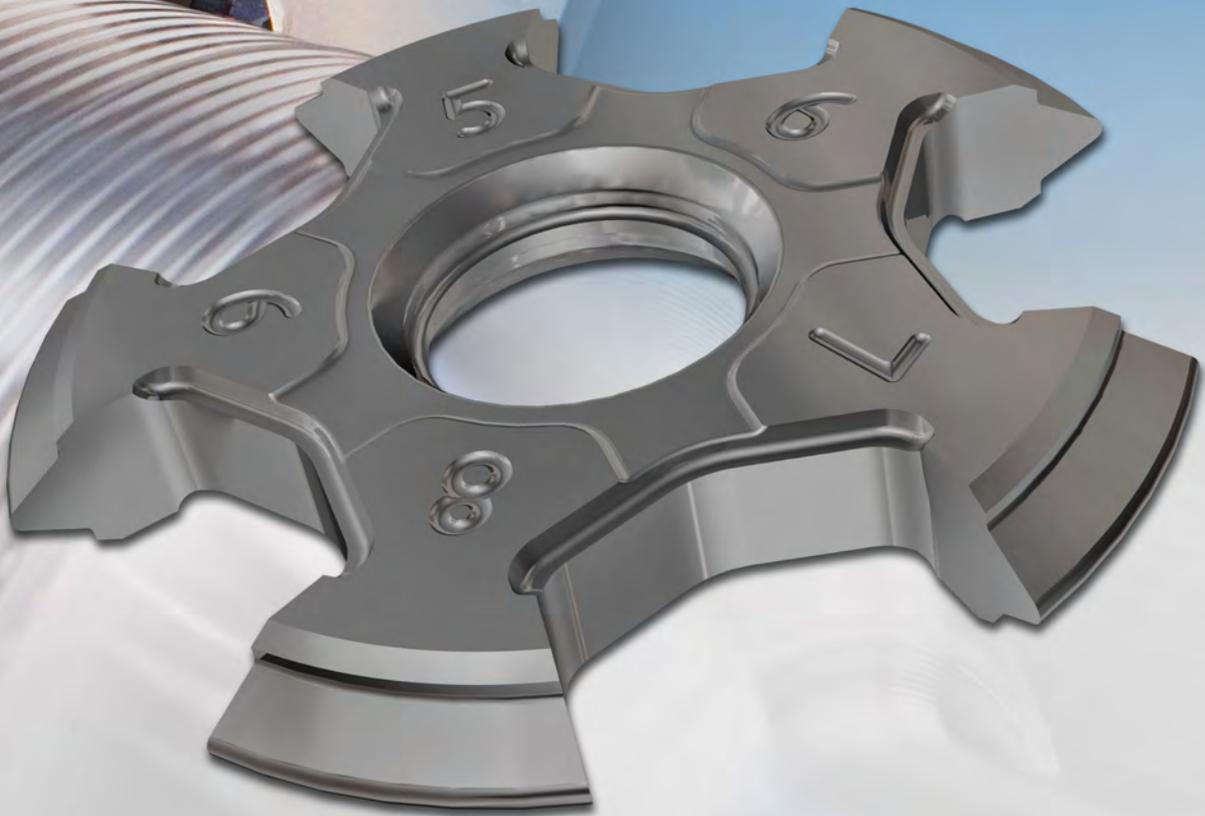


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Faraday Future Scraps Las Vegas Plant Plans

The electric car maker said in mid July it is deserting its plan to construct a \$1 billion manufacturing plant in southern Nevada eight months after suspending the project and sinking at least \$120 million into it.

Faraday Future halted work on the project outside Las Vegas last November, calling the stoppage then a "temporary adjustment" that wouldn't affect plans to begin production in 2018.

Faraday Future chief financial officer Stefan Krause said the decision to scrap the plant was due to a shift in business strategy. The Gardena, California-based company said in a statement that it will now look for an existing facility to produce its electric vehicles in California or Nevada.

Boeing, United Airlines Announce Order for 100 737 MAX 10s

Boeing and United Airlines announced an agreement at the 2017 Paris Air Show to convert 100 of its current 737 MAX orders into 737 MAX 10s, becoming the largest single 737 MAX 10 customer in the world.

United also announced an order for four additional 777-300ER aircraft. United expects to begin taking delivery of the 737 MAX 10 in late 2020.

The 737 MAX is the fastest-selling airplane in Boeing history.

Navy Awards California Firm \$37.1 Million Contract for Drones

Kratos Defense & Security Solutions Inc. received a big contract for jet-powered target drones, used in military war games. The U.S. Navy announced the \$37.1 million contract modification on June 27.

Under the deal, Kratos' aerospace subsidiary in Sacramento will build 45 BQM-177A subsonic aerial targets at low-rate initial production for \$34.6 million.

Under a separate, \$2.5 million portion of the deal, Kratos will supply 315 mission

equipment installation kits, 30 radar altimeters, technical manuals, training materials and equipment as well as logistics support services.

Work will continue through April 2019.

San Diego-based Kratos said it expects separate contracts – covering peculiar support equipment, initial systems spares, external payload systems and flight consumables – to follow shortly.

It added that a second low-rate initial production order in fiscal 2018 should be 25 percent higher than its first low-rate initial production order.

Boeing, SpiceJet Announce Commitment for 40 737 MAX airplanes

Boeing and SpiceJet signed a memorandum of understanding for 40 737 MAX airplanes. The agreement, valued at \$4.7 billion at current list prices, is split evenly between 20 new orders for the 737 MAX 10 and conversions of 20 of the low-cost carrier's 737 MAX 8 airplanes from its existing order to 737 MAX 10s.

SpiceJet plans to grow its operational fleet to 200 airplanes by the end of the decade and looks to expand regionally with the new 737 MAX family of airplanes. SpiceJet will take delivery of its first 737 MAX in 2018.

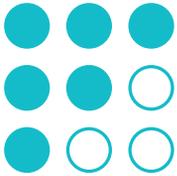
Tustin, CA. Aerospace Co. Buys Competitor

Elite Aerospace Group in Tustin acquired Halo Industries Inc. on undisclosed terms.

Halo, founded in 1989, manufactures precision-machined components for the aerospace and communication satellite industries for Boeing Inc. and others. Its 20,000-square foot headquarters in Huntington Beach will now house Elite's new division, Elite Space Services.

Elite Aerospace is an aircraft component design, engineering, and manufacturing company.

Continued on page 112.....

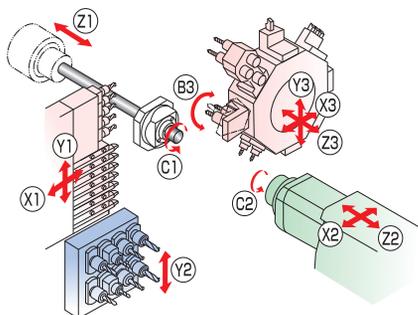


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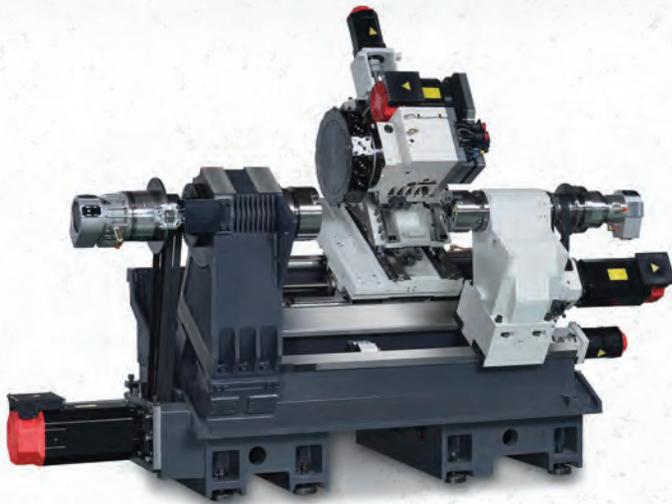


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Kit B206 HS06	6"	0.472	10MM	0.787	2"	KT-6200F	\$ 32.73	RKT-6200A	\$ 78.18
						KT-6400F	\$ 91.15	RKT-6400A	\$ 115.42
Kit B208 HS08	8"	0.551	12MM	0.984	2"	KT-8200F	\$ 42.85	RKT-8200A	\$ 89.55
						KT-8400F	\$ 72.88	RKT-8400A	\$ 159.00
Kit B210 HS10, N210	10"	0.630	12MM	1.181	4"	KT-10200F	\$ 47.85	RKT-10200A	\$ 132.47
						KT-10400F	\$ 78.57	RKT-10400A	\$ 213.26
Kit B12 HS12	12"	0.709	14MM	1.181	2"	KT-12200F	\$ 68.57	RKT-12200A	\$ 179.33
						KT-12300F	\$ 102.82	RKT-12300A	\$ 270.67
Kit B212 N212	12"	0.827	16MM	1.181	2"	KT-12208F	\$ 68.57	RKT-12208A	\$ 179.33
						KT-12308F	\$ 102.82	RKT-12308A	\$ 270.45

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B210, HS10	10"	KT-100HJ2-U	\$354.24	KT-100HJ2-X	\$370.44
B-12	12"	KT-120HJ2-U	\$399.22	KT-120HJ2-X	\$415.42
B-212, HS12	12"	KT-128HJ2-U	\$400.09	KT-128HJ2-X	\$416.29
B-15	15"	KT-150HJ2-U	\$538.65	KT-150HJ2-X	\$554.85



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Chuck Make/Model	Size	Part Number	Price EA
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B208, N208, HS08	8"	ED-MJSK8LA	\$783.75
B210, N210	10"	ED-MJSK10LA	\$783.75
HS10	10"	ED-MJSK10HA	\$783.75

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It's official – Expansion in U.S. manufacturing technology orders accelerating

June manufacturing technology orders climbed 6.5 percent over May, according to a report released by AMT – The Association For Manufacturing Technology. The latest U.S. Manufacturing Technology Orders (USMTO) report also shows a year-over-year increase of more than 10 percent, the fifth consecutive month posting a year-over-year gain.

The U.S. manufacturing technology market has been weak since oil prices began to drop dramatically in June 2014. Orders peaked on a monthly basis that September at \$643 million and bottomed out at \$260 million in June 2016. IMTS - The International Manufacturing Technology Show, held in September 2016, rekindled the market, but it was not until March 2017 that year-over-year numbers began to consistently show a positive, accelerating trend upwards. Now, three months later, June figures are up 10 percent over June 2016 and represent the volume and growth that supports an announcement that the manufacturing technology market is officially expanding.

“If the USMTO numbers aren’t convincing enough that a recovery is underway, certainly the buzz among our members underscores that a recovery is indeed underway,” said AMT president Doug Woods. “Members have shared that the aerospace supply chain in the Midwest is hot; auto orders doubled between May and June; and sales in the Southeast exploded. Over the next six months, they look forward to a broadening of the recovery into areas like agricultural, construction, power generation and off-road machinery industries.”

The USMTO data supports the anecdotal evidence from AMT members. Automotive-related orders were up 109 percent from May and the aerospace industry’s bookings of new production technology were up 47 percent. While the largest growth by any region is the 42 percent increase in orders originating in the states from Tennessee north to Michigan, the Southeast and West are posting the fastest growth rates year-to-date in manufacturing technology orders.

Key indicators that businesses in the manufacturing technology sector rely on have been improving steadily. Housing starts are an important indicator of trends as every new house has at least seven new appliances, a car in the driveway, and a consumer or two with disposable income. In June, housing starts topped 1.2 million which isn’t at peak levels but continues an upward trend in the indicator. The increase goes hand-in-hand with the continuing strength of consumer confidence which, according to the University of Michigan’s Consumer Confidence, has been over 90 since September 2016.

It isn’t only the consumer that is fostering growth in the need for additional manufacturing capacity. USMTO tracks well with the Purchasing Managers’ Index (PMI) produced by the Institute of Supply Management. Any mark over 50 represents an expansion and the index is 56.3 in July, up from the June level. Business’ profitability over the past three quarters primes the pump for expansion on corporate investment in new durable goods and production equipment.

Mark Killion, director of U.S. Industries for Oxford Economics, noted, “Recent increases in new orders for machine tools are supported by a better environment for business investments in the U.S. and globally, especially in the sectors for metals products, electrical and industrial machinery.”

AMT has recently replaced one of its key indicators with the Gardner Business Index (GBI) which tracks well with USMTO and turned upwards markedly in December 2016, about 90 days before the recognizable upturn in USMTO. “As we expected, machine tool orders have performed well in recent months. The backlog index from the GBI: Metalworking bottomed out in January 2016. The backlog index tends to lead machine tool consumption by 14 to 20 months. Since the backlog is still growing at an accelerating rate, we expect solid growth in machine tool orders through at least the end of 2017,” commented Steve Kline, director of market intelligence, Gardner Business Media and creator of the GBI.

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ORANGE VISE

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C32-80CH-iQ



Eric Sun, owner and president of Orange Vise

ORANGE IS THE NEW VICE

Eric Sun is the owner and president of Orange Vise Company in Placentia, Ca. After graduating college in 2005 with a computer science degree, he worked in several machine shops, including one in his garage, before starting Orange Vise in 2012. “I didn’t always set out with vises specifically in mind,” describes Eric. “I knew I didn’t want to sit in front of a computer all day and doing something more hands on seemed the way to go. I started manufacturing other machinery before seeing potential and opportunity in the vise market.”

Eric and his team specialize in manufacturing CNC workholding devices. They’ve taken an age-old product and maximized the concept for a modern world. Eric thought that many manufacturers’ vises lack continuity between products, and they seemed to treat each vise as its own thing. He also noted how he felt there was room for improvement in quick-change abilities, both in jaws and in locating systems. “We wanted to pull quick change together with future proof continuity,” describes Eric. “Our vises are from top to bottom quick change. Everything from the jaws to how it mounts to the table is designed to be quick and repeatable.” Eric understands that not everyone has a giant pallet pool with dedicated fixtures and that flexibility is important. He also knows that the side effect of flexibility is there are more places to collect unwanted chips. “Chip covers and guards are pretty much industry standard,” explains Eric. “But it can be a problem if all they do is block the larger chips and let the fine ones get in to jam up the mecha-

nisms. We designed the Orange Vise quick-change system with that problem in mind. The only way to keep a vise clean is to clean it, so our Orange Vise products completely disassemble in under a minute.” They added evacuation ports and slots in certain locations so when it is sitting in the machine you can use a coolant gun or an air gun to blow everything out. The entire vise then comes apart and reassembles quickly, easily, and repeatably. “In the beginning those features set us apart,” continues Eric. “Five years later we continue evolving as a company and expanding on those features.”

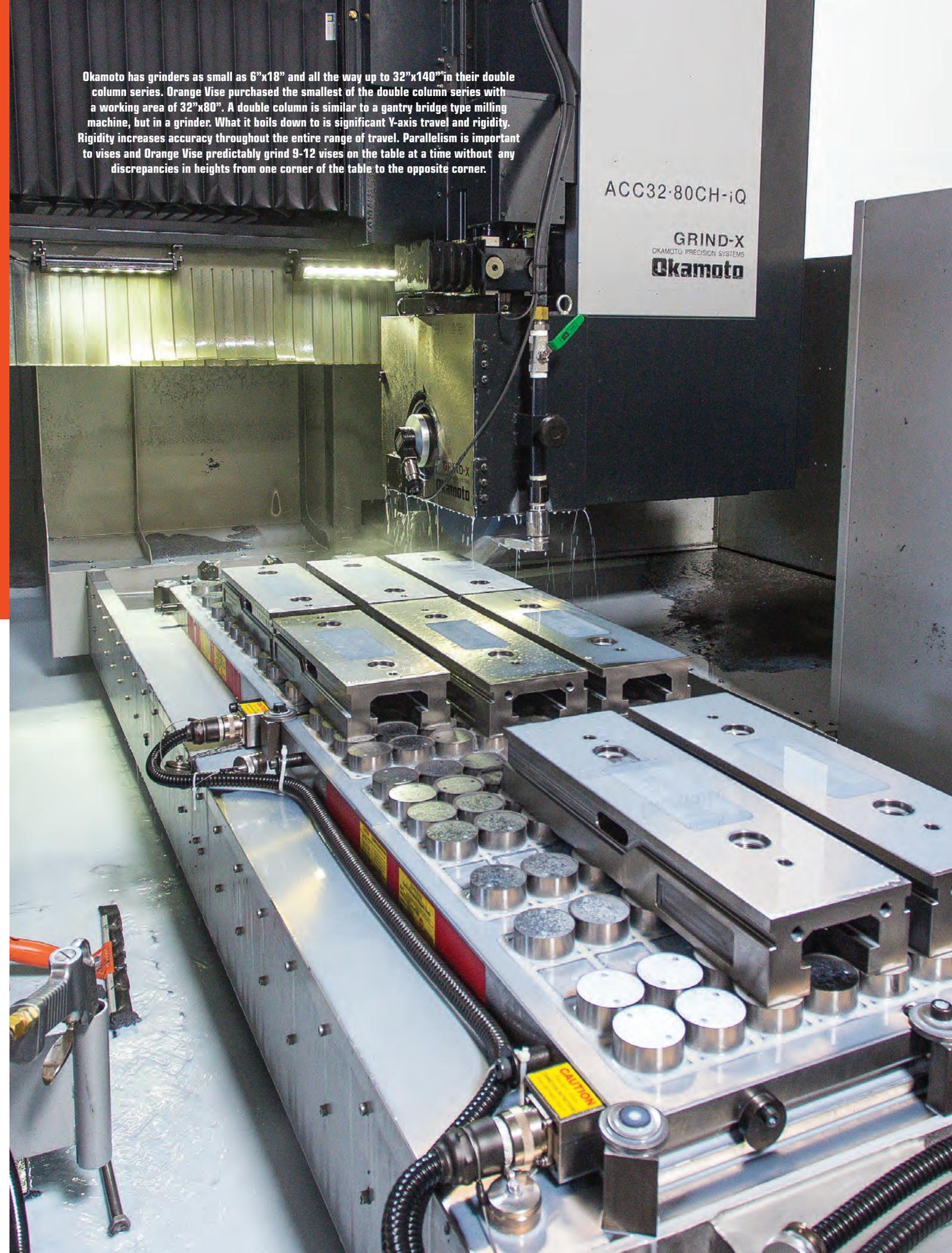
Orange Vise has a variety of standard and custom sizes on offer. Their smallest vise is 4.5”x12” and their largest is 6”x26”, but all share interchangeable parts and continuity. “Our vises have the exact same heights and depths,” details Eric. “We kept everything uniform so everything can be used together. You can use our 4.5” vise right next to our 6” vise and span a single part between any of our products.” The only difference is the capacity based on the length of the vise. Their 6”x17.5” vise is one of their most popular items. It was designed specifically for users of 30”x16” vertical machining centers like the Haas VF2. “Virtually every manufacturer has a 30”x16” vertical machine,” tells Eric. “We offer vises, and turn key kits that are made for this popular size machining center.”

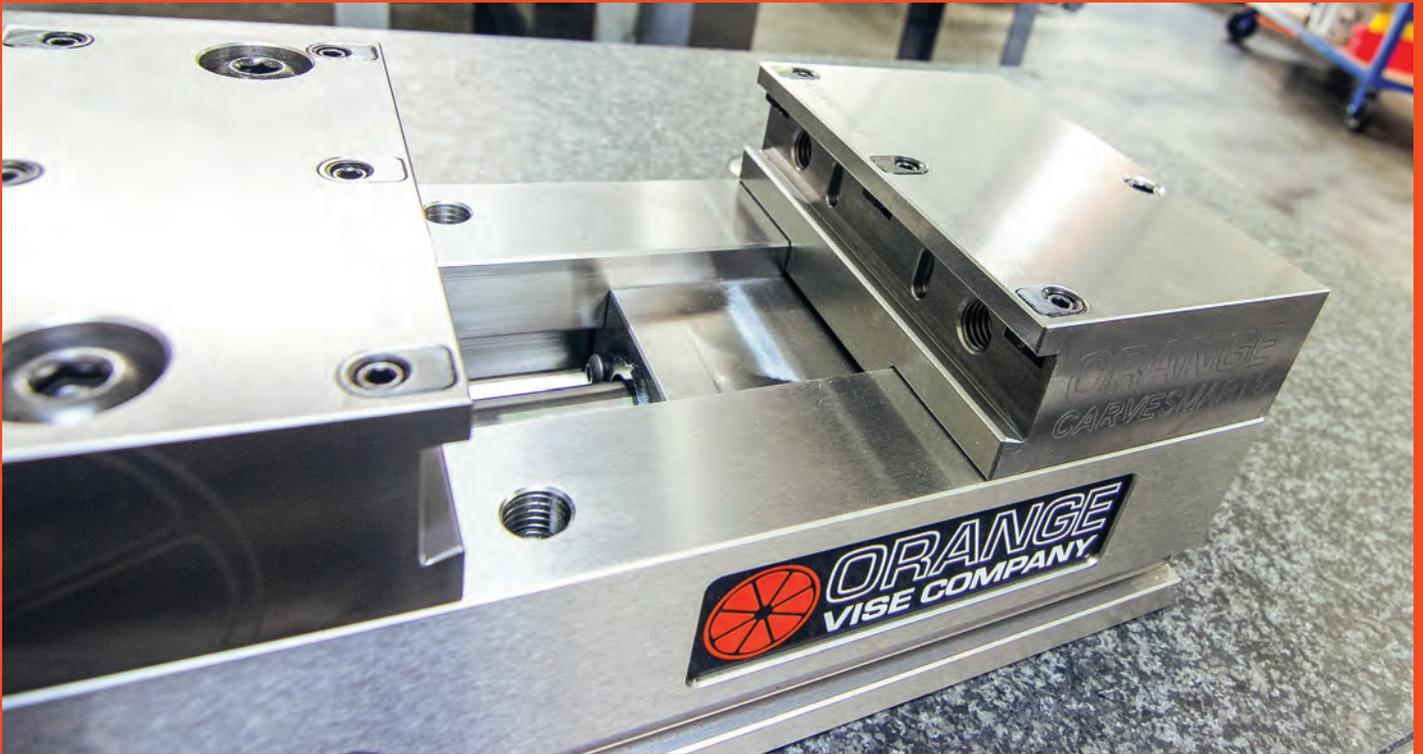
Each vise is manufactured in Placentia, Ca. out of cast iron and steel. Orange Vise uses a continuous cast iron bar from a company based out of Chicago as their starting point. It gets roughed in on their Doosan vertical mill before being sent out

Okamoto has grinders as small as 6"x18" and all the way up to 32"x140" in their double column series. Orange Vise purchased the smallest of the double column series with a working area of 32"x80". A double column is similar to a gantry bridge type milling machine, but in a grinder. What it boils down to is significant Y-axis travel and rigidity. Rigidity increases accuracy throughout the entire range of travel. Parallelism is important to vises and Orange Vise predictably grind 9-12 vises on the table at a time without any discrepancies in heights from one corner of the table to the opposite corner.

ACC32-80CH-iQ

GRIND-X
OKAMOTO PRECISION SYSTEMS
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Top - Orange Vise bodies are ground on four sides as standard procedure. Patented CarveSmart dovetailed jaw features are machined into the jaws..

Bottom Left. Orange Vise starts with a continuous cast iron bar made in Chicago.

Bottom Right - Increased grinding capability has allowed Orange Vise to grind subplates and vises with better consistency and less effort.

for heat-treating. When it returns, it heads to the DMG MORI horizontals for two operations and machining on all six sides, leaving no visible raw casting. Some go out for black oxide coating before being put on the Okamoto grinder for precision flattening and squaring. After grinding they are cleaned, oiled, assembled and packed for customer delivery all right here in the USA.

Orange Vise has been in the process of upgrading equipment since moving into their now overflowing 7200 sq.ft. manufacturing facility. Their latest upgrade is an Okamoto Grind X CNC grinder purchased through local So-Cal dealer Machinery Sales Co. It was installed late last year, and was the final piece in the manufacturing puzzle that Eric needed to ramp up production. "Our original priority was making sure we had updated

machining equipment," explains Eric. "We added to our milling and turning capabilities first before upgrading our grinder." Orange Vise uses a combination of DMG MORI horizontals and lathes, a Doosan vertical and a Brother M140X1 multi-tasking machine. Milling was initially their largest holdup so they significantly increased their milling capabilities with a fairly large horizontal milling center. "With the added milling capacities grinding became the final bottleneck for us," details Eric. "We started out with a 16"x32" Taiwanese grinder, but knew we wanted something larger, faster and more accurate eventually. There are fewer players in the market offering quality CNC grinders than say in mills or lathes. We like that Okamoto is from Japan. Their quality and reputation drove us to them."

Okamoto has grinders as small as 6"x18" and all the way up

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Instead of using a standard grinding chuck Orange vise went with a milling chuck from Techniks. They chose that instead of a traditional grinding chuck because the surface is replaceable. A grinding chuck of this size would be worn out after a few hundred times leveling the table and would cost almost 50k. In contrast the milling chuck surface blocks can be replaced for about \$1000. "Because they are common steel and replaceable we can flatten that table as many times as we want," Explains Eric. "Because cost is out of the equation we flatten our table constantly. Instead of relying on operator discretion, it is a blanket protocol to dress the table every time."

to 32"x140" in their double column series. Orange Vise purchased the smallest of the double column series with a working area of 32"x80". "The double column was important to us for a few reasons," tells Eric. "A double column is similar to a gantry bridge type milling machine, but in a grinder. What it boils down to is significant Y-axis travel and rigidity. Rigidity increases accuracy throughout the entire range of travel. Parallelism is important and we can predictably grind our vises. We might have 9-12 vises on the table at a time and we don't want any discrepancies in heights from one corner of the table to the opposite corner. The double column gives us a lot of confidence. Buying multiple smaller machines was an option but we went with the larger version not only for capacity but also for future capabilities. It just made more sense to us." Orange Vise can grind plates up to the full size of 32"x80" table, giving them ability to make quick-change subplates their vises mount to. "If a customer buys a new machine they can then order a complete kit that includes the vises and the subplate. Customers don't have to do any homework, they are ready to go. Instead of taking hours to change out vises they can do it in minutes. This wouldn't be as easy without the capabilities of our Okamoto grinder."

The first aspect of the Okamoto was to relieve the production bottleneck, but Orange Vise also made a large step up their quality and precision. "Customers often ask how closely matched the bed heights on our vises," expands Eric. "For us, the priority is getting them flat and not just hitting some nominal dimension. That being said, it just so happens that we are also hitting nominal dimension. A large part of that is because of the Okamoto." The new grinder has far more automation

than the grinder they had before, allowing for less human interaction to produce the desired results. An example would be the Okamoto will flatten the table then auto compensate for the new height. "Because we can rely on it holding a tight tolerance we have a zero percent reject rate," brags Eric. "Our reject spec is +/- 5 tenths and the Okamoto holds +/- 2 with minimal effort. We are really pleased with our purchase. Because the Okamoto is a specialized machine, install was done by the factory, but service and support from Machinery Sales Co. has been awesome. Garry Frost and his team have been a pleasure to work with. So much so that we will look at the line of Kitamuras when it comes time to add more milling centers to our operation."

Orange Vise is blossoming, and already looking towards future expansion. They are in a hiring phase right now, and hope to triple their square footage in the next twelve months. "We are in a constant state of evolution," continues Eric. "Though trial and error and customer feedback we are delivering what I feel is a better and better product. Some people cringe at warranty issues, but we don't. We like when a customer voices their concerns, instead of giving up and buying a competitor's vise. We learn a lot from our customers and value their input." Orange Vise's products have advanced over time, but the basic dimensions have remained the same. Customers can trust their vise investment is future-proof. Any new features Eric and Orange Vise add down the road can be retrofit to an older product. "Our customers will never be left with an obsolete vise," concludes Eric. "We know the value of repeatability and repeat customers."

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PNM CO. CNC MACHINING

Article & Photos by Sean Buur



The PNM team work and live by their company motto "quality counts"

EFFICIENT PRODUCTION IS A WIZ

Since 1976 PNM Co. CNC Machining has called California's central valley home. As one of Fresno's leading manufacturers, they pride themselves on changing people's lives with every part they machine. Now with the help of a FactoryWiz monitoring system by Northern California based Refresh Your Memory they are doing it more efficiently.

PNM is a job shop with decades of experience in the medical industry. Their expertise began out of necessity when a friend was paralyzed in an accident. "Our owner and a few others got together to machine wheelchair solutions for their paralyzed buddy," explains PNM director of operations Mario Persicone. "He went off on his own and formed PNM Co. in the late 70's and 40 years later we still remain a leader in wheelchair technologies." With 20,000 sq.ft. of manufacturing and another 10,000 sq.ft. building dedicated to assembly and warehousing, PNM utilizes every one of their 48 full time employees. "Medical is our primary industry, serving a variety of customers in the wheelchair industry," continues Mario. "But over the last decade we have worked hard to diversify our customer base. Sixty percent of what we run is aluminum with the remaining 40% a mixture of stainless, plastics, and mild steel. It was easy for us to evolve into other industries like automotive, pumps, camera and other commercial industries. If there is production involved we love it."

Mario Persicone has been in the trade since 1988 when he started with PNM right out of high school. "I got my first job here with PNM as a janitor," tells Mario. "From that first day I fell in love with the trade. I moved to other shops in the area and gained experience everywhere I could." He has run the gauntlet of the trade as operator, setup guy, programmer and designer and in 2001 he returned to PNM to head up their prototype division. "PNM was always home," describes Mario. "It is a family run business and we are all family. We work together, we play together and that atmosphere makes PNM a great place to work." Mario has been director of operations now for 6 years and misses being on the machines, but this position has rewarded him with different types of challenges.

One of the challenges Mario, and everyone else in his position are faced with daily is how to keep the spindles turning. PNM runs two shifts a day covering 24 hours and is manned 7 days a week, but Mario was questioning if they were at capacity. "We have 20 CNC mills and 10 CNC lathes," explains Mario. "We are on Kanban systems and have customer stocking programs paired with our JIT manufacturing. We have 2 day lead time for stocking parts so we carry a lot of inventory. More and more we are automating how we manufacture by adding palletized horizontals and robotics." As a job shop PNM's needs change every time the phone rings so Mario has

FactoryWiz		Status	Data Entry	Reports	Maintenance	Configuration
		Map View			Page Options	
Idle	VM1 MDI112619 (0 Parts) Idle for 21m				L0%	OEE 28%
Running	VM2 O00001 (0 Parts) Albert Fletcher Running for 66s				L0%	OEE 40%
Idle	VM3 PNM00109 (0 Parts) Generic No Operator Idle for 5m				L0%	OEE 47%
Idle	VM4 TICP201562 (0 Parts) Idle for 33s				L0%	OEE 24%
Running	VPC1 TICP201887-CK01 (0 Parts) Noe Bobadilla Running for 5m				L0%	OEE 95%
Paused	VPC2 EP0052 (0 Parts) Paused for 17m				L0%	OEE 85%
Running	VPC3 PNMHR06 (0 Parts) Running for 30s				L0%	OEE 90%

Top – The list view can be view from all of PNM's computer terminals throughout the office so managers can see how the shop is running.

Right – Report menu. This is where PNM Management runs reports and looks for the idle areas to see what they can improve to maximize production.

Bottom – Reports showing idle reasons selected by PNM operators. They use this to see where the majority of their time is lost and discuss in their daily huddle or weekly production meetings.

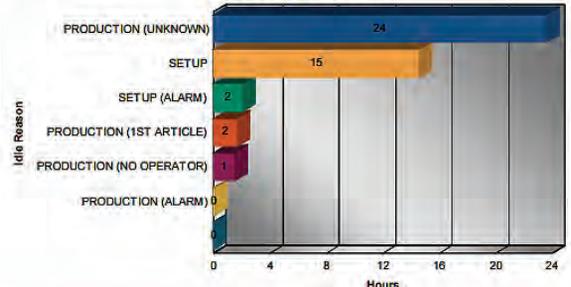
a variety of equipment at his disposal. PNM can be categorized into three primary manufacturing departments: horizontal mills, turning and verticals mills. Machines range from Swiss style machining centers to horizontal cells with a total of 66 pallets. "We feel here at PNM that our biggest competitors are Mexico and China," tells Mario. "So any time we can see high production with low labor interaction we are very happy. It is technology, pallets, robots, and automation that allow us to compete."

PNM recently added FactoryWiz machine monitoring to their vertical department and was quickly rewarded with results. "We love our E2 Shoptech ERP system," details Mario. "It has been great over the years and we get a ton of information from it. That being said, there were things I wanted to see as a manager that it didn't provide." The daunting task of researching machine monitoring systems began at IMTS in 2014 and it took two full years before pulling the trigger. "PNM's design engineer, Gary played a pivotal part in us getting the system," continues

vide

uctivity	48.6%
mance	48.6%
bility	100.0%
	100.0%

Top 10 Idle Reasons



al

Running	8.1%	Perf	8.1%	Productivity	8.1%
Paused	0.1%	Avail	100.0%		
Idle	91.7%	Quality	100.0%		



PNM just added a new Trinity robotic cell system attached to a Haas VF2ssYT with 42 tools. Mario estimates that with all 56 pallets populated that they will net 12-14 hours of run time with only three man hours of labor. PNM considers Mexico and China as their biggest competitors so any time they can see long production runs with low labor interaction they are very happy. Pallets, technology, robots, and automation keeps them competitive.

Mario. "I told him I wanted it and couldn't live without it, and he dove into the research we could take to the owners." They hit trade shows, spoke with other companies, and ultimately were impressed with John Hosmon and FactoryWiz. "John was really easy to talk to and understood what I needed. I didn't want a huge elaborate system, just one that detailed basic items that I specified. I needed real time data of machine on, machine off, and why." Key elements of PNM choosing FactoryWiz were flexibility, ease of use, price and customer support. You don't need to be an IT expert to run FactoryWiz and Mario loves that.

PNM is implementing the FactoryWiz upgrade in three installments. They began with the vertical milling depart which consists of 12 Haas VF2 machining centers. Four of their ma-

chines have aftermarket Midaco pallet shuttles connected to them. "I wanted to get settled in and running as quickly as possible," explains Mario. "Learning the ins and outs of the system would be way easier on a smaller scale doing it in phases. Phase one was our vertical department and it is running strong." Mario targeted that department because the machines were all the same and he felt the biggest gains could be netted back to him the quickest. They installed the system late last summer and were full gas on it by January 1st. Mario's original plan was to install the system without monitors on the shop floor so only management could see the data. His thought was that he could have a baseline for comparison, but was persuaded otherwise. "Talking to the FactoryWiz people they convinced me the per-



PNM have two Matsuura Hplus300s with 36 pallets, 3 Kiwa KH4500 with 6 pallets each and a Doosan 12 pallet machine. Having multi pallet systems helps minimize parts sitting on their shelves. Activate the job, call up the pallet and away they go. It is pretty common for PNM to get the order in the morning and have the parts out for plating in the afternoon. JIT all the time.

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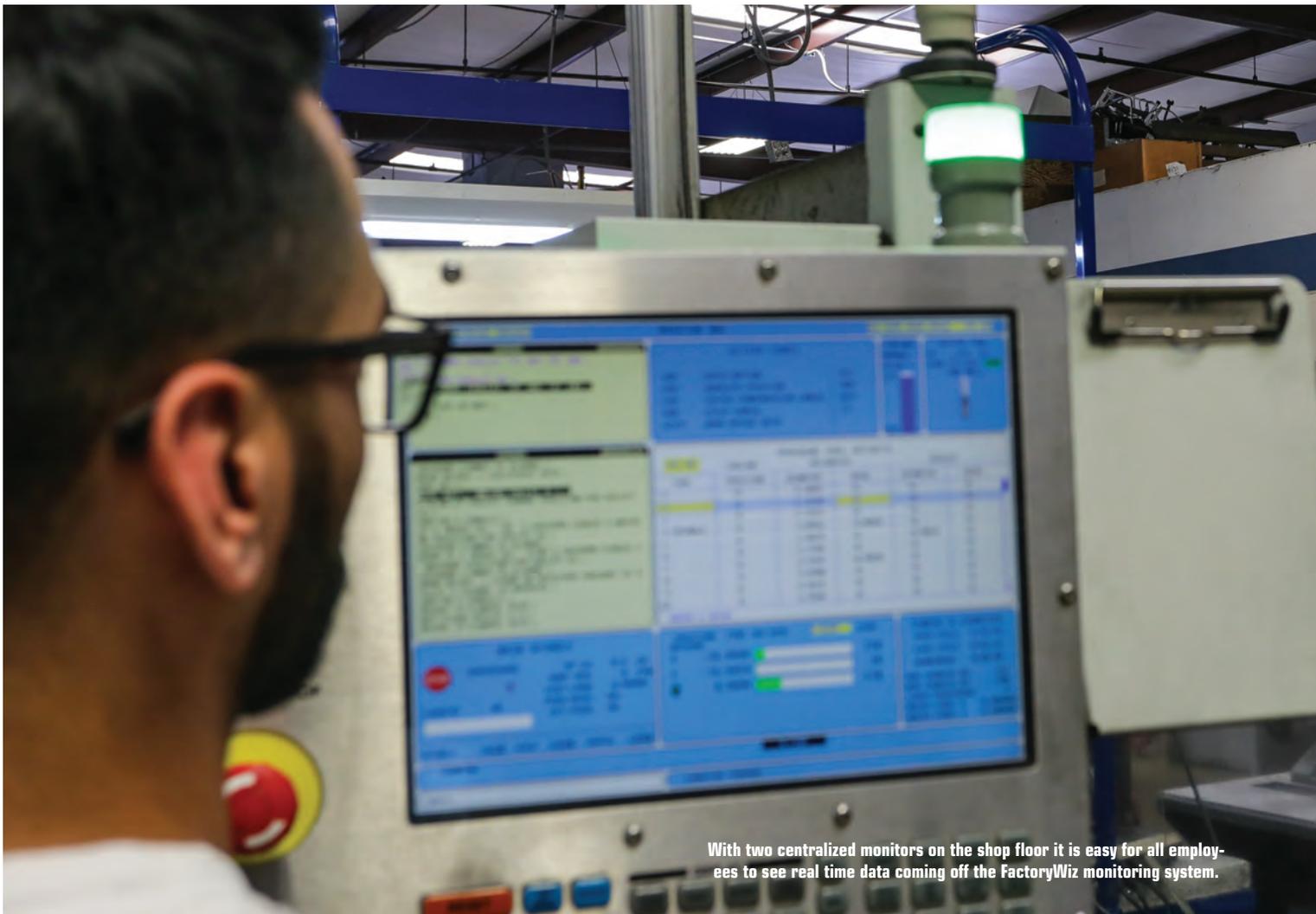
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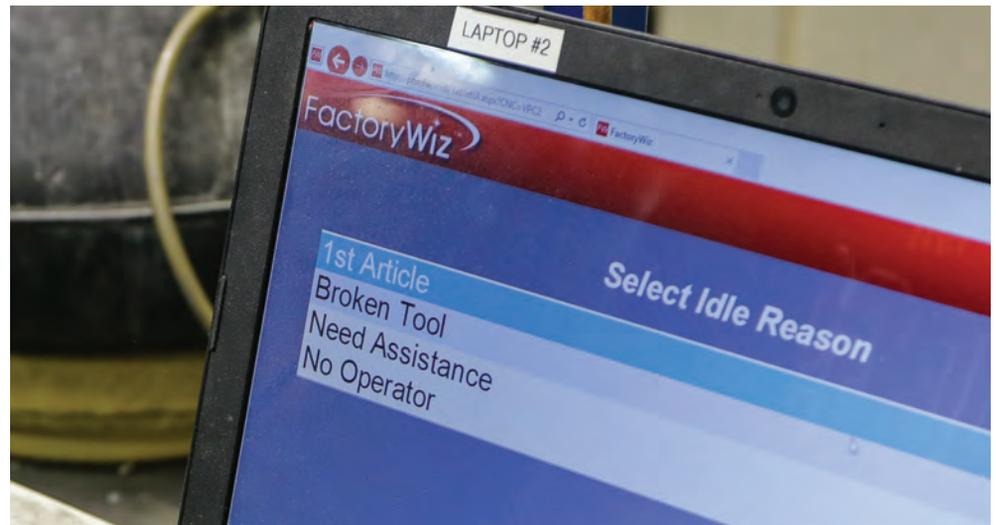
With two centralized monitors on the shop floor it is easy for all employees to see real time data coming off the FactoryWiz monitoring system.

formance gains by having shop monitors would be noticeable right away,” details Mario. “It is better to increase spindle time as soon as possible then to dwell in the past. They were totally right. Once we put two centralized monitors in the milling department the awareness of our operators heightened. We have a great bunch of hard working guys. I feel they are the dream team, so consciousness of how much time the machine sits idle came to a shock to us all.” PNM discovered right away that as a shop they were not being as efficient as they could, and it started at the top and not with the operators. The FactoryWiz software showed that first articles and no operator were two of the largest contributors to machines sitting idle. By upgrading their CMM software first article inspection time was reduced by 1/3 and a simple reevaluation of when/how shifts start and end netted easy gains.

FactoryWiz advocates the use of tablets at every machining center, but PNM installed PC laptops to tie in with their ERP system. They are transitioning into a paperless system and their ERP requires a PC. The laptops have worked out great to run their two most important shop systems all in one place. “We didn’t want a system that required my guys to spend a lot of time typing in information,” tells Mario. “So we broke it down into simple dropdown menus to select the idle reason. My opinion is we don’t need 1000 reasons for idle time. Idle is idle, but are they not running because of doing a setup? First articles?

Broken tool? The system is smart and once the machine is back running my operator selects the reason from the dropdown and it goes back to the last idle time in the system. We had Rich Hefner at FactoryWiz add us in a “summon supervisor” button so an operator can type in something like “need coolant”. Need coolant then flashes up on the monitor and someone who is not on a machine can go get coolant and bring it to that work station without the operator leaving his machine. Those little tweaks all add up.” Right out of the gate putting the monitors in the sky gained PNM a 10% increase in spindle utilization.

The buy in from the entire PNM team was nearly instantaneous. Operators love being able to see real time information and compare it to the rest of their colleagues. Mario’s top producer Mark keeps his spindle turning 90% of the time and the others do everything they can to match his numbers. They see how 2 minutes idle here and a five-minute idle there really impacts their numbers at the end of the day. The proof is in the numbers, and you can’t cheat the system. “We have profit sharing here at PNM and every dollar counts at the end of the year,” expands Mario. “My operators make choices all day long based on those numbers in the sky. Instead of grabbing a soda mid cycle they will wait until they start the next cycle to maximize their numbers. Everyone still gets to drink a soda, but they are making a conscious choice of when is the best time to grab one. My employees are the heart beat of this company and they love



having control over the numbers they generate. Plus as a manager it shows where I need to improve at delivering them the best tools and processes to do their job.”

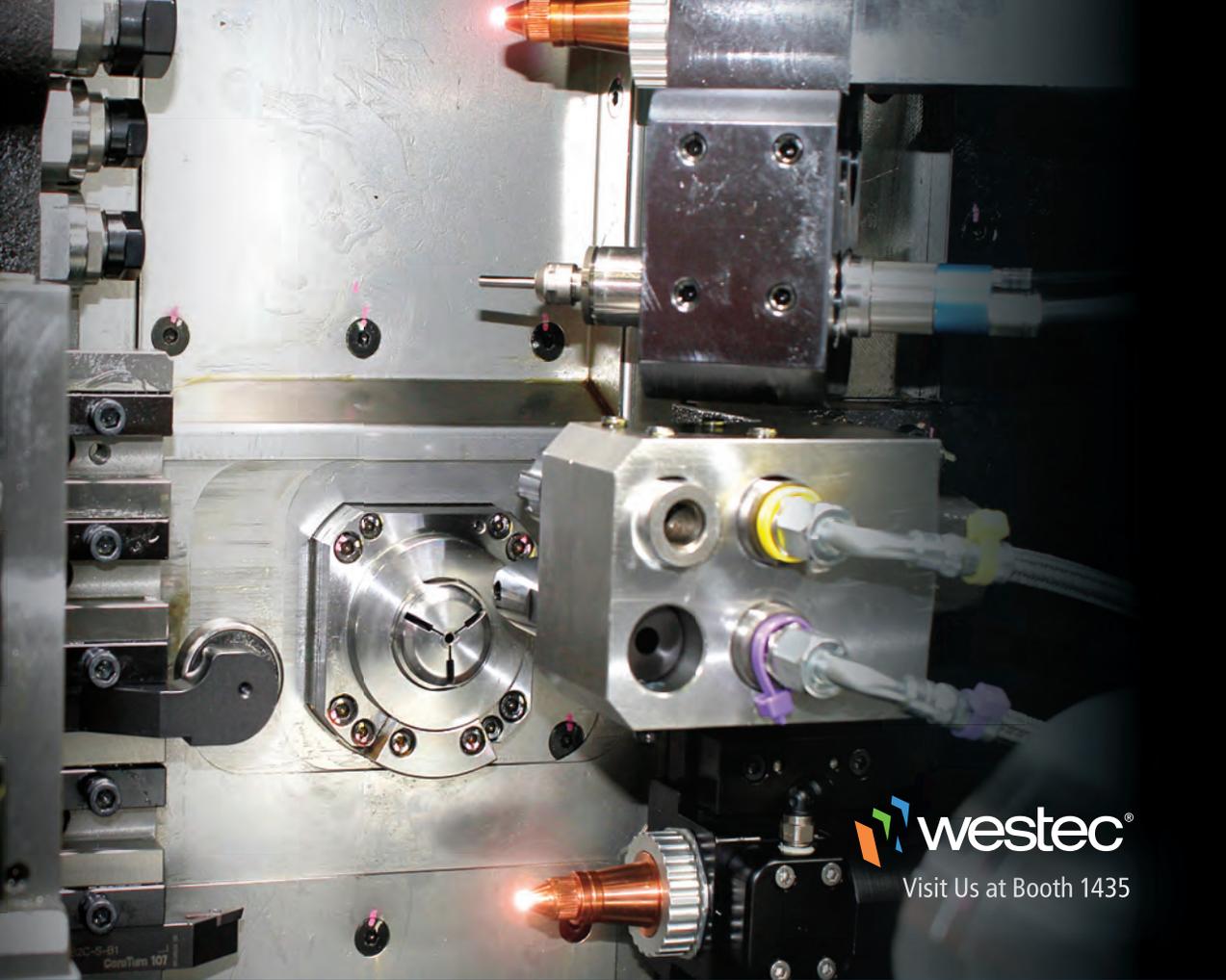
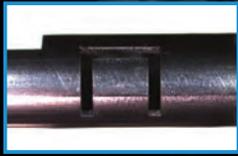
The FactoryWiz system brought to Mario’s attention how much more efficient the Haas VF2s are with a pallet shuttle then without. “Our boss loves to buy machines,” tells Mario. “But right away we noticed that we were not getting the most out of the equipment we already had. We see 85-90% spindle run rate on the vertical machines with the pallet shuttles and only 65% on the standard verticals. Same exact machines showing night and day different numbers. Instead of us adding costly new machines we can upgrade the ones we already have by adding more pallet shuttles and get us an easy 20-25% gain in spindle run time. It will save us a ton of money and floor space.”

Mario promised his guys collected data was a carrot and not a stick for punishment. FactoryWiz has shown PNM that many of the areas that need improvement are more geared towards processes and management then the operators. “Seeing me take responsibility for lost spindle time has helped them own up to their idle numbers,” describes Mario. “FactoryWiz has really

Each machining center has its own laptop used to enter job info into the Shoptech E2 ERP system and to access FactoryWiz monitoring software. Operators can hit the “summon supervisor” button and draw attention to their needs without leaving their post. So, if the machine needs coolant one click and they type in coolant. Anyone not on the machine sees coolant on the board and brings it to the machine in need. Operators are able to select from a drop down menu any number of reasons the machine sat idle.

changed the way we manufacture, but it was a hard sell to our owner. He is of the mindset that if it isn’t cutting chips then it isn’t making us money. Slowly he is coming around and is seeing the value when I run reports. He notices the numbers up on the screen in the shop, and gives a nod of approval to that operator.” It is a win for management, and a win for the operators, but the biggest winner is PNM as a company.

“Our owner is named Dave Counts,” concludes Mario. So “quality counts” is our motto. We work and live by that here at PNM knowing we change lives with every part we machine.”



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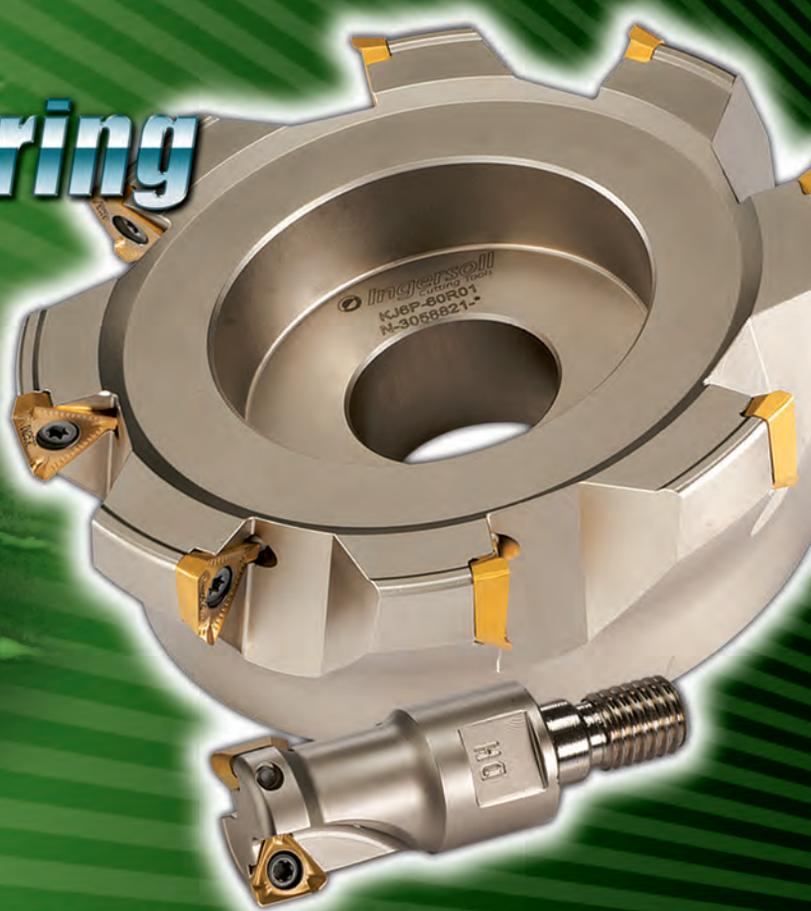


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Manufacturing Day Coming Up October 6

The National Association of Manufacturers' (NAM) Manufacturing Institute and Deloitte released the results of a survey on the effect Manufacturing Day 2016 had on the public's views of the industry. Responses from the students, educators and employees surveyed demonstrated that Manufacturing Day 2016 resulted in an improved public perception of manufacturing. Specifically, survey results showed 89 percent of students and 88 percent of educators were more aware of manufacturing jobs in their communities.

Additional survey highlights include the following:

- Eighty-four percent of students and 90 percent of educators were more convinced that manufacturing provides careers that are both interesting and rewarding.
- Sixty-four percent of students were more motivated to pursue a manufacturing career.
- Eighty-eight percent of students and 90 percent of teachers viewed Manufacturing Day events as interesting and engaging.
- Eighty-nine percent of manufacturers that hosted Manufacturing Day events saw value in participating, and 86 percent are likely to host an event again in the future.

"Manufacturing Day is all about showing the community that this industry provides sustainable, well-paid jobs, with limitless opportunities for advancement," said manufacturing institute executive director Jennifer McNelly. "The overwhelmingly positive results of this survey tell us that the American public is seeing the possibilities in manufacturing careers."

The survey was disseminated to more than 2,700 participating Manufacturing Day hosts across the United States to gather national data from teachers, students and parents on how Manufacturing Day events truly make a difference in local communities.

"Manufacturing Day is a unique opportunity for manufacturers to show their community and future employees opportunities for innovative and high-paying careers within the industry," said NAM president and CEO Jay Timmons. "It's exciting to see what a powerful impact these events had on the public's perception of the manufacturing economy and the mean-

ingful careers that exist in our industry. The NAM looks forward to continuing to grow and expand Manufacturing Day to educate and inspire the next generation."

"As manufacturers opened their doors to the public on Manufacturing Day, they shared firsthand the opportunities available in today's advanced manufacturing environment," said Deloitte vice chairman Craig Giffi. "By gathering research through the survey, the Manufacturing Day producers can measure the impact Manufacturing Day is having on perception, provide insight into building upon that momentum and further efforts to improve public perception of manufacturing."

Manufacturing Day addresses common misperceptions about manufacturing by giving manufacturers an opportunity to open their doors and show, in a coordinated effort, what manufacturing is—and what it isn't. By working together during and after Manufacturing Day, manufacturers address the skills gap they face, connect with future generations, take charge of the public image of manufacturing and ensure the ongoing prosperity of the industry as a whole.

"It is heartening to see local manufacturing communities come together to coordinate activities for local schools," said Fabricators & Manufacturers Association, International president and CEO Ed Youdell. "The greatest permanent impact will accrue as a result of this kind of collaboration, especially where companies use the insights gained from these surveys to guide them in planning future Manufacturing Day programs."

About Manufacturing Day

Supported by a group of industry sponsors and co-producers, Manufacturing Day is designed to amplify the voice of individual manufacturers and coordinate a collective chorus of manufacturers with common concerns and challenges. The rallying point for a growing mass movement, Manufacturing Day empowers manufacturers to come together to address their collective challenges so they can help their communities and future generations thrive.

For more information about the co-producers, please contact the following:

National Association of Manufacturers and The Manufacturing Institute

Jennifer Drogus, Director, Media Relations

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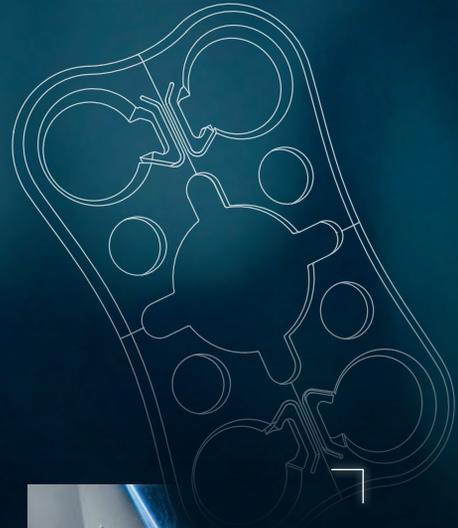
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GOLDEN STATE ENGINEERING

Article & Photos by Sean Buur



Jason Neal, facilities manager at Golden State Engineering

SKIMMING SMART AND SAVING

Golden State Engineering in Paramount, Ca. is a family owned and operated company. They are a fixture in their local community and have been for the last 49 years. Precision is their business, and business is good, but recent events in the news have the city and government agencies clamping down on local manufacturing. Golden State are doing their part to reduce emissions and provide a safe working environment, all without breaking the bank.

Golden State Engineering is primarily a high volume aerospace screw machine house, but is also a respected name in the commercial and medical sectors. "Aerospace is where we got our start," tells Luiz Saguini, Golden State's VP. "Our first customer is still a customer 49 years later. They needed a part for a customer that no one could manufacture. My father in-law was a great machinist and figured out a way to do it. We went from two machines to four and so forth." Golden State has come a long way in those 49 years, they are ISO9001, AS9100 and ITAR certified and have nearly 70 CNC machining centers. Luis spent

30 years on the shop floor and has held every job in the company. "Grinding was my trade incase my father in-law decided to sell the company," jokes Luis. "I loved it, but I don't miss it. Running the company is a different set of challenges, but we have 200 people dedicated to making the best parts."

Jason Neal is the facility manager at Golden State Engineering. His career in maintenance has led him through oil/gas and solar before landing at Golden State 6 years ago. "I'm not involved in the direct manufacturing," describes Jason. "My role as facility manager includes maintenance and upkeep of all our machines, maintaining our four buildings, plumbing, electrical, equipment purchases, regulations, dealing with government agencies, employee safety, and even meeting with magazine editors. I wear a lot of hats every day." Golden State has multiple buildings totaling just less than 100,000 sq.ft. of manufacturing. They have 67 CNC machines ranging from traditional and Swiss turning to EDM and CNC grinding, plus 5 axis verticals. They also have a sea of manual machines numbering in the



Top - The SmartSkim 900CL is split between 450 gallons of dirt coolant and 450 gallons of filtered coolant. Their float system allows the system to pull from the top of the surface where most of the oil and particles reside. It pulls the dirty coolant from the top into an oil filtration box.

Right - The heart of the SmartSkim system is their CrossFlow tramp oil separator that separates and removes the non-emulsified tramp oils that find their way into the Golden State Engineering's valuable coolant emulsion.

Bottom - Golden State Engineering was short on space but once they removed the old evaporator there were able to find room for the SmartSkim system with only a few modifications to the location.



hundreds all cranking out parts at a frantic pace. Typical runs are in the hundreds of thousands and up to a million pieces.

Jason has his hands full maintaining this vast fleet and the latest tool to help with that endeavor is a SmartSkim CL900 CoolantLoop Recycling System. "I spoke with Mark Kluis of SmartSkim long before we purchased the SmartSkim system," tells Jason. "Management decided at the time that we were too short on space to add a system like this into the mix. It is hard to believe with all the building we have, but we are packed in tight with machines and anything that doesn't cut chips is sometimes a hard sell." Jason was helped out unfortunately by news reports in December of last year. "All our buildings are in Paramount, CA. and that poses certain issues when it comes to pleasing the city and the local residents," describes Jason. "It doesn't help when a couple of local manufacturers get caught releasing Chromium 6 into the atmosphere. The city came down hard on everyone. Having a conference room full of the AQMD, city officials, OSHA, sanitation, and the police is not how we want



Golden State Engineering is primarily a high volume aerospace turning house, but they have also have 5-axis milling, swiss turning, CNC grinding, and multiple EDM machines. Even with 67 CNC machining centers Golden State Engineering still rely on their manual department to produce millions of parts.

to go about our day. We were in compliance of course, but this got us thinking. What could we do as a company to keep us off these agencies radar without having a giant cost associated with it."

Golden State, like most companies their size have an evaporation unit to help get rid of old coolant. Theirs required constant monitoring to keep the float adjusted correctly so it didn't emit a smell. The city of Paramount has sniffers in the sky reading air quality 24 hours a day and 7 days a week. One sniffer unit is just downwind from Golden State's primary manufacturing facility and the evaporator. "It wasn't worth it anymore to even have the evaporator, but we needed an alternative," explains Jason. "Air quality is a real concern for us, other local business and residents so I made contact again with Mark at SmartSkim to see about a coolant recycling system." Golden State Engineering pulled the trigger on the SmartSkim CL900 CoolantLoop Recycling System in January as part of their 2017 company wide safety program and couldn't be more pleased by the results and service they receive from the SmartSkim team.

The SmartSkim CL900 is a 900-gallon system split in half by clean and uncleaned coolant. Jason pumps the old coolant out of the machines via a Sump Shark and into the recycling system for processing. It runs off air and goes about filtering the coolant without human interaction any time there is air pressure in the lines. "The heart of the SmartSkim system is our Cross Flow tramp oil separator that separates and removes the non-emulsified tramp oils that find their way into the customer's valuable coolant emulsion," details Mark Kluis of SmartSkim. "The system also removes particulates, both ferrous and non-ferrous, with various filtration systems, including high-powered rare-earth magnetics. Finally, the SmartSkim system

infuses ozone into the coolant while it's circulating within our processing tanks. The ozone helps kill and remove bacteria that are created with the presence of tramp oils." Jason estimates his ROI will be well under 12 months, and is exceeding their initial projections. "I've reduced my coolant costs by half, my disposal costs by half, and even my water bill has gone down," touts Jason. "I've gone the last two months without even buying coolant at all. Our SmartSkim's ability to filter the coolant has surpassed our expectations. We had a machine with a hydraulic leak that turned all 900 gallons of our coolant brown. Hydraulic oil is not formulated to be emulsified, so we were concerned about the prospect of throwing out 900 gallons of coolant. We stopped extracting from the SmartSkim for two days and just let it run. It cleaned it right up, and got every bit of it out. We went from chocolate milk to nice and white again."

Golden State's company wide goal is to be accident free in 2017. They started the first day back of the new year with a safety meeting and training. So far so good for the year, but they are not resting. New lighting, new employee dining and restrooms are all playing a part. "The owners have invested a lot of time and money into this being a safe and employee friendly work space," explains Jason. "We have some of the nicest restrooms you will ever see, period. We are finishing up an employee dining area that is separate from the main building that doubles as our group meeting area. My team is installing new lighting throughout the shops to improve visibility. Every little thing helps keep all 200 of us safe and able to work." Golden State Engineering proves that it is possible to please the neighborhood, and their employees, and still remain profitable by implementing new machines and technology like the SmartSkim.



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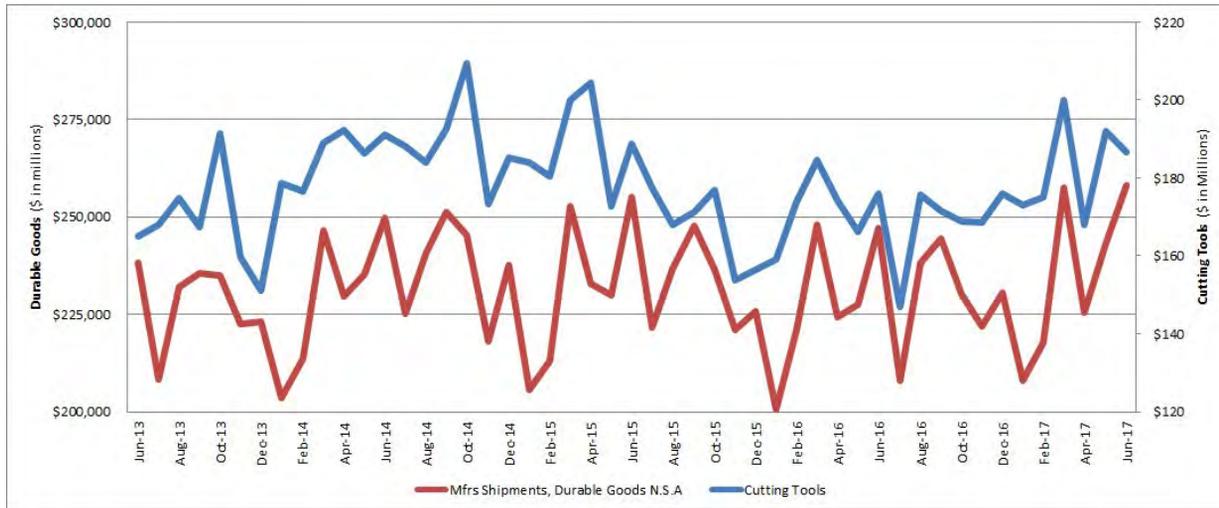
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U.S. Cutting Tool 2017 YTD Consumption up 5.8% in June



June U.S. cutting tool consumption totaled \$186.57 million according to the U.S. Cutting Tool Institute (USCTI) and AMT – The Association For Manufacturing Technology. This total, as reported by companies participating in the Cutting Tool Market Report (CTMR) collaboration, was down 2.8% from May’s \$191.93 million and up 6.0% when compared with the total of \$175.97 million reported for June 2016. With a year-to-date total of \$1.095 billion, 2017 is up 5.8% when compared with 2016.

These numbers and all data in this report are based on the totals reported by the companies participating in the CTMR program. The totals here represent the majority of the U.S. market for cutting tools.

“2017 continues to be a much stronger year for cutting tools than 2016,” says Steve Stokey, President of USCTI. “High consumer confidence is a strong indicator that cutting tools sales will continue to improve through the second half of the year.”

Costikyan Jarvis, president of Jarvis Cutting Tools, comments that, “Combining the recent PMI of 56.3, Capacity Utilization of 76.6% and July’s job growth (209,000 jobs), this month’s Cutting Tool Survey result supports our view of a slow, but steady, growth in the economy. While most macro level indi-

cators are sound, there is some uncertainty how global politics (North Korea, Venezuela, etc.), the Federal rate increases, and the diminishing Federal Balance Sheet will affect economies. On a more micro level, automotive and aerospace continue their robust demand, but we would like to see more improvement in areas like housing starts, agriculture and oil. From the cutting tool producers viewpoint, our revenue growth is being driven by the strong market segments while Caterpillar’s recent improved outlook may signal growth in some of the remaining segments.”

The Cutting Tool Market Report is jointly compiled by AMT and USCTI, two trade associations representing the development, production and distribution of cutting tool technology and products. It provides a monthly statement on U.S. manufacturers’ consumption of the primary consumable in the manufacturing process – the cutting tool. Analysis of cutting tool consumption is a leading indicator of both upturns and downturns in U.S. manufacturing activity, as it is a true measure of actual production levels.

Historical data for the Cutting Tool Market Report is available dating back to January 2012. This collaboration of AMT and USCTI is the first step in the two associations working together to promote and support U.S.-based manufacturers of cutting tool technology.

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CAD/CAM/CNC Perspective

By: Tim Paul

Customer Success Manager Fusion360 CAM

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Are critical thinking skills important in our trade?

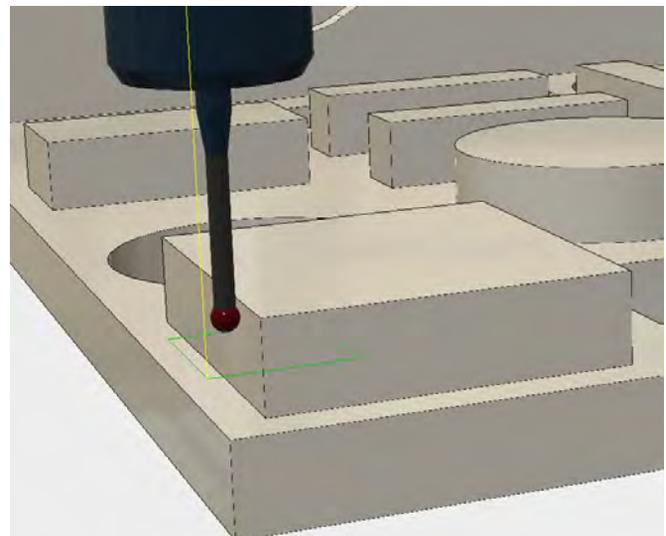
I recently took a new position at Autodesk as part of the Fusion360 Adoption team. My job is to co-manage the learning path for Fusion360 CAM. This new position has forced me to put a lot of thought into how I learned the trade and how I hope to change the way people learn it. We live in a wonderful time where good and bad information is so readily available. We now have the power to search and find a world of knowledge and opinions with a device that fits in our pocket. Thanks to the wonders of the Internet, a good search engine and spell check, I appear at least twice as smart as I really am. But, I recently realized I could easily appear twice as ignorant.

Part of my new position is creating learning content for Fusion360 CAM. My teammate Marti Deans has already created some wonderful getting started content. My first big project was creating a video series for WCS probing. I briefly covered this topic in a previous article here in this magazine. While working through the outline for the video series I reflected on the machinists I've met throughout my career and how they learned the trade. Very few machinists I know went through a structured apprentice program. It seems like the clear majority of the machinists I've known learned the trade through tribal knowledge and good critical thinking skills.

Reflecting on the successful people I've met throughout my career I realized that most successful people have good critical thinking skills in at least some functions of their lives. I thought I knew what critical thinking was and I considered myself a reasonably good critical thinker. I also take a lot of pride in making my 9-year-old daughter think through her problems. And now I ponder how can I build training content to not just show the machinist community how to click buttons and remember steps in a process, but rather apply critical thinking skills to their CAM challenges. Through my years of using many different CAM systems there were too many boxes that someone told me to check but could never really ex-

plain why. So, in my journey down the deep rabbit hole of the internet I went to learn more about exactly what critical thinking is and how could I apply it to CAM learning content.

Hours into my internet journey I quickly realized thinking was a very hot topic with plenty of opinions. Critical thinking is often mentioned as a key life and work skill but many people don't fully understand it or confuse it with related but different terms of Analytical thinking and Lateral thinking. Analytical thinking and Lateral thinking kept popping up in my search, so down the next internet rabbit hole I went in search of the clear best way to think and teach. My friend Derek Goodwin



taught me the phrase, "When you're a hammer, everything is a nail.". My memory can be poor, but I'm sure he was commenting on a skill I was proud of but overused. It's very easy to find success with a method, a system or a process and find yourself over applying your previous successes. I now believe a method of thinking can be over or misused as well.

Let me share my newly learned machinist's interpretation of critical thinking, analytical thinking and lateral thinking and how I would hope to apply them differently in the context of a machine shop.

Critical Thinking: The objective analysis and evaluation of an issue to form a judgment. Aims to make an overall judgment about the data/information which is as free from false bias as much as possible.

Example of a good machine shop use: When buying a new machine, I like to think I can evaluate equipment for unsubstantiated or bias assumptions or assertions from the sales person. Evaluate the presented data, specs and services for being genuine. Maintain a clear line of reasoning through to a logical decision based on logic, intuition and data in a systematic way.

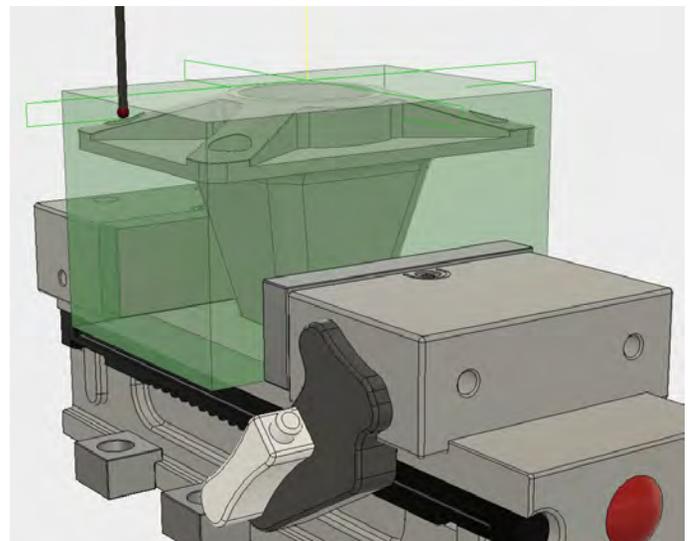
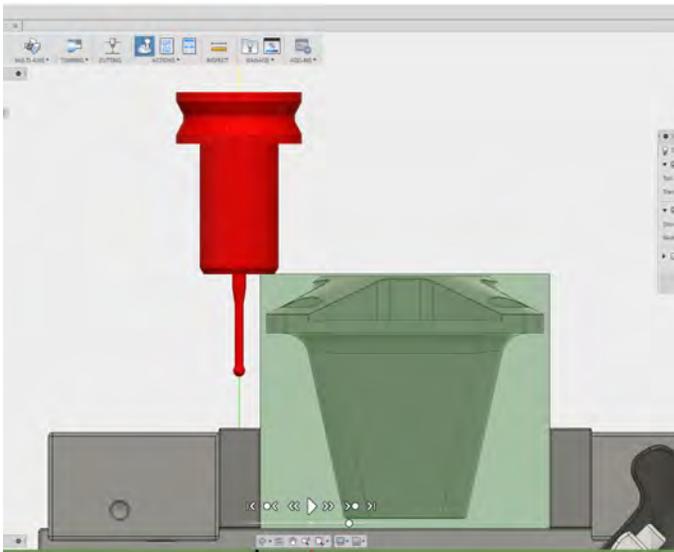
Analytical Thinking: The ability to scrutinize and break down facts and thoughts into their strengths and weaknesses. Breaks down data into simpler conclusions.

Example of a good machine shop use: Choosing tooling, work holding and which machine to run a long production run of parts. A strong analyt-

ical thinker can extract, compile and dissect part features, tolerances, known capabilities of tooling, machines and work holding while eliminating extraneous data to discern a clear list of tools, work holding package and machine to run the job.

Lateral Thinking: Solving problems through an indirect and creative approach with an open mind while delaying quick judgment. Finding and evaluating more than one potential solution to an issue or challenge.

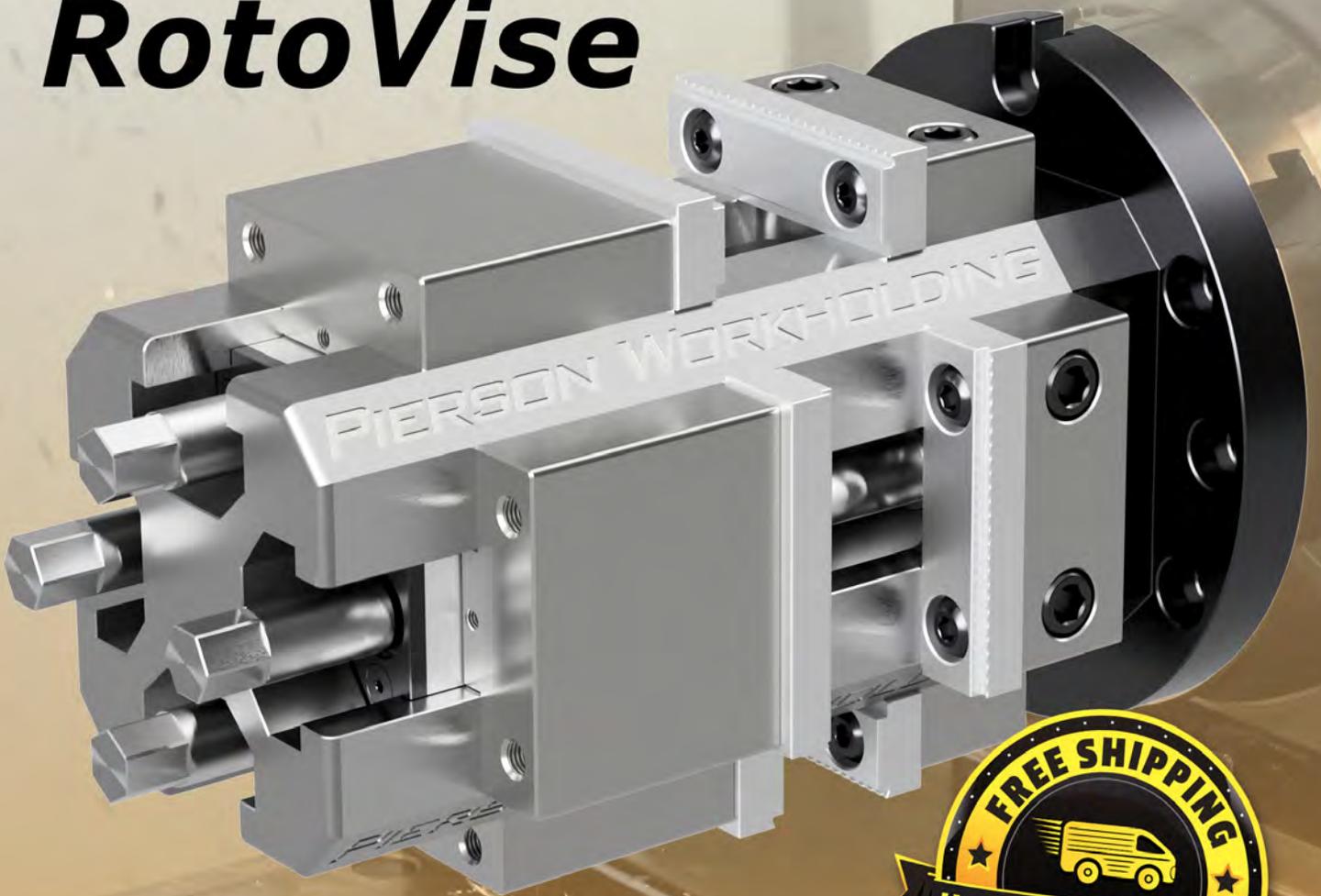
Example of a good machine shop use: When searching for the root cause of a tool pulling out of a collet chuck early in the night shift it's easy to assume it wasn't tightened properly. A strong lateral thinker would investigate the possibility of tool tightness, torque wrench calibration, possible coolant starvation causing more axial pull out forces on the tool, correct collet size etc. My hours of internet rabbit holes on the topic of thinking did not bear the fruit I had hoped it would. I did not find a magical way to intertwine critical thinking skills or lessons into my probing videos. However, I did learn that people have a lot of different opinions on learning. I also found a better understanding for how I think through challenges and I will likely be more specific and mindful about how I think through different challenges. I did make sure to discuss more of the reasons why WCS Probing could be useful more than I showed what buttons to click. For anyone using Fusion360 CAM I would love feedback on the latest learning content. <https://www.autodesk.com/products/fusion-360/get-started>



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TOOL GRINDING SHOP SIMPLIFIES THE CUTTING EDGE

Article provided by United Grinding



PROMAX Tools in Rancho Cordova, California, considered the advancement from manual to CNC tool grinding equipment a big deal, until the shop took its most recent major step forward concerning manufacturing technology. PROMAX simultaneously incorporated several advanced tool measurement systems that catapulted the shop's quality assurance and overall production to new levels.

The first carbide roughing tool the shop designed and produced was like nothing else on the market. Competitors' carbide end mills were all based on old high-speed milling designs with standard 30-degree cutting angles, while PROMAX carbide roughing tools introduced European geometries to the high-performance cutting tool market.

To produce its innovative cutting tools, PROMAX looked to the latest grinding technologies, and at that time, CNC grinder technology had begun to revolutionize manufacturing. When the shop installed its first CNC grinder, the machine quickly garnered a reputation on the shop floor for accuracy and productivity. Even the shop's manual grinding machine operators were amazed at the newfound ability to walk away from a machine as it ran a preset program.

That shop's first CNC grinder was a Walter from United Grinding and it helped PROMAX grow its line of solid-carbide end mills that soon caught the attention of a private label company. It wanted the shop to develop and supply a brand new line of cutting tools for them — with projections of about \$750,000 worth of production needed in the first year to meet initial demand.

The tools were incredibly well received. Orders in the first year were double that of the projections. One CNC machine was simply unable to keep up with the skyrocketing demand, so PROMAX acquired a second Walter machine from United Grinding.

Over time, PROMAX continued to add Walter machines to its lineup, and today, the shop's floor is home to a total of 22 Walter systems, including the Heltronic Power, Mini Power and Mini Automation grinders. But the shop's most recent and boldest technology acquisition to date was a single order for seven highly advanced Walter Helicheck optical CNC tool measuring systems.

The Helichecks support PROMAX's goal and manufacturing philosophy of always putting quality first above all else. Prior to the advanced tool measurement technology, the shop measured manually and used comparators to check its finished parts.

"When Helicheck measurement systems first came on the market, we quickly realized the advantages of the new technology and incorporated it into our production process," said Mark Albertson, production manager at PROMAX Tools. "With our Helichecks precision and flexibility, we can guarantee the quality of our entire range of cutting tools along with the complete portfolio of our other products."

Trust and support also sold PROMAX on Walter's measurement technology. Through its long-standing relationship with United Grinding, the shop knows its supplier solves problems immediately when they arise. PROMAX works closely with Stefan Krannitz, measuring product specialist for United Grinding; Andrew Walenta, application engineer for United Grinding; and Ulrich Brändle, product manager metrology for Walter.



Left to right - Ulrich Brandle Product Manager Metrology at United Grinding, Mark Albertson Production Manager at Promax Tools, and Stefan Krannitz United Grinding Product Specialist, Measuring, Tool Division

“We are manufacturing the best tools and the best products, and to do that we need the best equipment,” commented Albertson. “We keep going back to United Grinding because they are a premium supplier. Their machines are well engineered and well designed.”

Of the recent Helicheck acquisitions, the shop uses four Helicheck Pro systems and two Helicheck Plus 4-axis CNC measuring machines with standard 400 power cameras. Promax’s final new Helicheck PLUS features powerful sophisticated camera technology, making it the most advanced of the group.

PROMAX uses the Hlicheck Plus — equipped with a 1,000 power CER camera — to measure its micro tools and edge-prepped tools. The machine also ensures that the finished cutting tool diameters are exactly within specification. With a special reflected light unit and diffuser, the system measures even the smallest of details.

During its edge prep process, PROMAX removes small amounts of raw material from cutting tool edges and imparts slight radii on them. After the process, tools make smoother connections with workpiece surfaces, resulting in higher part quality and better surface finishes.

PROMAX’s seven Helicheck measurement systems operate autonomously. An operator loads the tool and walks away while the Helicheck performs the measurement process. This autonomy allows the shop’s employees to be more productive.

To further increase productivity, PROMAX also incorporated an automatic loading machine, which they consider to be an important advancement. With automation, an employee does not have to constantly stand in front of a machine to load parts. PROMAX runs as many of its 45 machines as possible

over night to maximize the output of its 75 employees during their two shifts.

Walter’s grinding technologies boost PROMAX’s lights-out operations because of their closed-loop, self-correction capabilities. Probes on the grinders check part geometries and provide feedback to the machine. The machine, in turn, uses the feedback to correct its program in the middle of a run without the need for operator input. This allows the shop to run a larger variety of parts unattended.

Thanks to the advanced Walter equipment, the shop can run parts lights out with loose tolerances — where grinders need no adjustments over the course of a long run — as well as run those parts with extremely tight tolerances. In lights-out operations, a single Walter grinder can crank out 240 half inch-diameter PROMAX cutting tools per day.



For its tool grinding operations, PROMAX relies on its lineup of 22 WALTER tool grinding systems, including the HELITRONIC POWER, MINI POWER and MINI AUTOMATION grinders.



With WALTER tool grinding technology from UNITED GRINDING, PROMAX was able to grow its line of solid-carbide end mills that soon caught the attention of a private label company.

Another essential feature of Walter’s grinding technology is its Helitronic Tool Studio CAD/CAM software that lets shops such as PROMAX generate a wide variety of cutting tool types with the aid of its input assistance wizard. The programmer inputs a few pieces of geometry data, and a stored database completes any missing data to form a complete part creation program. The 3D live simulation feature then displays an exact graphic representation of the tool to be created.

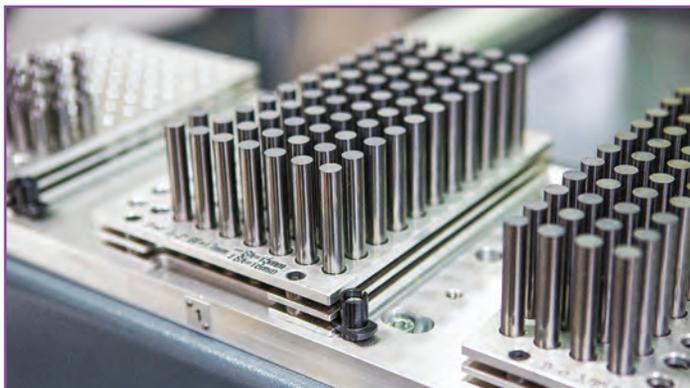
Before Helitronic Tool Studio, PROMAX would spend days trying to design a tool at the machine with special plastic and paper prototypes that simulated diamond wheels and carbide. Now, employees perfect tool programs from start to finish directly at their computers, and the shop is only limited by the imaginations of its designers.

United Grinding software also plays a significant role in PROMAX’s latest business venture. The shop is now a member of the Germany-based Ceratizit Group. Ceratizit specializes in end mill production, and its lineup of products includes powder, rods, indexables and — due to its partnership with PROMAX — solid-carbide end mills and soon drills. PROMAX adapts Ceratizit’s German designs and tool geometries for the demands of the American market.

“Our software from United Grinding is integral to the rede-

sign process,” said Albertson. “We alter the designs digitally and let the software prove the concept before we use time and resources for prototype creation. Without the software, we would spend weeks in front of the machine to determine what design changes can and cannot be achieved.”

In addition to an expanded product line, the future of PROMAX lies with adoption of intelligent manufacturing concepts — Industry 4.0 and the advancement of the Industrial Internet of Things (IIoT). Currently, five out of seven of PROMAX’s Helicheck systems are connected together and networked to a central database. The shop connected work stations in its engineering and design department to that database, so engineers can instantaneously access programs and reports from its Helicheck measurement machines.



PROMAX further increases productivity with automatic loading, and an employee does not have to constantly stand in front of a machine to load parts.



Thanks to automation, PROMAX runs as many of its 45 machines as possible over night to maximize the output of its 75 employees during their two shifts.



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Westec_7_17

8 ISO 9001 Basics You Need to Know

Steven Brand

California Manufacturing Technology Consultants (CMTC)

ISO 9001 is one of the most popular quality management system standards in the international stage. Before you embark on a journey to adopt it, however, you need to have an in-depth understanding of ISO 9001 basics to make it work for you.

Understanding ISO 9001

A quality management system (QMS) is a way of doing things in your organization to achieve intended results aligned with your overall goals. It generally consists of a structure of processes, people, machines, and other resources to realize quality objectives. ISO 9001 is the international standard for quality management systems across all industries, and particularly in manufacturing.

It is a uniform and well-organized platform used by organizations that enable them to perform consistent quality management. This, in turn, helps create satisfied employees and customers, as well as continual improvement.

Is ISO 9001 for everyone? Many companies are becoming more aware that their customers want a guarantee that the products and services they are looking to buy will meet their quality requirements.

Customers are looking for a definitive assurance that the products they purchase have gone through quality management best practices. The ISO 9001 model comes closest to such an assurance.

8 ISO 9001 basics

The 8 ISO 9001 basics are built on quality management principles that enable organizations to embed consistent quality into their products and create value for their customers. These principles are based on a range of norms, rules, and values that are regarded as true and acceptable worldwide.

The 8 ISO basics that you need to understand are:

One: The Customer is at the Center of it All

The primary focus of QMS is to meet and exceed customer expectations. You begin to see ISO 9001 at work when you observe increased repeat businesses from loyal customers and an expansion of your customer base with new customers. It is important for companies to use their ISO 9001 QMS to plan, develop, and deliver goods and services that satisfy customer quality requirements.

Two: Leaders at all Levels Need to Ensure Unity of Purpose and Direction

Leaders don't have to tell, order, or command employees to do something. True leadership requires developing a work culture in which people know and do what needs to be done under a unified purpose and direction. Leading by example is a good mantra that encourages employees to develop dependable work ethics without much prodding or goading. Leaders also need to improve coordination and communication systems among all functions in the organization to meet the desired quality objectives.

Three: Engaged Employees are Productive Employees

Engagement of people is reasonably one of the most important ISO 9001 basics, people being an organization's most important asset. When employees are engaged, they become more competent, empowered, and dependable to deliver value. Engaging people means respecting them as individuals, giving them recognition for their achievements, enhancing their personal and professional development, and constantly communicating with them.

Four: Understand the Process Approach

Leaders need to make their people understand that each individual activity they do is part of a host of processes that should link together to form one cohesive system. Leaders, employees, machines, and processes don't each work in a silo. Their individual activities should be managed as interrelated processes to meet one objective. This process approach helps achieve more predictable and consistent results. It also enhances the ability of people to focus their effort on key processes for improvement.

Five: Keep Improving

Successful organizations give importance to constant improvement. With a positive outlook on improvement, they can better react to changes in the internal and external environments if necessary. For example, technologies with which many processes are built come and go; they evolve too quickly or become obsolete. To prevent this from happening, employees at all levels need to be trained on how to apply new tools and methodologies. Leaders also need to integrate allowances for improvement on new products, services, and processes.

Six: Base Decision Making on Evidence

Decision making can be a complex process that involves multiple inputs and interpretations. All data that are needed by decision makers should be accurate, reliable, and secure, and should be evaluated by competent people using suitable methods. Accurate facts and proper data analysis lead to more objective and confident decision making.

Seven: Foster Relationships with Relevant Partners

Successful organizations establish relationships with relevant partners that help influence the performance of their organizations. Partners may include suppliers, resellers, investors, employees, customers, and the community.

Aside from their employees and customers, companies may want to give importance to their suppliers, resellers, and investors to sustain the continuum in the supply chain.

Eight: Implement a System Approach

The process approach is interrelated to the system approach; in fact, it's part of the system approach. This means that understanding, analyzing, and managing interrelated processes help in creating a coherent system that contributes efficiency and effectiveness in attaining organizational objectives.

Understanding the ISO 9001 basics is an important first step in deciding if you need an ISO 9001 QMS. Before you take that plunge, you may want to ask yourself two questions. Why do you want to implement the standard? And is your senior management on board?

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Informative Sessions to be Available to Westec Attendees

New WESTEC sessions facilitate supplier-OEM connections. As an owner or executive at a small- to medium-sized business, you have unique manufacturing challenges. Find out how similarly sized businesses have achieved success — and how to equip your company for a global market — at WESTEC 2017's Business of Manufacturing sessions. Take advantage of this invaluable opportunity to meet with leading OEMs such as Boeing and Northrop Grumman and others looking for new suppliers.

Hidden Treasure: Getting your share of California training funds

September 12, 2017 10:30 am – 11:30 am

Millions of dollars of new funding was recently released by the State of California – specifically for workforce development. Learn how your company can take advantage of these funds to up-skill your team members in essential skills and advanced technologies. Ensure that you get the support you need to develop talent in your organization.

OEM PANEL: How do I become a supplier?

September 13, 2017 10:30 am – 11:00 am

Meet major industry OEMs and learn from their supplier development teams what it takes to 'run with the big dogs'. Understand what certifications and technical requirements are needed, their selection process and more. Also, meet face to face with company representatives following the panel.

FlexFactor: The Future of Advanced Manufacturing

September 13, 2017 11:00 am – 11:30 am

The perfect storm of decreasing costs for robotics and machine tools, the dramatic increase in artificial intelligence, and the proliferation of connected devices will usher in an ever increasing demand for a technology savvy workforce across multiple sectors to include manufacturing. It is imperative to get ahead of this now by creating opportunities for companies and schools to engage young people into activities that get them excited about joining the future advanced manufacturing workforce. FlexFactor, a program developed

by NextFlex, one of the National Manufacturing Institutes for Advanced Manufacturing Innovation, does just this by blending entrepreneurship, technology, and project based learning into a rapidly growing success.

Top Shops: What makes a Top Shop?

September 13, 2017 1:15 pm – 2:30 pm

See how your shop compares to the country's leading machining businesses in this comprehensive benchmarking program, which identifies optimal shop-floor practices as well as operational and business metrics that define world-class competitiveness in discrete parts manufacturing. Whether your company is a small job shop or a large captive operation, you'll be able to take advantage of survey data gathered from a number of machining businesses. Not only will this benchmarking data serve as your baseline "report card," it will eliminate your need to rely on gut feelings to identify and prioritize improvement efforts.

Luncheon: Prepare for Launch: The technology and skills for today's space industry

September 13, 2017 11:30 am – 1:00 pm

The space industry is harnessing a new generation of innovators to fuel its meteoric rise to the cosmos. But how do top companies find the tools and talent to soar? Our star panel will discuss the technologies and opportunities allowing mankind to fly higher, reach farther, and travel faster – including what it takes for manufacturers to find people with the right skills to get us there.

Apprenticeship: A Collaborative Approach

September 14, 2017 1:00 pm – 1:45 pm

This powerhouse panel is a must see. Additive Manufacturing technology is changing so quickly that if you blink you'll be left behind. Hundreds of companies and products have launched already this year. From 3D printed shoes to flight qualified metal parts – learn about the latest applications, materials and machines that will transform manufacturing.

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**Star CNC to Introduce
Two Swiss-type
Automatic Lathes
—Booth #1735**

At their WESTEC Booth #1735, Star CNC, a division of Star Micronics Co., Ltd. of Japan, will introduce the SR-32JII Type B Swiss-type automatic lathe. The machine's modular design with slanted guide way increases rigidity, improves accuracy for stable production. Eight (8) stations back working unit with Y axis provides flexibility in overlapping machining requirements. Rigid machine construction enables continuous machining with superior accuracy over extended periods of time. The SR-32JII is designed to work with or without guide bushing which is another option to further enhance versatility and flexibility while machining.

Also showcased will be the much-anticipated new SV-20R Swiss-type automatic lathe. It features newly redesigned SV-20R with improved functions, build in "B" axis for multiple tools, and (8) station tool block for overlapping of back operations. Capability of two tool turning will reduce production time and improve accuracies. With large variety of tooling, rigid construction and flexibility, this machine provides capability for production of complex components in a single operation.

The SR-32JII and SV-20R machines, as well as other popular Star CNC machines will be on display. Demonstrations will be ongoing throughout the show.

**Zeiss Expands the Performance Spectrum of its Computer Tomographs
—Booth #1803**

These days, the focus is on speed and flexibility when it comes to using computer tomographs (CTs) in industry. That's why Zeiss will highlight CT systems which fulfill these requirements exactly at Westec, booth 1803. The Zeiss Metrotom 800 with an extended performance spectrum and the Zeiss Metrotom 1500.

In light of the ongoing development of new materials and the growth in the manufacture of hybrid workpieces made from very different materials, it has become increasingly difficult to clearly separate the application fields of computer tomographs. "Thus companies need machines which can be used in as flexible a manner as possible – including larger and larger measuring ranges," explains Ralf Benninger, head of technical sales and product management for Computer Tomography at the Zeiss Industrial Metrology business group.

And there is another trend that is driving the evolution of computer tomographs forward: production processes are speeding up and inspection technology needs to keep pace. Consequently, industry requires increasingly fast and flexible machines. This is exactly where the Zeiss Metrotom 800 with its extended performance spectrum and the new Zeiss Metrotom 1500 come into play.



**Southwestern Industries to Showcase its TRAK Machines
—Booth #1703**

Southwestern Industries reports that TRAK machines increase productivity in shops that engage in small lot or high-mix/low volume work. Products designed for the former application include the TRAK family of knee mills, bed mills, lathes, and knee mill retrofits. Machines designed for the latter application include the TRAK 2OP portable VMC and TRAK LPM VMC, both of which contain built-in Jergens ball locks to facilitate quick changeovers.

All TRAK machines feature powerful but easy to learn and use Proto-TRAK CNCs that reduce set-up times and provide for increased workforce flexibility.

Founded in 1951, Southwestern Industries maintains its design and manufacturing facilities just outside of Los Angeles, California.

**Computerized CNC for Complex Machining Applications
—B**

**Newly Released Mastercam 2018 on Display
— Booth #1715**

ing and multi-axis, multi-part system control. The M80 is engineered to provide high productivity and easy operability.

Mitsubishi will also showcase the different services it provides to its customers, including MTConnect adapters, 24/7 parts and technical support, CloudCNC, preventative maintenance, service agreements, comprehensive training classes and repair offerings.

Mitsubishi Electric's newest CNC is particularly well suited for medical, aerospace, oil/energy, agriculture and automotive industries, especially in applications requiring high throughput and reliability. The

M800/M80 Series is characterized by its ease of use, featuring icon-based navigation for smartphone-like operation. It supports eight part systems, 32 axes and eight spindles, and offers multiple spindle synchronization set control. It also provides smooth surface control, reducing mechanical vibration.

Newly Released Mastercam 2018 on Display — Booth #1715

Westec 2017 attendees will get to see and experience the most powerful Mastercam machining software yet. Mastercam 2018 which introduces new 2D/3D milling features, design improvements, powerful turning and mill-turn enhancements, and so much more. There will be live presentations every 30 minutes on Mastercam products..

This year at Westec, Attendees can see Dirty Little Secrets about Cutting Cost and Performance presented by Stas Mylek, Sr. product marketing specialist, CNC Software, Inc. On Wednesday, September 13 from 2:45 – 3:45 PM, learn about today's cutting tools and toolpath strategies and how

they can increase productivity and profitability.

Stock awareness has been added

to select 2D toolpaths and allows tool motion on the top, bottom, or both values of the stock. This provides a safer

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Chris Borch, CEO, Micro-Mechanics, Inc. – Morgan Hill, CA

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and more optimized tool motion. The workflow for all 3D High Speed toolpaths has been streamlined and gives you fine control over exactly where to cut. High speed Hybrid toolpaths now offer smoothing controls and deliver a finer finish.

If you work with stringy materials such as aluminum or plastic, Mastercam's new chip break control prevents problems by allowing you to set length and time conditions, retract, and dwell options. Mill-Turn machine definitions now contain tailstock and quill components, tailored to your machine.

Exclusive to Mastercam, a new set of turning strategies automate toolpath generation and support for Sandvik Coromant CoroTurn® Prime inserts and PrimeTurning™ method.

Shops can model their own designs, but they also get in models that need to be corrected or prepped for machining. Mastercam's CAD functions are designed for the machinist. Angle Sweep improves the creation of more complex wireframe functions. Hole Axis makes it easier to work with a large number of holes.

Omax Corporation to Show Waterjet Cutting Versatility and Precision —Booth #1115

Omax® Corporation will showcase its Omax80X jet machining center with a Tilt-A-Jet® cutting head. Visitors to Omax booth 1115 will experi-

ence the versatility and high precision of Omax waterjets.

Designed to accommodate large or multiple part jobs, the 80X can cut virtually any material with no heat affected zone (HAZ). Omax reports with a Tilt-A-Jet cutting head, the 80X can create tight tolerance, taper-free parts, even from thick material that is difficult or impossible to cut with other cutting methods.

WESTEC attendees can watch live cutting demonstrations in the Omax booth and see how waterjets cut without heat to produce parts with smooth edges that require no secondary finishing operations. Visitors can also see software demonstrations.

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software is compatible with more than 90 different file formats, including all major CAD program file types, plus graphics file formats such as .jpg, .gif, and .png files. This means almost any 2D or 3D part file can be imported directly into the Omax software and turned into a real part.

**BTA Drilling Machine
Used for Helicopter Manu-
facturing
—Booth #1939**

The DeHoff BTA/STS 2084 is designed for drilling on-center holes using the BTA/STS process. It is being utilized to manufacture drive shafts for helicopter tail rotors. The shaft begins as a solid piece of high-strength alloy steel, and a center hole is drilled in a single pass using the BTA machine. This process results in a significant weight reduction for the finished drive shaft.

The BTA/STS 2084 has a 2-inch



diameter drilling capacity and an 84-inch drilling depth. It has a single spindle with a 20 hp spindle motor, and a 4-speed gearbox delivers twice the torque of a standard DeHoff model. The machine can also be offered with slide travels of 36 inches, 60 inches, or 120 inches.

All DeHoff machines are Made-in-the-USA and feature a cast iron drill head base with hardened and ground steel box ways, plus hand-scraped and fitted saddle, gibs, and straps (versus linear guide ways and milled surfaces).

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HAIMER Microset to Show Wide Array of Their Products
—Booth #2303

HAIMER USA will feature their Microset tool presetting machines along with all core HAIMER products and technologies this September 2017 at WESTEC.

Haimer reports their new Microset tool presetting equipment streamlines your tool setting processes, reducing set up times by as much as 70%, thereby minimizing idle time and increasing machine utilization.

HAIMER offers a wide range of tool presetting equipment under the Microset banner that the company reports will fit every application and

budget. The HAIMER UNO Series includes unique high-tech features for an entry level tool presetter – in addition to having high precision, speed and reliability. For maximum convenience and functionality, the VIO Series offers absolute reliability with high quality components.

Other technologies and products figuring prominently in Haimer’s WESTEC exhibit are the power clamp shrink fit machines, HAIMER shrink fit tool holders and collet chucks, tool dynamic balancing machines, HAIMER safe-lock™ and duo-lock™ technologies, HAIMER 3D sensors, and HAIMER cool flash coolant delivery system.

Expanded Line of High Performance Solid Carbide Endmills

—Booth #1940

Monster Tool’s LRNF and HPNF high performance solid carbide endmill line for aluminum and non-ferrous applications has been expanded into one of the largest industry offerings available with a wide range of fractional sizes from 1/8” – 1” diameter, stub length to extra-long flute lengths, reduced necks for extended reach applications, and corner radius assortment from .010” - .250”.



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Booth #2103



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The product line boasts increased productivity, better work piece finishes and substantial tool savings.

Progressive geometry enhancements, coupled with ZrN coating, is applicable for ramping, plunging, slotting

and trochoidal milling. The product line comes standard with H6 shank tolerances and is ground on selective premium carbide blanks for reduced adhesive galling issues in high speed machining environments.


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Advanced Workholding & Fixturing Components —Booth #809

Fixtureworks® will bring a broad spectrum of its products to booth #809 at 2017 WESTEC. Highlighting the exhibit will be its lineup of TriMax vises, ultra low-profile TG GripSerts carbide workholding grippers and the new Fairlane® GP-Series rubber gripper pads.

TriMax Production Vises offer multiple part clamping, quick change components and easy adjustment. Vises in this line are suited for production, 5-axis and machinist applications.

TG GripSerts carbide gripper inserts are designed for ultra low-profile clamping with no dovetail workpiece preparation. With serrations designed for steel, hardened steel, titanium and aluminum, these patented triangular grippers feature two rows of teeth at different angles to maximize the pull-down effect. Already integrated with the TriMax line of vises, the TG GripSerts workholding grippers are ideal for upgrading existing vise jaws and more.

The GP Series rubber gripper pads are ideal as industrial grade contact wear points for automation and positioning applications. They are constructed of black nitrile rubber that is molded to a 1/16 in. aluminum backing that can be mounted flat or contoured or formed to round or sharp corners.

Featured will also be a full line of fixturing accessories including grippers, rest pads, Swivots® swivel/piv-

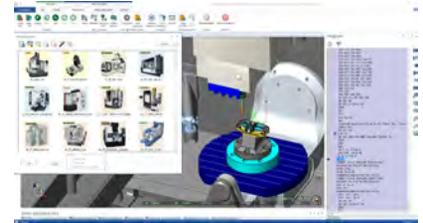


oting positioning components, Quick Release ball-lock pins, rollers and bumpers and urethane covered bearing rollers and more.

Spring Technologies to Demonstrate Software —Booth #2538

Spring Technologies will demonstrate its flagship NCSIMUL Solutions package at WESTEC 2017. The latest 2017 version of NCSIMUL Solutions offers comprehensive control of the machining process, providing ease of use, flexibility and automation for manufacturers to move towards Industry 4.0.

The two main modules, NCSIMUL machine and NCSIMUL 4CAM will be highlighted at the show.



Among the new features of NC-SIMUL solutions 2017 and the NC-SIMUL 4CAM module are: New probing strategies; support for turning after milling, for one-click NC machine turnaround; cutting tool management with 3D definitions; one-click project update; project export/import; auto-

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matic performance analysis; automatic graphic detection of machining risk zones and less than optimal cutting conditions, and more.

The company reports that NCSIMUL machine is an innovative CNC software solution providing realistic CNC simulation of the machining process. Users can simulate, verify, optimize and review machine programs based on the actual characteristics of the machine tools. Three-dimensional graphics help to avoid machining crashes while powerful algorithms and embedded process-based knowledge enable cutting conditions to be optimized. NCSIMUL machine provides machining verification in three steps: investigates and corrects coding errors, simulates to locate collisions and correct motion errors, and validates the part cut and machining result.

Further, SPRING has focused its R&D over the last year on optimizing the performance of NCSIMUL 4CAM.

Carmex to Feature New Tools for Swiss-style Machining

—Booth #607

Carmex Precision Tools LLC will be continuing its emphasis on new developments for Swiss-style machining at Booth #607 at WESTEC 2017. Carmex has recently presented a large number of new products in its Swiss-Line, Tiny Tools, and Mini Tools series.

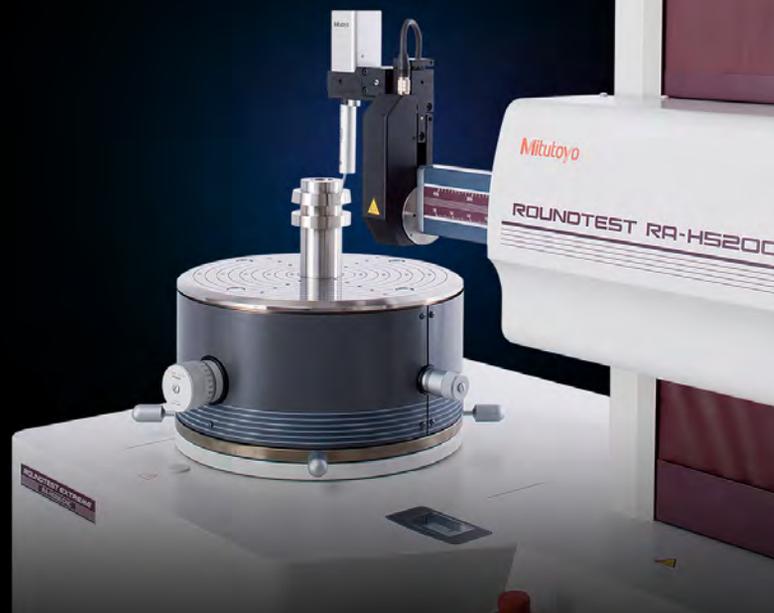
Among the most recent introductions was the extremely versatile G6 six-edge turning insert designed to fit one holder. The multi-function inserts deliver high productivity and cost efficiency in applications including threading, grooving, parting, and back and front turning. Designed to fit a range of diameters extending from

small, thin wall applications up to 2.5 inches, the system delivers a smooth surface finish even in hard materials.

Jim White, national sales manager

for Carmex USA, states, “The G-6 is one of a number of versatile and cost-effective products that Carmex has recently engineered to meet the demand

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for high performance tooling in high precision Swiss-style applications.”

Hemel to Exhibit CMM's —Booth #2215

Hemel Engineering Products has been engaged in the design, manufacture, sales and service of Coordinate Measuring Machines (CMMs) and related software since 1973. Sizes range from benchtop models to large 40” Z-axis machines offered in both manual and DCC(motorized).

All systems include Hemel’s proprietary Geomet software available in several levels. Hemel also features manual and DCC shaft measuring machines.

powRgrip® Toolholding Collet System

—Booth #2850

Rego-Fix will showcase the benefits of its powRgrip® toolholding collet system at Westec. Visitors to booth #2840 will experience the system’s



ability to generate extremely high clamping forces.

The powRgrip system is a special collet-holding system that consists of three main components — holder, collet and press fit assembly mounting unit – which work together to generate superior clamping force, high-vibration dampening and extreme precision. The powRgrip uses the mechanical properties of the holder material to generate gripping force with tool run-out below 0.0001”. Interchangeable collets are available from 1/8” up to 1”, including metric sizes, and hold both carbide and HSS tools.

Large size powRgrip PG 32 collets are especially well suited for machining components made from Inconel® and titanium, and Rego-Fix’s secuRgrip technology, which combines powRgrip’s gripping strength with a patented locking key system, provides an added degree of confidence for applications such as heavy-duty material removal and the machining of expensive castings or complex parts.

Plus, available Xtended Length Toolholders enable operators to tackle machining applications that require longer reach or present clearance challenges.

High Speed Spindles and Witte Vacuum Workholding

—Booth #2706

Ibag North America will feature high speed spindles from 16 mm to 360 mm, maximum speeds to 170,00 rpm and power levels to 130 hp for milling, cutting and grinding applications. Ibag Micro Line spindles, compact and powerful, fit more Swiss turning machines, offering 16 to 33 mm diameter sizes, speeds to 120,000 rpm and power to 390 watts.

The Micro Line 25mm back work-



ing spindles offer 60,000 rpm with grease packed lubrication and 80,000 rpm with oil mist lubrication is designed for micro milling and drilling tools as well as engraving and fine milling.

The booth will also feature Witte vacuum workholding chucks, pumps and accessories to include the circular grid vacuum chucks that provide accurate and secure workholding for metal, graphite, ceramics, plastic, exotic alloys in standard and custom designs.

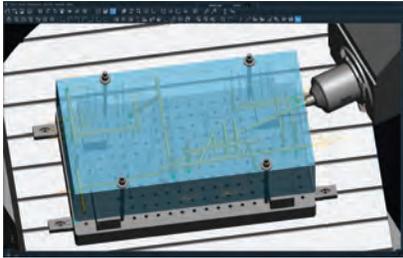
Tebis To Feature Its Current Version 4.0

—Booth #1823

Tebis America, will feature the latest release of its Version 4.0 at WESTEC 2017.

With this new release, Tebis software provides for enhanced features such as creating area curves during part comparison to enable better detection and limitation of modified areas. The new function creates non-overlapping shifted surfaces from any curves at defined angles.

In addition, parts can now be automatically morphed together with the most complex trimming curves in surface morphing. The geometry of the original curves is fully retained and



color properties are transferred 1:1. Curves can now also be included in surface morphing.

Deep-hole drilling in the CAM area has been better oriented to support automated calculation and machining. There is also a new tool type with an extended set of cutting data and

special speeds, feed rates, cooling types and depth sections needed for deep-hole drilling.

The definition of toolpaths has been further simplified in 5-axis milling and operating convenience of the functions has been improved. Options have been included for fast vector smoothing and for tilt-optimized calculation of toolpaths even without manual definition of vectors.

Tebis Version 4.0 Release 4 also offers new possibilities for robotic machining. For example, additional axes in robot cells can now also be controlled as simultaneous NC axes if the robot is mounted on a positioning unit.



TDM Systems to Feature Tool Data Management of the Future

—Booth #2446

TDM Systems will present its new generation of software for Tool Life-cycle Management at WESTEC 2017.

TDM Systems will feature its newest software, “TDM next generation”



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which offers new introductory options as well as highly integrated global system integration. TDM next generation is a state-of-the-art, highly evolved platform that can be used to operate all existing TDM modules and TDM Global Line modules simultaneously. It features enhanced performance, worldwide networking and easy scalability, helping users implement Industry 4.0.

TDM next generation has responded to the ever-increasing digitalization of production and enabling its customers to completely renew and modernize their TDM solutions – without complex system change. The conversion from the previous 2-tier architecture, the new modern 3-tier architecture increases both performance and pro-

cess reliability while simultaneously reducing installation and service effort. Additional advantages include simplified interface handling, easy use of on-demand and browser-based solutions and the combined use of standard and engineering solutions. TDM Systems will exhibit together with their partner OmegaTMM.

Tsugami/Rem Sales to Demo New Machine Tools —Booth #1435

Tsugami/Rem Sales' Westec 2017 showcase includes the newest Tsugami LaserSwiss, a 20 mm, 7-axis Swiss style CNC lathe with two fully inte-

grated SPI lasers, one for laser cutting and one for welding. The SS207-5AX LaserSwiss is designed and built by Tsugami/Rem Sales' sister company, Tsugami Automation.

"The addition of a second laser head for welding provides enormous flexibility for end users," Tsugami Automation vice president Graham Noake said. "They can reflow a swaged tube end, and they can weld two pieces together, then machine them."



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The laser cutting and welding heads can be mounted on either the X/1, Y/1 or B axes, and all operations are programmed and driven from the machine's Fanuc 32i-B control.

The Tsugami BW129Z is also new to the show this year. Frequently used for pinch turning and pinch milling, the 9-axis, 12 mm capacity split-slide CNC precision Swiss style lathe can house 28 tools and is equipped with a Fanuc 31i-B CNC.

“The biggest benefit of a 9-axis machine, like the BW129Z, is that it has three tools in the cut, all cutting the part simultaneously. Additionally, all three tools have independent feed

rates. This means shorter cycle times, allowing end users to produce more parts at a quicker rate than with other machines,” Tsugami/Rem Sales vice president Mike Mugno explained.

Other Tsugami machine tools scheduled to make their first appearance at Westec 2017 include the B0385L high performance gang lathe, and the heavy duty M08SY CNC turning center.

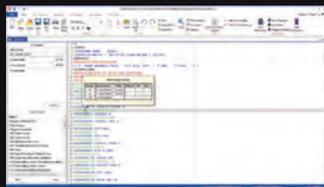
Visitors can also see the B0326-II, one of Tsugami's most popular machines, in action. This 32 mm, 6-axis Swiss type lathe's Fanuc 32i-B slashes cycle time by permitting true simultaneous operation of the main and sub spindle.

Chick Workholding Solutions, Inc.
Features Newly Designed OneLOK
—Booth #2338

Chick Workholding strives to provide that latest innovative products designed specially to make it easier and faster for the machinist. Chick learned a great deal from the 2010 One-Lok design as it delivered the efficiency improvements that they strived for and are now introducing a new design of the OneLOK (5OL1550 / 5OL1540).

This New OneLOK design is significantly lighter, corrosion resistant, and features more benefits to make it

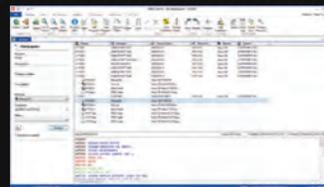
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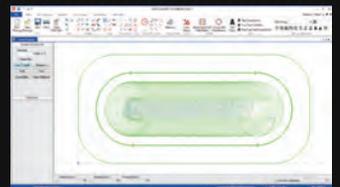
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Machine	Part Number	Operator	Start Time	End Time	Status	
HMC-204	541-4636	Marv	03:52	03:50	Running	
HMC-518	543-6460	Wallace	00:07	03:40	Running	
VMC-3Axis		Ingen	Patrick	00:00	00:00	Running
HMC-48	1404	Roark Jr	03:21	03:50	Running	
	507-5420	Stan	06:24	06:20	Running	
	509-0159	Dwight	00:08	02:45	Running	
VXX-S		Ingen	Esther	00:00	00:00	Running

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easier and faster for the machinist to setup. With short-run manufacturing, it's not the machine that's driving the efficiency, it's the efficiency of the machinist that's important so it's crucial to provide them with the best tools possible.

Grinder Experts to Discuss Grinding Applications
—Booth # 951

Grinding experts from GCH Machinery, GCH Tool Group and Total Grinding Solutions (TGS) and will be on hand to discuss grinding applica-

tions and challenges at Westec.

GCH Machinery, GCH Tool Group and Total Grinding Solutions, all members of the GCH family of companies, offer customers a "total solution" to all grinding needs, including full turnkey grinding systems, grinder design, grinder process and grinding automation.

Shop Floor Automations Will Have Hardware & Software Solutions
—Booth #1935

Shop Floor Automations (SFA) will display software and hardware solu-

tions to help manufacturers increase productivity, OEE, and profits without buying new machines or downsizing their workforce in order to afford upgrades. They will be exhibiting hardware, DNC Software, machine monitoring, job scheduling and will be giving away products for those that visit the booth.

SFA will be displaying their USB to CNC hardware options, such as the Portable USB Connect. Connect your machines via Ethernet and Wireless devices. One of their newest products, the WiFi USB Connect, is a solution for enabling old machines to wirelessly send and save programs to a shared



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folder. SFA's Floppy Drive Emulator will be on display, as well as their newest version, which is the Okuma Floppy Drive Core Replacement.

SFA will be displaying DNC Software which enables you to control and secure thousands of your CNC programs. SFA specializes in DNC communication via Predator DNC, which also comes with a free copy of Predator CNC Editor.

Get notifications whenever there is a production problem on your shop floor. Give machinists a voice, by giving them access to a fully featured data entry screen and monitors on the shop

floor with machine OEE updates. Scytec DataX-change will be on-hand at Booth 1935 to give live demonstrations of their machine monitoring software.

It's time to drop spreadsheets; graphical scheduling is the best new option for your shop floor. Make live



changes to your production schedule and see how it effects your overall jobs list, in real time. See how early or late your projects really are. No longer waste time updating paperwork or fixing inevitable human errors.

Also check out SFA's G-code "there's no place like home" shirts. There will also be G-code mousepads available to attendees. Shirts will be given to those who stay for a brief consultation and get their badge scanned, but take a mousepad just for dropping by.

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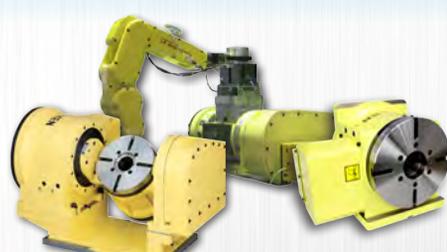
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Thinbit to Show Wide Array of Their Tooling
—Booth #2106

THINBIT® will exhibit at Westec their grooving, threading, boring, turning, parting, face grooving, form tools and associated toolholders along with MINIBORE® indexable boring bars and inserts.

Radan and Surfcam, by Vero Software
—Booth #2347

The Radan CAD/CAM sheet-metal solution and Surfcam CAM system, by

Vero Software, will be exhibited Sept. 12-14 at WESTEC 2017.

WESTEC attendees are invited to learn more about Radan and Surfcam by visiting Vero Software at booth No. 2347, where demonstrations of the new features and upgrades available in both systems will be presented.

In Radan 2017, Radmanager's ability to manage both 2D and 3D engineering of parts is the precursor to an entirely new upcoming engineering system for any type of parts, including 5-axis laser-cut sheet metal, tubes, flat, and bent parts.

This 3D engineering of parts is becoming increasingly important. It will enable manufacturers to break as-

semblies down from CAD systems and into individual parts to fully understand everything about them.

Surfcam 2017 R2 introduces a new turning cycle that includes B-axis capabilities for machining on a turning center. This new feature delivers greater accessibility in the machining of complex profiles by dynamically positioning the insert.

As the toolholder is gouge-protected during deployment, users have even more control over toolpath by deploying over-ride angles. This new cycle can be used with all types of turning tools, and for both roughing and finishing operations.

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available in Surfcam 2017 R2 include new and enhanced capabilities for milling, turning, simulation, and wire EDM.

CGTech to Exhibit VERICUT Software Version 8.1 —Booth #1927

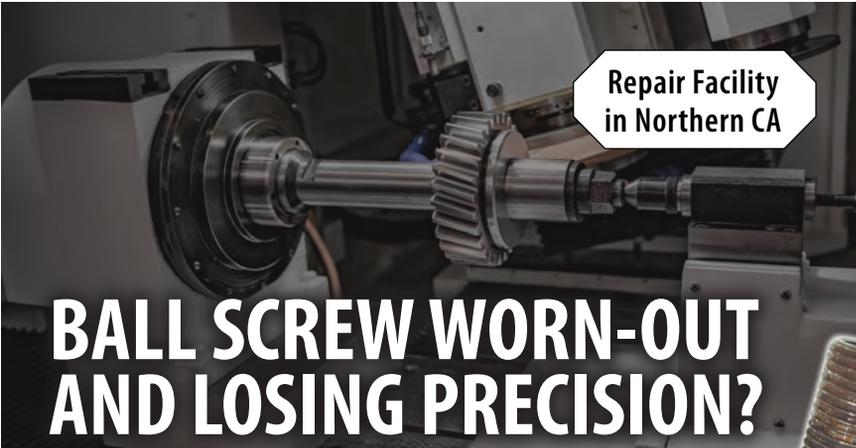
In VERICUT 8.1, a new Additive Manufacturing (AM) module has been employed, along with enhanced support for Force™ optimization, Workpiece Sectioning, X-Caliper measurement tool, Report template, and Grinding and Dressing operations.

VERICUT’s additive module simulates both additive and traditional machining capabilities used in any order on hybrid CNC machines. Simulating both operations can identify potential problems that can occur when integrating additive methods. The user can access detailed “history” stored with VERICUT’s unique droplet technology, which saves programmers time.

This additive capability checks: accurate laser cladding and material deposition, detects collisions between the machine and additive part, and finds errors, voids, and misplaced material. VERICUT simulates the post-processed NC code that will be used to drive the CNC machine, and ensures proper usage of AM functions

and laser parameters.

VERICUT’s Force optimizes NC programs by analyzing cutting conditions such as force, chip thickness, and feed rate. In 8.1, Force can display graphs and charts in real-time, revealing cutting conditions and forces as they are encountered by cutting tools. This feature allows the NC programmer to identify undesirable cutting conditions such as excessive forces, chip loads, tool deflection, or material removal rates represented as spikes in the graphs. Force Charts are dynamically linked with VERICUT’s NC Program Review, making it easy to review problem cutting conditions. With one click on the chart, the user is taken to



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AFTER



the location in the CNC program and shown the actual cut in the graphics window. By optimizing toolpath feed rates: Force reduces production time, prolongs tool life, and produces a higher quality finished product.

VERICUT's new Section dialog makes it easier and faster to see inside a part during simulation. This allows the user to check proper fit, and identify interference between the workpiece and machine components. Sectioning abilities in 8.1 extend to machine views.

The X-Caliper measuring tool identifies model thickness, length, and width dimensions. In 8.1, measurements are shown on the part, and can be rotated with the part, zoomed, or dragged to a different location.

Revisions in Report template make creating a custom report easier and now users can simulate Dressing: where a secondary tool is applied to a grinding wheel to freshen the grinding surface, or to change the grinding wheel cutting shape.

Yamazen Inc to Exhibit Machine Tools from Brother and Takisawa —Booth #1103

Yamazen's booth will display and showcase some of their finest machine tool technologies. Visitors will have the opportunity to speak with Yamazen's highly knowledgeable sales team that has access to the most advanced information and techniques developed to fit unique machining requirements. These

machining solutions can improve productivity, quality and reliability.

Brother International Corporation will show the compact machining center SPEEDIO; S7000X1 vertical machining center with high speed 27,000 RPM spindle along with the Nachi Flex-S robotic loading system, R450X1 pallet changer machine with 10,000 RPM high torque spindle and the new M140X2 multi-tasking machine all featuring the improved, powerful and fast Brother CNC C-00 control.



The expertise, power and flexibility of Takisawa combined turning and milling centers will be showcased. The TS-4000YS opposed twin-spindle, TT-2100GA parallel twin-spindle with modular unit and the TCC-1100 single spindle high productivity turning center.

CyTec-Systems to be at Westec —Booth #1055

Cytec is a German company that produces high-tech machine parts, cylinders, clamping systems, motor spindles, 5-axis milling heads, 2-axis trunion and rotary tables of the highest precision and standards. Cytec local North American representation in Canada, USA and Mexico offers quick solutions, rapid response fulfillment of parts and service.

Cytec introduced to the manufacturing world a well received Friction Stir Welding Spindle (FSW) utilizing

their M21XL 5-axis fork head. The end- result of the process is a very seamless smooth joint surface. This technology allows it to be incorporated into a CNC 5-axis Gantry mill or a Robotic System.

Cytec provides the highest quality of components such as bearings, rotary unions, axis clamping and coupling systems designed and produced in their German Factory.

Expanded Metalworking Fluid Line —Booth #523

Milacron Fluid Technologies' CIMCOOL brand has added a new product to its CIMPULSE metalworking fluid line. CIMPULSE products are designed to cover a broad range of applications with trouble-free performance, allowing customers to use one product across a wide range of operations.

CIMPULSE 49MP is an oil-containing, multi-purpose fluid for both machining and grinding. "It offers high performance without the use of traditional extreme pressure lubricants and is recommended for turning, drilling, milling, reaming, boring, tapping and grinding of most metals,"

said a company spokesperson. "It is excellent in hard water situations and leaves a light, manageable residue. More importantly, it is easy to use and minimizes the number of products CIMCOOL customers have to inventory."

Compacto Base Holder —Booth #935

EXSYS Tool, Inc. will feature its EXSYS Compacto base holder, a system designed to reduce set-up and tool change times for most CNC



“At 10,000 RPM precise rod tolerances are critical.” Joe Moch, Owner, Oliver Racing Parts

Joe Moch, knows a thing or two about connecting rods. His company, Oliver Racing Parts, has been manufacturing high-performance con rods for over 30 years. Oliver rods are found in victory lanes – from local circle tracks to the highest levels of NHRA.



“When an engine is nearing red line rpm’s the con rod tolerances are crucial,” says Joe. “Bore concentricity and parallelism are important to minimize friction, limit wear and improve engine response across the rev range. That’s why I rely on Sunnen honing machines to provide the tolerances that the top engine builders demand.”

Take Joe’s new Sunnen SH-4000 rod hone for example. It can hold bore-to-face perpendicularity to less than 0.0003” and bore diameter to within 0.0001” -- plus closely control the crosshatch pattern for better bearing performance.

“The extreme squareness of the SH-4000 face plate to the tooling and the flatness of the face ring-to-face plate has consistently improved repeatability and significantly reduced the tolerance window of our parts,” says Joe. “The direct spindle tooling not only reduces setup time from job-to-job, but further improves the accuracy and repeatability of our honing process.”

Sunnen’s SH-4000 rod hone is trusted by Oliver Racing Parts to hone the connecting rods trusted by winning engine builders.

Engine builders can trust that Oliver rods will be the same from batch-to-batch and rod-to-rod...one less thing to worry about half way to the finish line. To find out how the Sunnen SH-4000 honing machine can improve the bores of your components, contact your Sunnen sales and application engineer at 1-800-325-3670, or visit

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Booth #1335

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turning centers. EXSYS Compacto is available in C3, C4, C5 and C6 sizes and is suitable for all standard PSC (Capto) adapters.

“When compared to traditional base holders, the EXSYS Compacto connection interface offers more available space and clearance, even for larger workpieces,” said a company spokesperson. “It also offers improved torque transmission and rigidity for increased tool accuracy. The EXSYS Compacto’s polygon shape connection further adds to its high precision and quick-change ability while on-line or off-line.”

A built-in release mechanism on the outer diameter of the EXSYS Compacto’s spindle provides operator accessibility. Operators can lock and unlock the adapters with a small torque key for tool changes. The automatic ejection of the adapters further increases the speed and efficiency of tool exchanges. The EXSYS Compacto is available for all older model machines and current model machines.

High Precision Piezo Probing Line-Booth #1126

Marposs will feature its high accuracy Mida Diamond touch probes featuring piezo-electric technology. It is designed for 5-axis machining centers and milling machines. “These probes, available in optical or radio transmission styles, provide excellent measurement performance on 3-D surfaces with repeatability within 0.25 μ m. They are well suited to industries where precision requirements are pushed to the limits daily,” said a company spokesperson.

Through automatic detection of machine axes position, these probes achieve part positioning, workpiece orientation, origin identification and accurate part measurement.

Several types of applications are available. Operating with either a radio or optical receiver, the probes offer a wide operating field, useful for large machines where line-of-sight between probe and receiver is not ensured. And, since the line of sight between the touch probe transmitter and receiver is not required, complex surfaces and deep cavity parts can be inspected. Measurements may be performed at depths as great as one-meter due to the modular structure and extensions of the probe.

Advanced Manufacturing Tools

—Booth #2534

Allied Machine & Engineering will highlight the Wohlhaupter VarioBore and the GEN3SYS XT Pro line of high penetration drilling products at Westec.

Allied will showcase two German made modular Wohlhaupter tooling systems. Wohlhaupter is now part of Allied’s holemaking and finishing solutions. The Wohlhaupter VarioBore precision boring head is a versatile boring tool. The VarioBore has a removable digital display called the 3E Tech, which allows users to easily read diameter adjustments while the tool is still in the machine spindle. With a diameter range of .016” - 5.985” and adjustment accuracy held to .0001” on diameter, the VarioBore provides versatility and precision. Although the 3E Tech digital display makes reading adjustment easy, the VarioBore can be used without it and adjustments can be read on the Vernier dial screw.

Another product to be featured is the Wohlhaupter 565 (564), designed for finishing precision bores. The self-balancing technology utilizes an internal counterweight that moves with every diameter adjustment made.

Allied will highlight the new GEN3SYS XT Pro line of high penetration drilling products, which features holders and inserts with three unique geometries and two advanced coatings.

The T-A PCD special geometry insert was specifically designed to withstand strong and highly abrasive materials, such as CFRP materials that are frequently used in aerospace and other high precision industries.

The T-A Drill series features a replaceable tip design, allowing users to replace only the insert when it has worn out. Allied representatives will be available to discuss how this reduces production costs over time.

The Original T-A holder with wear pads, often used for manufacturing aerospace hydraulic manifolds, will also be featured. Known as the Stealth Drill, this tool is an option for drilling the largest hole in manifolds.

Other tools on display include the AccuPort 432 port contour cutter, which enables users to drill and finish port forms in one operation; the APX Drill, which offers a carbide clad wearing surface to ensure alignment and stability, and enhanced hole finishing made possible by ALVAN replaceable head reamers.

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Industry News

Selway Machine Tool Co. Announces the Promotion of Pat Hayes to VP of Business Development

Selway Machine Tool Co. announces the promotion of Pat Hayes to V.P of business development. Hayes has consistently been the top senior sales consultant for Selway, covering the Bay Area & Silicon Valley.

“Pat started with us in 1995. Over the years he has demonstrated the ability to successfully support our customers with the appropriate solutions. Because of the strong customer relationships Pat built, he naturally began to look for new technologies that benefit the Selway customer,” president Bill Selway said. Over the past few years Pat has taken on the responsibility of looking at new solutions and technologies that enhance Selway Machine Tool’s existing CNC machine tool portfolio. This new responsibility does not mean Hayes is stepping away from supporting his sales territory. Instead he has built a support team of jr. sales associates & sales admin to assist in managing his dual role.



“Pat has done a tremendous job networking within the industry by collaborating with our customers, trade organizations, suppliers, and internal support teams to identify out of the box solutions and help customers consistently achieve excellent manufacturing results,” stated Joe Madden, COO.

Pat not only brings years of experience but a passion for new manufacturing technology and processes. Prior to his work with Selway, Pat was a top sales consultant for one of the iconic sales corporations at the time. He will be working with sales, service, & engineering departments at all Selway Machine Tool Co locations.

“I am excited to expand upon the role of VP of business development at Selway Machine Tool Co. Looking out for new technologies that will aid in my customer success is something I have always done,” Pat stated. “This promotion will not however, take me away from supporting my existing customers; the team I have assembled will ensure that. I look forward to working with our regional offices to expand their offerings.”

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Industry News

Ellison Technologies Inc. and Accustrip Announce U.S. Sales Partnership

Ellison Technologies, Inc., (Ellison), one of the largest CNC machine tool distributors in the U.S., has formed a sales partnership with the Danish company Accustrip.

Accustrip is among the leading worldwide technological manufacturers of coolant filtration and chip/Swarf separation systems for CNC machines within the treatment of coolant emulsions. The reason is their revolutionary and patented Full Flow Technology, which allows for the effective filtration of coolant even in the most turbulent fluids. In addition, Accustrip also specializes in high-pressure coolant systems with advanced self-cleaning filtering technology.

With this new partnership, Ellison

will be able to provide its customers with both standard and tailor made solutions for coolant filtration and chip/Swarf separation for their broad range of CNC machine tool equipment offerings. In addition, Ellison will provide after sales, service, support and spare parts for Accustrip products in the US, through its 16 established locations across the country.

It is the common goal of Ellison Technologies Inc. and Accustrip, to bring the best available coolant filtration and chip/Swarf separation solutions that support factory automation and plant modernization initiatives to help customers increase their overall manufacturing efficiencies to the US market. Accustrip's solutions offer: high quality, reliability, short payback period, and are the most environmentally friendly on the market.

DMARK Launches In-House Customer Production Featuring HP Multi Jet Fusion 3D Printing Technology

DMARK Machine & Tool Co., announced their new in-house installation of the HP Jet Fusion 3D 4200 Printing Solution. The HP Jet Fusion 3D 4200 Printer is an award-winning 3D printing solution for end-to-end prototyping and production. This installation enables DMARK customers to test HP's Multi Jet Fusion Technology as part of the sales and service process.

HP's Multi Jet Fusion technology delivers a unique Multi-Agent printing process that produces exceptional dimensional accuracy and fine detail. The construction is based on cost-efficient materials that offer what the company



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By printing functional parts for the first time at the individual voxel level (a voxel is the 3D equivalent of a 2D pixel in traditional printing), HP offers customers the ability to transform part properties and deliver mass customization.

Take advantage of DMARK's production capability. Test and prove the feasibility of using HP 3D printing technology to competitively manufacture your parts.

Doosan Machine Tools America Partners with 5ME® Cryogenics

5ME and Doosan Machine Tools America have joined forces to showcase the advantages of cryogenic machining, including faster processing, longer tool life, increased part quality and lower environmental impact. "Cryogenic machining is particularly suited to the processing of tough materials like, Titanium, Diesel and Compacted Graphite Irons, Hardened/Stainless/Alloy Steels and Ceramic

Matrix Composites", said Mike Judge, executive vice president of 5ME. "As a result of this strategic alliance agreement with Doosan, 5ME's cryogenic machining technology is now offered as an option across a variety of Doosan Machine Tool platforms, allowing manufacturers to address real-world production challenges."

5ME's unique, multi-patented cryogenic machining process is technology that the company reports enables higher metal removal rates and longer tool life by delivering liquid nitrogen at 321°F through the spindle/turret, cutter body, cutting tool, and directly to the cutting edge. The company also reports this environmentally friendly machining technology increases throughput, part quality, tool life, and profitability, while eliminating cutting fluids and



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In Q4 2017, Doosan will sponsor an open house at 5ME's Cryogenic Machining Technology Center in Warren, Michigan, during which a NHP6300 4-Axis HMC equipped with 5ME Cryogenics will be cutting a variety of tough-to-machine materials commonly used throughout the aerospace & defense, auto/truck, construction/agriculture/mining, die mold, and energy industries.

Heimatec Precision Tools Rolls Out New Website

Heimatec announced the rollout of its new website at www.heimatecinc.com. The new site offers an in-depth look at the company's extensive lines of standard and machine brand tooling, including the new Tecnicrafts line of collets and guide bushings, specifically designed for the Swiss machine tool market.

The site includes dozens of downloadable PDF catalogs, as well as an online tool search feature and videos of various live tool demonstrations. A "Contact" page offers customers the option to inquire directly from the site, and easy access to local manufacturer's representative information. The site is easy-to-navigate and is mobile phone friendly.

Also included in the website is a dropdown section on custom designed tooling, which Heimatec offers in addition to its standard tooling and machine brand specific line. Tooling experts work directly with customers to design solutions to suit specific requirements

for all CNC lathes, helping to solve the most challenging applications in multiple markets served by the company.

Heimatec Named North American Distributor for Tecnicrafts

Effective immediately, Heimatec Inc., will be selling products from Tecnicrafts Industries, a manufacturer of collets and guide bushings for Swiss Type CNC Lathes. Tecnicrafts is an ISO 9001:2015 Certified company, with its manufacturing plant in South India with state of the art machine tools and 115 technicians. Tecnicrafts collets and guide bushings are exclusively used for Swiss turning applications



on most popular machine brands and are widely recognized and accepted by customers in Europe and Asia.

The collets are offered in steel and carbide lined versions with grooved, smooth, serrated bores in standard and long nose types. Tecnicrafts produces special collets such as V-Line, U-Line, over-grip collets, for positive gripping of delicate parts without marks. The

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Ultra Precision (XP) W-type collets are available for tool grinding applications. Other collets offered includes 5C and 16C types.

Tecnibra's guide bushings are generally offered in carbide lining having super finish bore with roughness

value of less than 0.4 micron. These special guide bushings include U-Line, extended nose and long carbide bores (Max Land) for special turning applications.

The Bar feeder collets are available for most bar feeders.



All collets and guide bushings are offered in standard and ultra-precision grades. The bore profile includes round, square, hexagon, rectangular and profile bores as per customer drawings.

Fives Landis Corp. Opens New Technology Center in U.S.

Fives Landis Corp will open its new Technology Center in North America, located at its headquarters in Hagerstown, MD near Washington DC. At 6,000 square feet, the new R&D and demo facility will feature grinding systems from the company's versatile product range, including Landis-Bryant ID/OD grinders, Landis centerless grinders as well as Giustina surface grinding system.

"The Technology Center is a new milestone in our long company history and the latest step in the process of expanding our business activities beyond our traditional orbital operations," says Ron Wood, executive director of business development at Fives Landis Corp. "We will be able to not only develop and provide new products and processes but also help our customers with a proactive approach when facing the challenges of today's production environment, whether through test grinds, application and training support or R&D work. We work closely with key suppliers and other industry experts to find solutions that help our customers to improve and optimize their current operations," Wood continues.

One of the key focuses of the TechCenter operation will be the application support, especially in areas



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A Axis												
Rated/max. torque [Nm]:	154/308	400/770	550/1190	710/1340	1120/2000	1610/3130	2730/5080	5000/8000	-	390/700	-	750/1500
Clamping torque [Nm]:	600	1500	2400	4000	5000	7000	7500	12000	-	2000	-	4000
Swivel angle "A" [°]:	± 110	± 110	± 110	± 110	± 110	± 95	± 135	± 115	-	± 180	-	± 190
C Axis												
Rated/max. torque [Nm]:	155/178	430/820	670/1300	780/1530	1000/1950	1950/3700	2400/4700	5000/8000	700/1000	700/1200	1800/3500	1500/3000
Clamping torque [Nm]:	700	1400	2400	4000	5000	7000	7500	15000	4000	4000	5500	6000
Swivel angle [°]:	± 360	± 360	± 360	± 360	± 360	± 360	± 360	± 360	± 180	± 360	± 180	± 360

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where tough-to-machine or exotic materials traditionally create challenges for equipment and operators, such as in aerospace applications. Dedicated application engineers will work with customers from all industries to solve their very specific problems. It will also give clients the opportunity to attend hands-on machine demonstrations to help better understand processes and capabilities.

HEIDENHAIN Announces New Manager to Focus on Business Development of CNC Products

Heidenhain Cororation announces the new hire of Gisbert Ledvon as

TNC business development manager in North America. With over 20 years of extensive corporate industrial machine business experience, Ledvon assumed this new position earlier this year and is responsible for growing the CNC control side of the Heidenhain business in this region.

Heidenhain's CNC control models are referred to as TNCs and are growing in market share in North America. Ledvon is responsible for developing a strategy to drive technical value and commercial demand for the high-end TNC controls at the end user and OEM levels and reports directly to the new CEO David Doyle.

In addition, Ledvon is charged with leading a team of 5-axis machining,

programming and technology specialists at Heidenhain's North American subsidiary in Schaumburg, IL.

Prior to joining Heidenhain, Ledvon served as the director of business development for many years, as well as the applications manager prior to that, both for GF Machining Solutions (formerly AgieCharmilles).

Born in Germany and beginning his professional training as an apprentice



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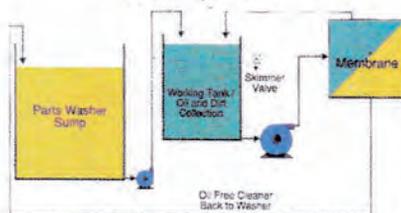
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via the Tool and Die Vocational College in Olsberg, Germany, Ledvon has lived in the United States for many years, where he completed a business program at Northwestern University's Kellogg School of Management in Evanston, IL, in 2009.

Emuge And Open Mind Establish Partnership

Emuge Corp. announced it has established a partnership with Open Mind Technologies. Recently the companies, which have had a history of collaborating to influence their respective cutting tool and CAM software de-

velopments, formally agreed to partner.

Both companies will continue to share technical data and best practices on machining applications and programs, participate in joint seminars and collaborate to develop and promote advanced, high productivity machining solutions for North American manufacturing professionals.

"We are very pleased to officially partner with Open Mind. Emuge and Open Mind have enjoyed a long, successful synergy, developing and providing cutting edge machining solutions for manufacturers throughout the world. This formally reinforces our commitment with Open Mind to provide the most advanced technology and machining productivity for our customers in North America," said Bob Hellinger, president of Emuge Corp.

Emuge and Open Mind are planning upcoming training and seminar events for 2017. Customers will be notified and information on events will also be posted on their respective websites.

Absolute Machine Tools Names David Grega Chief Operating Officer

Absolute Machine Tools has hired David Grega as chief operating officer. Mr. Grega will oversee the operation of Absolute's technical centers in Lorain and Mason, Ohio, Livonia, Michigan, and Elgin, Illinois.

Mr. Grega has a long history in the machine tool industry. He began his career as an apprentice toolmaker for White Machine in North Royalton, Ohio, then worked selling and servicing machining equipment from a wide selection of manufacturers. In 2001, he opened his own distributorship representing Fadal, Giddings & Lewis, Romi and Yama Seiki. After 15 years he became an engineering manager at DMG Mori Seiki (Cleveland), in charge of assisting the sales, service

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and applications engineering departments.

Mr. Grega joined Absolute Machine Tools in May of 2017. "Absolute has always had my highest respect as an importer/distributor," he said, "Joining their team seemed to be a natural fit. I feel right at home working for this solid, family-owned business.

Steve Ortner, president and CEO, said, "Absolute has always been a solutions provider in the machine tool industry. With his comprehensive experience in the machine tool business, David will play an important role in helping our company develop and provide advanced manufacturing solutions and processes that will add crucial value and maximize productivity for our customers."



GF Machining Solutions' System 3R Celebrates 50 Years of Precision

GF Machining Solutions' System 3R, a leading supplier of modular workholding/tooling systems, automation and software, celebrates 50 years of Swedish precision and innovation.

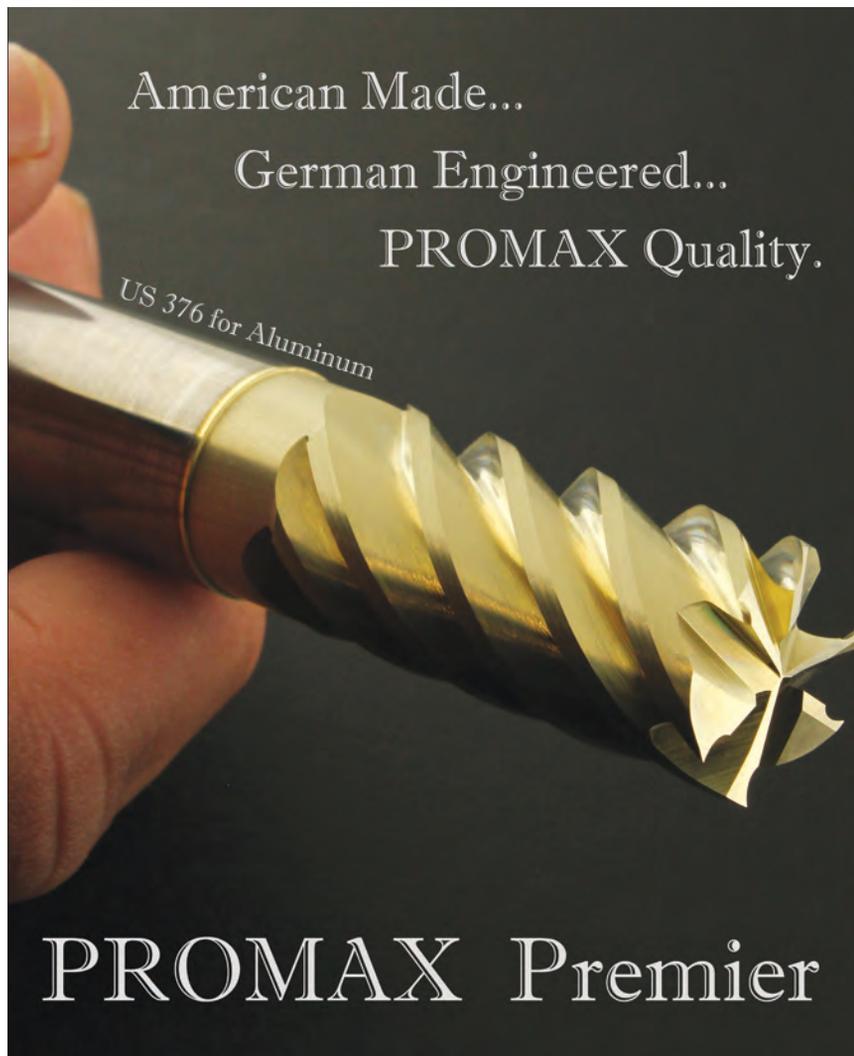
Founded in 1967, the company with headquarters in Stockholm, Sweden, has pioneered a wide range of tooling, pallet and automation systems that generate considerable added value for manufacturers around the world.

With System 3R Transformer, manufacturers can integrate a wide variety of technologies and components from different manufacturers within the same cell. This open architecture approach allows end users to create an automation cell where each individual component decision is optimized, as

opposed to having choice constrained by compatibility. Manufacturers can initially automate a single machine, then if needed, easily expand to include up to 12 machines within a cell.

With Industry 4.0 as a key element

of the company's strategy, System 3R continues to deliver advanced tooling and automation-based software that regulates the interaction between machines and robots to avoid errors and improves analysis of all process



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information such as the time required for the subsequent process stages and scheduled maintenance.

HEIDENHAIN Announces New President/Managing Director

The Dr. Johannes HEIDENHAIN GmbH company announces the appointment of David Doyle as president and managing director of HEIDENHAIN Corporation, effective July 1, 2017. David assumes full responsibility for the HEIDENHAIN customer-focused operations for the U.S., Canada and Mexico. This change continues the succession plan for Mr. Rick Korte, present CEO of HEIDENHAIN Corporation.

“I am happy to announce the next phase of the succession plan for our North American operations, with the promotion of David Doyle to president and managing director. I have the utmost confidence in David and trust he will continue to grow our business and support our customers with world class service in all areas”, remarked Rick Korte, CEO of HEIDENHAIN.

“I am looking forward to leading the HEIDENHAIN Corporation team through the next phase of development and reaching our growth objectives in North America. Core to our team’s mission is delivering the highest quality innovative products to the markets we serve, with exceptional support to our customers. We leverage our breadth of applications expertise, advanced technologies and responsiveness to enable our customers to deliver breakthrough



engineering solutions and reducing their time to market. We continue to invest in our Bay Area resources and infrastructure, supporting our OEM partners with both the HEIDENHAIN product portfolio and ETEL systems expertise,” said David Doyle, about his change in responsibility.

Hudson Tool Steel Introduces Precision Ground Flat Stock 24-Hour Shipping

Anaheim, CA based Hudson Tool Steel is helping shops reduce material prep time with precision ground flat stock. On-size and over-size, close tolerance flat stock eliminates the time-consuming process of squaring and flattening, which increases productivity.

Most orders ship same day or next day from centrally located distribution centers. Hudson Tool Steel also offers technical support on materials and heat treating.

Hainbuch America Expands to Northwest

Hainbuch America Corp., a provider to workholding solutions for North America announced that Jan Binder is now the regional sales manager for the Pacific Northwest Region, covering the states of Washington, Seattle, Idaho, Montana and Wyoming.

Mr. Binder has worked for Hainbuch America for 5 years. During that time, Jan has worked as an inside sales representative. His previous position provided him with extensive product knowledge and technical ability that will be an asset to the expanding customer base in the Northwestern US.

For over 60 years Hainbuch has been a partner to the manufacturing industry seeking ways to optimize

the performance of its customers. The company pioneered the '10 second' collect change in the 1970's



and has continued to be a leader in developing innovative ways to help their customers changeover more efficiently and improve throughput. Their recent innovations in modular, accurate, quick change tooling is providing manufacturers creative ways to redeploy their capital to meet the rapidly changing requirements of their end users.

Ganesh Machinery Open House 2017

Ganesh Machinery announces their 2017 open house “Gen Fest 2017” for Tuesday, October 3rd for California customers from 10:00am to 4:00pm and October 5th for out of state customers from noon – 5pm. The event will feature new state-of-the-art CNC machines with cutting demonstrations. This event will be held at the Ganesh Machinery newly remodeled showroom at 20869 Plummer St. in Chatsworth, CA.

Ganesh Machinery has identified many ways to help you be more successful, with new cutting-edge technology, automation solutions, focusing on labor reduction and seamless production. Ganesh will give presentations on how to achieve a complete part production by taking the machining-cell concept to the next level. New high-speed drill-tap machines and integral pallet changing milling machines will be demonstrated as well as CNC Swiss and multi-tasking CNC lathes

Industry News

with up to 11-axis making short-work of complex parts.

The Cyclone – 32 CS CNC Swiss style machine will be shown with new enhanced capabilities as well as the new 20mm and 42mm “8-axis” Swiss machines. The 36-tool Cyclone – 52 BY2 “9-axis” CNC lathe will be shown using the angular cutting capabilities while demonstrating how complex lathe parts, up to Ø2” bar capacity, with milled and drilled angle features can be easily machined.

The new Ganesh CNC vertical milling machine line, starting with 24” by 16” and going up to 100” by 39”, will be demonstrated. The Ganesh 5x-8 “5-axis” milling machine will be shown

processing a full 5-axis workpiece. These new series of premium CNC verticals feature the Mitsubishi M830 CNC control.

Ganesh also offers a complete “Toolroom line” of manual and CNC machines. The Ganesh “Big-Bore” lathe series, starting at 30” swing and going up to 100” lathe swing capacity with spindle bores up to 15”.

Ganesh has extensive capabilities in production analysis, automation and turn-key solutions in support of challenging production applications. Join them from 11:45am to 1:45pm for a fresh-grilled Mexican lunch.

Mahr Federal Changes Name to Mahr Inc.

Effective May 31, 2017, Mahr Federal changed its name to Mahr Inc., the company announced. Mahr Inc. is a member of the Mahr Group, a producer of dimensional metrology instruments, with more than 1,900 employees and sales of about \$250 million.

“Changing our name to Mahr Inc. is a logical and long planned step,” said Tony Picone, Mahr Inc. president. “As a worldwide manufacturer of dimensional metrology equipment and member of the Mahr Group, this change will provide more consistency and better product and brand recognition across all our markets.”

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Industry News

Selway Machine Tool Co. Announces the Promotion of Todd Newhouse to Regional V.P of Selway Machine Tool, Washington.

Selway Machine Tool Co. announces the promotion of Todd Newhouse to regional V.P of Selway Machine Tool, Washington. Newhouse has supported the manufacturing community of Washington since 1995, as sales associate & regional sales manger prior to the new appointment.

"With the continued growth in the Washington region, Team Selway is excited to have Todd Newhouse lead our commitment to provide our customers the highest level of local sales,

service, and application support," stated Joe Madden COO. "Todd brings a tremendous amount of knowledge and passion to this critical position and he has established the highest quality support standards to help strengthen our customer relationships."

Selway's commitment to the regional business model includes providing their customers with a complete, local support experience. Staffing them



with a regional VP, a regional service manager for technical phone support and service scheduling, application engineers for onsite training and in-house training, sales consultants, and dedicated service and sales administrators.

"Washington was one of our first satellite offices," Bill Selway president said. "My brother Pat Selway moved up there in 1981 and acted as sales/service/application engineer all in one. We now have over 20 employees in our Washington office and our adding more every year. Todd Newhouse has been a big part of that growth."

Newhouse's 27 years of product knowledge and customer relationships has solidified Selway as a market leader in the northwest.

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Industry News

Design-2-Part Shows to Hold Two West Coast Shows this Fall

Design-2-Part (D2P) Shows, America's largest design and contract manufacturing tradeshow, will have the West Coast covered this November with two shows.

Up first will be the Northwest Design-2-Part Show, November 1 & 2 at the Portland Expo Center in Portland, Oregon. D2P then moves down the coast to San Diego for the Southern California Design-2-Part Show, November 15 & 16 at the San Diego Convention Center.

Design-2-Part Shows provide design engineers, manufacturing engineers, managers, and purchasers an excellent opportunity to meet local

and national job shops and contract manufacturers face-to-face to source custom parts, components, services, and design. Exhibiting companies will be showcasing their design-through-manufacturing services featuring more than 300 product categories for the metal, plastics, rubber and electronics industries. D2P Shows are working shows and visitors are encouraged to bring sample parts and drawings.

The two West Coast shows are part of an annual 11 show schedule that D2P runs across the United States each year. The San Diego show is one of the highlights of the 2017 slate as D2P makes a long-awaited return to the area after an 11 year absence. The Portland show is on a rotating schedule of every two to three years with the most recent event held in 2014.

D2P Shows exclusively feature exhibiting job shops and contract manufacturers with manufacturing operations in the United States. Companies that do not have facilities in the U.S. are not permitted to exhibit.

Absolute Machine Tools Names Regional Sales Manager for Southern and Western U.S.

Absolute Machine Tools has named Alex Churbock as regional sales manager for the Western and Southern U.S. Churbock started in the machine tool business in 2013 as an intern at Cage & Gear Machine in Canton, OH. In 2014, he was hired by Chinese machine tool OEM Neway CNC-USA, Stafford, TX,

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Industry News

as a sales engineer, and was promoted to national sales manager in 2015.

There, he increased machine tool unit sales from 12 machines to nearly 90 machines and grew the distribution organization from 5 distributors to 25 nationwide.

“We are delighted to have Churbock join our team,” said Absolute Machine Tools president Steve Ortner. “He has wide experience, from machining on the shop floor to interacting with customers in sales and then managing national machine tool sales efforts.”

Methods Machine Tools to Host MetalStorm 2017 October 4th and 5th

Methods Machine Tools, Inc. will be hosting MetalStorm 2017, on

October 4th and 5th from 9:00 am to 5:00 pm each day. A major open house event, MetalStorm 2017 takes place at the company’s corporate showroom and technical center at 71 Union Avenue in Sudbury, Massachusetts. The event will showcase numerous manufacturing solutions.

MetalStorm 2017 will feature over 50 machines under power. Live demonstrations will be presented on Yasda, Nakamura-Tome, Kiwa, Fanuc, Feeler, Exeron CNC die sinkers and high speed mills. New machines being introduced include, a Yasda micro center YMC-650, Nakamura-Tome multi-tasking machines; WY-150 with twin-spindle two turret construction, and NTY3-150 with twin-spindle, three turret construction, and the new Fanuc C800 CiB wire EDM with 20” Z axis height. Additional new machines

to be presented include, but are not limited to, Feeler FT-30M heavy duty CNC turning center, 3D Systems’ Project MJP5600, as well as the newly enhanced VisionGauge line of digital optical comparators.

Automation solutions will be demonstrated including a RoboDrill twin cell featuring two Fanuc RoboDrills being serviced by a single robot. The Methods lathe JobShop cell will introduce the new single spindle, single turret Nakamura AS-200 high performance multitasking turning center. For large parts, a Nakamura-Tome NTJX will be set up in a cell with capacity to load up to 60-pound blanks. There will be an interactive Methods / Fanuc Robot Learning Lab. Fastems will be onsite with a working scaled model which showcases their high pallet ca-



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Industry News

capacity, flexible manufacturing system (FMS).

Methods automation specialists will also be demonstrating post processing applications, including 3D vision for bin picking, and a full deburring cell using Fanuc robots to deburr and wash parts. Methods will also be demonstrating an unattended laser marker that uses a Fanuc robot.

Additive manufacturing, robotics, and subtractive processes tied together in an automation demonstration will provide fast, highly efficient, complete 3D part production. Additive processes can also be experienced on the 3D Systems' ProX DMP 320, the SLS ProX 500 and the Markforged 3D printers.

Seminars will be presented on key topics, including Geometric Dimen-

sioning & Tolerancing, EDM solutions, CAMplete, Turn / Mill Technology & Selecting the Right Turning Machine, Choosing the Best Automation Solution, 5-Axis Inspection, Turnkey Engineering Solutions, Understanding Design for Manufacturing & Assembly, and more. To pre-register please visit: www.methodsmachine.com

Toyota Americas Appoints Director of Business Development for the West Coast

Toyota Americas has appointed Fernando R. Garcia as its director of business development for the West Coast region covering California,

Nevada, Arizona, Oregon, Washington and Idaho. He will leverage long-term relationships with new and current customers, oversee sales and manage application engineering activities based out of the company's Placentia, CA, technical center. Nurturing strategic industry partner relationships is also a key duty - Toyota's tech center hosts learning seminars featuring new manufacturing techniques and technologies for local customers.

"We are proud to have Fernando on our team," said Howard Michael of JTEKT Toyota Americas Corporation. "We have great expectations for his success." Garcia brings more than 35 years of leadership in manufacturing.

Previous positions have included president of Ellison Technologies'



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Industry News

Northern California Operations, general manager of Methods Machine Tools and AMTDA/AMT board member.

Takisawa Tech Corp Moves to Larger Facility

In order to keep up with growing demands and business Takisawa Tech Corp has moved into a larger building in Chino Hills, CA. The new facility is 13,283 square feet which is almost double the size of their previous location. This location will be able to stock almost double the spare parts and machines than before.

Takisawa Tech has a strong distribution network in the western region for their large assortment of popular CNC

lathes. Their new address is 15217 Fairfield Ranch Rd., Unit 130 Chino Hills, CA. 91709

Edel Machines Names CNC MATTERS West Coast Distributor

Edel Machines recently introduced "CNC Matters" as their west coast Distributor and "ETZNAB" as their distributor in Mexico. Between Edel's in house factory and distributor network they have mission critical local parts and service response.

Now American companies have a direct and convenient access to superior machines made with an ingenuity and precision of German engineering.

Edel is a high-end world class German manufacturer of multi axis machining and turning centers. Edel has been producing high rigid design technology for over 30 years. This innovative technology enables companies to make products with extreme precision and dynamic performance. Complex milling of tool, die and mold machining can easily be achieved from roughing to finished parts, meeting and exceeding the high demand of accuracy and superior surface quality.

Their machines include but are not limited to large 5 and 6 axis machines with milling and turning capacities such as their Tablemill, Rotamill22, Multimill 1000/1600, Columnmill and Cyport.

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New Products

Quick-Change CNC Pallet System

—Micro-Cut

The Microcut USA made pallet changer is a quick and precise, low-cost part changing system which allows you to increase productivity by reducing setup time. Pallets can be changed over in less than 10 seconds, significantly increasing spindle up-time. Improvements to part quality are realized by reducing the potential of operator load/unload errors, helping to also reduce and eliminate scrap.

The Microcut pallet system is comprised of a mountable receiver, with removable pallets. High-quality components deliver ultra-fast part-to-part changeovers with .0002" repeatability, guaranteed. According to the builder,



the low-profile, precision locating system, does not require air, electric or hydraulics making it a versatile addition to any vertical CNC machine, grinder, or laser marking system. The combination of hard-anodized aluminum components and hardened & ground tool steel ensures excellent rigidity and tough wear resistance for long life. The proven Swiss design ensures precise positioning, ease of use, and years of trouble-free operation.

Flexible, low-cost, simple to make pallets can be configured in a mul-

titude of ways, providing a fast and easy method of changing parts when machining. While one pallet is in the machine running, a second identical pallet can be loaded/unloaded. Once removed from the machine, pallets can also be used for quality checks, secondary operations and part verification. A second Microcut receiver unit can be mounted on the CMM allowing both manufacturing and quality to have an efficient, repeatable means of part location and handling.

Microcut pallets are in-stock. Pallets range in size from 9"x13"x1" to 13"x13"x1.5" and made from 6061-T6 Extruded Aluminum to ensure easy machinability. The Micro-Cut starter kit includes a receiver and your choice of (2) blank pallets, plus free shipping in the continental United States.

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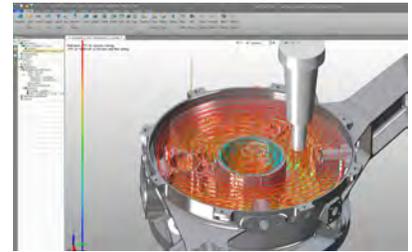
ZW3D (formerly VX software) has upgraded the product development features of its ZW3D 2017 CAD/CAM software. Included are improved data exchange translator and modeling interactions, new mold functions, and enhanced five-axis milling controls.

With its upgraded data exchange translator, ZW3D 2017 supports mainstream file formats generated by up-to-date CAD solutions like Catia V5/6R2016, NX11, Creo 3.0, SolidWorks 2017, SolidEdge ST9 and Inventor 2017. It enables engineers to maximize data reuse utility and access the latest 3D data.

Modeling interactions are now

more user-friendly. Users can display independent objects easily with the new Show Only option which saves much time in finding, showing or hiding objects or components. Variables can be locked or hidden, making it more convenient to drag and drop to reorder them.

Offering greater flexibility for mold makers are two new advancements: Inch DME mold bases and general standard parts. With improved general features in Library, users can measure distance on the form, retain the last parameters, and reuse them in the next operation. The ZW3D 2017 CAM module has added two 5-axis controls to Z level and offset 3D operation, including 5-Axis point control and 3-Axis to 5-Axis undercut. Users can now mill the back-off shape more efficiency and extend the 5-axis milling



capability.

ZW3D (formerly VX Software) is cost-effective CAD/CAM software for 3D modeling, mold design, and machining, taking engineers from concept to finished product in one easy-to-use, single collaborative environment. ZWSOFT (ZW3D Parent Company) recently celebrated its 30th anniversary, has over 550,000 clients in 80 countries. They have three R&D centers including one in Melbourne, Florida.

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Mycenter-800G HMC Offers Enhanced Productivity

—Kitamura

Kitamura Machinery, introduces the Mycenter-HX800G horizontal machining center, delivering the precision, accuracy and repeatability required to produce close tolerance parts from the toughest of materials. Consistent accuracies of 0.000079" / Full Stroke and 0.000039" repeatability are guaranteed.

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Solid box ways and high grade Meehanite cast construction provide superior vibration absorption capabilities for improved surface quality.

Extended travels of (X) 61.0", (Y) 51.2", (Z) 55.1" showcase Kitamura's patented twin ballscrew and servo motor technology on all axes, delivering blazing 2,362 ipm rapid rates on solid box ways. It has a work envelope of Ø60.0" x 61.0" high.

Operators will love the large, easy to access work envelope with a max. and one piece, easy grip sliding doors, large windows and door openings along with easy spindle access.

The Mycenter-HX800G comes standard with a 54HP, 12,000rpm 4-step geared, dual contact spindle

delivering 432.1ft/lbs. of max. torque for large drill/tap applications as well as those applications that require heavy material removal, combined with high rpm for fine finish capabilities - in a single set-up. An optional 8,000rpm high torque spindle is an available option with output max torque of 904.2ft/lbs. The dual contact design offers numerous benefits.

The Mycenter-HX800G comes standard with full 360° 4th axis simultaneous machining capabilities needed to machine complex, multi-sided parts, greatly reducing set-up time. In addition, Kitamura's 2-station automatic pallet changer allows for the loading of parts while machining – dramatically improving spindle cutting time while




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EPA Now Supports the Power of 94K Pumps —EDM Performance Accessories

EDM Performance Accessories, or EPA, has been a mainstay in the machine tools industry for EDM Consumables for over 25 years. EPA is one of the largest stocking distributors in North America for waterjet parts and supplies. They carry a full line of products designed and made in the USA. They recently improved their already solid product line by entering a new partnership with H2O Jet. They now



offer H2O Jet's full line of waterjet products, including the pumps and the parts for the 60K and the 94K pump.

They wanted to give their customers the best possible options with Accustream (a division of Hypertherm) product line and now with the H2O Jet product line



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New Products

MachiningCloud Connection Available—Mastercam

Mastercam and MachiningCloud jointly announce that with the release of Mastercam 2018, Mastercam is now connected to MachiningCloud, thereby providing Mastercam users access to the cutting tool knowledge and product data available within the MachiningCloud.

This partnership provides Mastercam users access to MachiningCloud's cutting tool product data from within Mastercam. Customers now have direct access to complete and up-to-date cutting tool product data, from the leading cutting tool manufacturers available on the MachiningCloud.

With the completed Mastercam MachiningCloud connection, users

can search for tools from multiple manufacturers quickly in one place and can access manufacturer's expert cutting tool recommendations. You can now quickly filter a universe of possibilities down to an optimum solution for a given workpiece. Users can now import the selected product data into Mastercam for programming

And utilize the 3D models for simulation and 2D drawings for documentation

"The mission of MachiningCloud is to bridge the gap between physical cutting tools and digital shop software, and streamlining the programming process to save time and increase accuracy," says Christophe Rogazy, director of product management for MachiningCloud.

"By bringing together valuable

cutting tool data and knowledge in one application, this simplifies the cutting tool search process and gives users many more options and helps them make better tooling decisions. By joining forces on MachiningCloud, Mastercam ensures greater and more seamless flow of information throughout its customers' shops."

Introducing High Speed Mobile Press Brake Xpert 80

—Bystronic

Continuing the concept of the mobile press brake, which the smaller version Xpert 40 has already established on the market, the Xpert 80 offers a decisive increase in bending length and



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New Products



press capacity which opens up a wide spectrum of applications.

Over a bending length of approximately five feet, the Xpert 80 generates a press capacity of 88 US tons and all of this with a footprint of less than 10 square feet.

The new Xpert 80 provides users with support for flexible job shop pro-

duction with fluctuating batch sizes and varying bent parts as well as for series production with recurring parts. Today, for example, the machine can be set up next to a laser cutting system and tomorrow, maybe, in a row with other press brakes in order to process a large bending series.

Moreover, the machine achieves fast bending speeds up to 1 inch per second. Bystronic reports this enables users to bend three times as many parts with the compact machine compared to a slower large press brake. The ByMotion drive control, a Bystronic development, ensures that the Xpert 80's upper beam and back gauges are accelerated with high precision.

ModelMaker H120 Hand-held Scanner

—Nikon

With a Field-of-View width up to 120 mm and a point resolution of up to 35 μm , the ModelMaker H120 is a perfect fit for users requiring fast data collection over a large area.

An extremely fast frame rate of over 450Hz is available even when measuring difficult materials. The ModelMaker H120's speed is completely independent of its ability to capture high quality data on the most challenging parts. With 2,000 points per scan line and no reliance on point-to-point interpolation Nikon reports it is possible to measure very small details on large surfaces even when cycle time is critical.



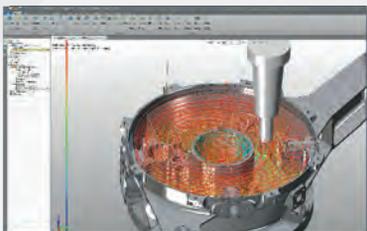
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New Products



To complement such high productivity, the ModelMaker H120 uses advanced Nikon optics and a blue, low speckle, laser to give very high accuracy and low noise data. This means it is now possible to clearly identify very small scratches and abrasions on a surface. Nikon reports as well as the shape of the surface, sharp edges are represented like never before. It has a scanner accuracy of $7\ \mu\text{m}$ (1 sigma) and

combined system accuracy with the MCAX arms of up to $28\ \mu\text{m}$ (2 sigma).

The 4th generation of Enhanced Sensor Performance (ESP4) dynamically adapts the laser parameters not just for every scan line, but for every point in each scan line – enabling parts with significant colour changes or reflectivity to be measured from any angle.

Simply connect to the PC using a USB cable, power on and start scanning within a few seconds. Real-time feedback is provided by display of the boundaries of the measurement area on the measured part which ensures the user is always scanning at the optimal position. An integrated locking mechanism provides a simple, user-friendly and repeatable connection to the MCAX arm. This allows the scanner to be used on MCAX arms of different

sizes and specifications.

By combining the ModelMaker H120 scanner with the high performance MCAX arm, the combination of non-contact scanning and contact probe measurement allows users freedom to measure almost anything. This includes freeform and geometric parts, hard-to-reach features, highly textured or transparent materials and even materials which deform easily.

With handheld laser scanning, users can rapidly and easily understand the dimensional quality of their company's products both inside the metrology lab or on the shop floor.

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New Products



Doosan Unveils New NHP High Productivity Horizontal Machining Centers

Doosan Machine Tools introduces the new NHP horizontal machining center series, built from the ground up for rapid metal removal rates. The

400mm pallet NHP 4000 and 500mm pallet NHP 5000 are feature-rich yet configurable for a range of applications.

The NHP machines come standard with a 15,000rpm spindle with 40 horsepower and 169 ft-lbs of torque. For heavy cutting, a high-torque 15,000rpm spindle with 223 ft-lbs is available, and a 20,000rpm spindle is in development for customers with higher speed precision applications.

Up to 1G acceleration/deceleration on X, Y and Z-axes significantly enhances productivity, and delivering what Doosan reports are productivity increases as high as 25% over the previous model. Ball screw shaft and bearing cooling systems keep the tem-

perature of fast moving axes stable.

The new random access disc-type tool magazine allows high-speed 0.9 second tool-to-tool and 2.3 second chip-to-chip times. In addition to minimizing non-cutting time, it reduces vibration.

In optimizing the construction of the machine, the footprint of the NHP has been reduced by 15% compared to the previous model, yet the machining area has been expanded by 24%. The three-point leveling design makes machine installation and maintenance much more convenient. The center-through bed chip management evacuates large volumes of chips quickly.

The pallets can accommodate loads of up to 880 lbs, for the NHP 4000 and

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New Products

up to 1100 lbs for the NHP 5000, and both through-pallet and overhead hydraulic fixturing options are available. Additionally, the APC has been refined to achieve a 27% faster indexing time.

Mastercam Integrates CoroPlus® ToolLibrary —CNC Software

CNC Software, Inc., developers of Mastercam, in partnership with Sandvik Coromant, announces the integration of Sandvik Coromant CoroPlus ToolLibrary into the new release of Mastercam 2018. The integration of the CoroPlus ToolLibrary allows Mastercam customers to save significant time searching for desired tools and building 3D tool assemblies that can be brought directly into Mastercam via the ISO

13399 data format.

Mastercam developers worked closely with Sandvik Coromant product management to let users import 3D tool assemblies directly into Mastercam's toolpath operations. Users of Mastercam benefit from having the correct tooling for the material and for the type of machining operation, plus an accurate, 3D model that can be used for visualization and collision checking in addition to the time savings.

"In the past, customers had to search through thousands of catalog pages and cross-reference multiple sources to create the tool assemblies needed to machine their parts," says Dave Boucher, director of product for CNC Software. "Now, they can save significant time and effort by quickly searching and building 3D, virtual tool assemblies using the CoroPlus Tool-

Library interface, and import them directly into Mastercam when they program their parts.."

New PCBN Grades for Hard Turning —Seco

Seco Tools has expanded its family of PCBN insert grades to cover the entire spectrum of hard part turning applications. Using a new bimodal substrate and nanolaminate coating process, the company reports these new inserts extend tool life and increase productivity in a broader range of applications.

Seco's PCBN grade chain for materials ranging from ISO H05 to H35 consists of CH0550, CBN060K, CH2540 and CH3515 and is designed

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specifically for turning hardened steels. They incorporate advanced coatings and a bimodal substrate with coarser grain materials, along with optimized cutting edge profiles.

Seco reports that CH0550 provides prolonged wear resistance in high-speed continuous cut H05 operations. CBN060K excels in continuous to slight interrupted cuts in H15 applications.

CH2540 offers performance in continuous and moderate interrupted cuts in the H25 area. CH3515 exhibits toughness handling heavy interruptions in H35 operations.

T-Bed Horizontal Bed Boring Mill with Contouring Heads —Giddings & Lewis

The Giddings & Lewis T-bed horizontal boring mill, introduced last year at IMTS 2016, is now available with a range of contouring heads and programmable boring bars also known as feedout tools. Feedout tools add an extra level of machining versatility to live spindle horizontal boring mills. Providing a programmable axis capable of turning and complex machining operations, contouring heads and programmable boring bars the number tools and setups required.

Because they are a programmable axis, feedout tools are able to machine part features of varying sizes with a single tool. The live spindle Z-axis

motion moves the attachment cross slide providing radial feed to the tool. Bores, tapers, grooves, chamfers, phonographic finishes and recesses of differing sizes are just some of the operations possible with a single tool.

Giddings & Lewis T-bed boring mills are available with contouring heads able to produce bores from 0 to 49.2" in diameter. The cutting range of the programmable boring bars is 5.9 to 22.8" depending on the bar size.

The U.S.-built Giddings & Lewis T-bed boring mill, with rigid cast iron construction and extreme accuracy, was engineered for flat-floor installation, small footprint and low ceiling clearance. The boring mill is configured with a 22,000 lb, 49.2 x 55.1" contouring rotary table. The 5.1 or 6.1" gear-driven spindles are available with drives up to 60 hp and 2493 ft lb of torque.

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New Products

Addition of Micro Engraving Tools —Big Kaiser

Big Kaiser has introduced a series of new micro engraving cutters developed and built by its partner Sphinx. The solid carbide engraving cutters' sharp, positive cutting geometry promotes burr-free surface finishes and smooth transitions.

The engravers come standard with a O3 mm shank and are available in a variety of angles (30°/40°/50°/60°/90°) and in two possible point geometries—flat or radius tipped. The radius cutters range from .0016" - .0039" and the flats range from .0008" - .0059".

The micro engraver is appropriate for work in most materials ranging from alloyed and unalloyed steels

to thermosetting plastics and even titanium.

Small Diameter Cutting Tool with Precision Indexing —ISCAR

ISCAR, due to the increased popularity of Swiss style machine tools, has developed a new line of PICCO holders for growing demands of accuracy and flexibility in clamping orientation. "The new PiccoAce system is designed for quick and easy clamping with modularity benefit of thousands of possible combinations between holders and bars," said a company spokesperson.

The three-point contact offers ac-

curacy and repeatability of the center height. The non-collet system is designed for accuracy with a repeatability of 5μ.

New Tool Magazine with Space for 70 Grinding Wheels —Haas Multigrind

All Haas Multigrind grinding centers are available with an automatic wheel changer. This feature enables Haas customers to combine multiple, high-precision, complex grinding and milling operations into a single part clamping and single machine cycle. According to Haas Multigrind, users can realize significant improvements

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New Products

in overall part quality and significant reductions in overall throughput time and cost.

Now Haas customers can take another leap in productivity with the new high-capacity “shelf magazine.” On the Multigrind® CB grinding machine, the new Haas shelf magazine (2,000 × 2,400 × 3,200 mm, L × W × H) offers

space for 65 grinding wheels of up to 300 mm diameter. On the Multigrind® CA grinding machine, the shelf magazine can be equipped with up to 70 grinding wheels of up to 250 mm diameter. The magazine can also hold up to 20 coolant nozzles.

The new high capacity magazine enables customers to add more op-

erations on a single part and to reduce change-over time between different parts by loading wheels and tools for multiple part numbers in the magazine.

The Haas Horizon programming system maintains locations, dimensions and life information of all wheels and tools in the magazine in addition to programming the machine’s grinding and automation functions.

The company reports that even with much more wheel capacity, tool change time on the new shelf magazine is only 10 seconds.

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TJR AR-5C Collet Rotary Table—CNC Indexing & Feeding

The TJR AR-5C Pneumatic Collet Rotary Table provides an alternative to 3- or 4-jaw chucks for users whose workpieces require 5C collets.

The AR-5C rotary table employs a 5C collet closer system and can be integrated into a CNC machine control as a full 4th axis or operated as an indexer via TJR’s Single Axis Controller (SAC). The table features



a powerful pneumatic braking system and is available in right-handed and left-handed motor mount configurations. A radial-axial preloaded bearing system provides high rigidity, and a dual-lead worm shaft and worm gear ensure long-term indexing accuracy in both directions.

Table diameter is 4.92”, with a thru-hole diameter of 1.37”. Minimum indexing increment is 0.001° and maxi-

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New Products

mum table rotation speed is 83.3 rpm. Peak allowable workpiece load is 220 lb. The table weighs 75 lb and servo motor models are available for Fanuc or Mitsubishi tapers.

Steve Smith, president of CNC Indexing & Feeding Technologies, said, "The TJR AR-5C pneumatic collet rotary table provides a rigid, accurate way for users to grip and index products suited for 5C collets."

New Grinder is Equipped with the Intelligent OSP-P300G Control —Okuma

Okuma's new GA26W high speed, compact grinder is now equipped with the intelligent OSP-P300G CNC control. Okuma's open architecture OSP-P control runs on a Windows®-based platform and fully integrates the machine, motors, drives and encoders, allowing for enhanced machine performance and true customization to suit particular machining needs. The Easy Operation control and touch screen increase efficiency by letting users easily and quickly toggle between machine operations, programming and wheel preparation screens.



The innovative wheelhead traverse structure gives this CNC grinder a solid, compact footprint that saves valuable floor space while the user-friendly design allows various workpieces to be loaded effortlessly for easy automation in high production environments. The extremely rigid foundation paired with Okuma's hydrodynamic wheel spindle

allows for heavy-duty grinding.

The GA26W is equipped with standard chatter control function that automatically adjusts wheel speed for accurate, stable machining. The powerful 7.5kW (15kW-optional) grinding wheel spindle is ideal for grinding mass produced parts with precision.

Key features and benefits of the

GA26W include an easy operation OSP-P300G control, IGAP+ conversational programming, a large 24" grinding wheel and a tailstock quill stroke of 50 mm. Also included is a 10 hp wheel spindle motor and high feed rates X-axis $\phi 30$ m/min; Z-axis: 20 m/min. the grinder offers superior rigidity for powerful grinding and a variety of loader patterns for easy automation.



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...Hotline Continued From Page 8

Orbital ATK Opens New Office in Gilbert, AZ

Advanced aerospace manufacturer and long-time Gilbert, AZ employer Orbital ATK officially pulled back the curtain on its new satellite engineering building on June 28.

The 60,000-square-foot facility is located on the site of Orbital's existing satellite manufacturing plant and will provide a basis for the company's employment growth plans moving forward.

The expansion is part of a five-year plan that will see Orbital ATK hire 155 additional workers, mostly engineering scientists, through 2020, said Rick Kettner, Orbital ATK Gilbert site manager.

The company chose to expand in Gilbert due, in part, to its longstanding business relationship with the town. The company's Gilbert manufacturing facility came out of the ground in 2001 and has played a large role in Gilbert's economic development since that time.

The new facility also solves some logistical problems for the company by allowing for easy collaboration between engineering and manufacturing teams.

Currently, the company has several programs in production at the Gilbert manufacturing facility for public and private entities.

It is under contract with Thales Alenia Space to assemble, integrate and test 81 spacecraft for the Iridium NEXT program.

It is also working on the Ionospheric Connection Explorer satellite for University of California Berkeley/Space Sciences Laboratory and ICESat-2 ice topography measurement program managed by NASA's Goddard Space Flight Program Center.

Additionally, the facility is going to begin production on Landsat9 and JPSS-2, which will contribute to programs run by NASA, United States Geological Survey and National Oceanic and Atmospheric Administration.

New Oregon R&D Hub

Some of the biggest names in Northwest manufacturing have joined up with three higher education powerhouses on a new research and development collaboration taking shape in Scappoose Oregon.

The Oregon Manufacturing Innovation Center, a collaborative aimed at uniting industry, higher ed and government to boost the

state's manufacturing sector, announced the seven companies that have signed on to the effort. They include the Boeing Company, Daimler Trucks North America, Vigor Industrial, ATI, Blount International, Hangsterfer's Laboratories Inc. and Silver Eagle Manufacturing.

The industry partners will work with the Oregon Institute of Technology, Oregon State University and Portland State University on the effort, which will, according to a release, focus on developing "advanced metals manufacturing technologies that are expected to increase commercial productivity and augment state and regional capabilities for industry growth and innovation."

According to the release, OMIC R&D "will be a state-of-the-art facility comprised of talented engineers and technologists as well as university faculty, and undergraduate and graduate students." The center will coordinate research and development projects and offer hands-on training through Portland Community College at a facility that PCC is building in Scappoose and that is expected to open in fall 2019.

ViaSat Awarded \$88.3 Million Military Contract

ViaSat Inc. reported on June 26 that it received an \$88.3 million contract to provide radios to the U.S. Navy and the U.S. Air Force, adding that it is tripling its production capabilities for so-called MIDS JTRS terminals.

Specifically, the Navy awarded contracts for ViaSat to provide Lot 5 and Lot 5a of the MIDS JTRS terminals. The abbreviations stand for Multifunctional Information Distribution System Joint Tactical Radio System. The MIDS JTRS terminal is a four-channel, software-defined radio.

Work will be performed in Carlsbad as well as in Tempe, Ariz., and is expected to be completed by June 2019.

Continued on page 114.....

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DCX SERIES 5-AXIS DOUBLE COLUMN



- » DCX32-5Si

...Hotline Continued From Page 112

Woman-Owned Colorado Company Gets \$93M Air Force Contract

A Colorado defense contractor has received the largest contract in its 17-year history.

Boecore, a Colorado Springs company founded by its CEO Kathy Boe, was recently awarded a Shared Early Warning System (SEWS II) Engineering and Contractor Logistics Support (SEWS II) contract from the Department of Air Force, Air Force Materiel Command (AFMC), Air Force Life Cycle Management. SEWS "provides critical near-real-time early warning information of ballistic missile launches," the company said.

"Work will be performed at Peterson Air Force Base, Colorado, and is expected to be complete by June 30, 2022," the government said in a statement.

Boecore said it's grown by 60 people in 2017 and expects to hire another 50 by the end of the year to support the SEWS II contract and several other programs.

New Mexico Manufacturing Company Expanding

Milan-based Mt. Taylor Manufacturing will invest over \$1 million to expand their operations in the South Valley, New Mexico economic development officials announced in July.

The expansion will create five new manufacturing jobs in addition to preserving 43 existing jobs in Milan, according to the New Mexico Economic Development Department.

Swiss Screws, Nuts & Bolts Manufacturer lands in Phoenix

Bossard Group – an international company that makes screws, nuts, fasteners and bolts – has taken new real estate space in Phoenix.

Bossard is based in Zug, Switzerland. It has leased 40,500 square feet of office and industrial space at the Desert Gateway development.

That's at Pinnacle Peak Road and 19th Avenue in north Phoenix.

Daum Commercial Real Estate Services' Chris Rogers, Trevor McKendry and Carl Johnson represented Desert Gateway's developer Griffin Opportunities.

Bossard Group was represented by Tom Louer, Stein Koss and Nick Nudo of Lee & Associates.

The Swiss company recently acquired Aero-Space Southwest, a distributor of fasteners and electronic components. Both companies will occupy the space.

Desert Gateway opened in November 2016 and is now 50 percent leased, according to Daum brokers.

Daum is based in Los Angeles but has a Phoenix office.

Faraday Future Inks Deal in Hanford, CA.

Torrance-based electric car maker Faraday Future has inked a deal on a 1 million-square-foot manufacturing facility in the Central Valley, the company announced in August.

The news comes a month after Faraday Future scrapped its plans for a \$1 billion Nevada manufacturing plant. The new manufacturing location is in Hanford, about 200 miles north of Los Angeles, near Fresno.

The company plans to ramp up its activity at the factory in early 2018 after the current tenants move out in late November. It said it's striving to deliver its first production vehicle, the FF 91, by the end of next year. The facility will employ about 1,300 people once it's up and running, the company said.

"Our new production facility is the latest demonstration of our commitment to getting FF 91 on the road by the end of 2018," Dag Reckhorn, Faraday Future's vice president of global manufacturing, said in a statement. "Despite significant headwinds on the path ahead of us, we are laser-focused on that one key milestone."

The automaker's future looked uncertain after its main backer, Jia Yueting, chief executive of Chinese conglomerate LeEco, stepped down in May amid layoffs and missed payments to suppliers.

The Wall Street Journal reported Faraday had pledged its corporate headquarters as collateral after receiving a \$14 million rescue loan from New York investment firm Innovatus Capital Partners.

The company also has faced a trademark infringement lawsuit over its name.

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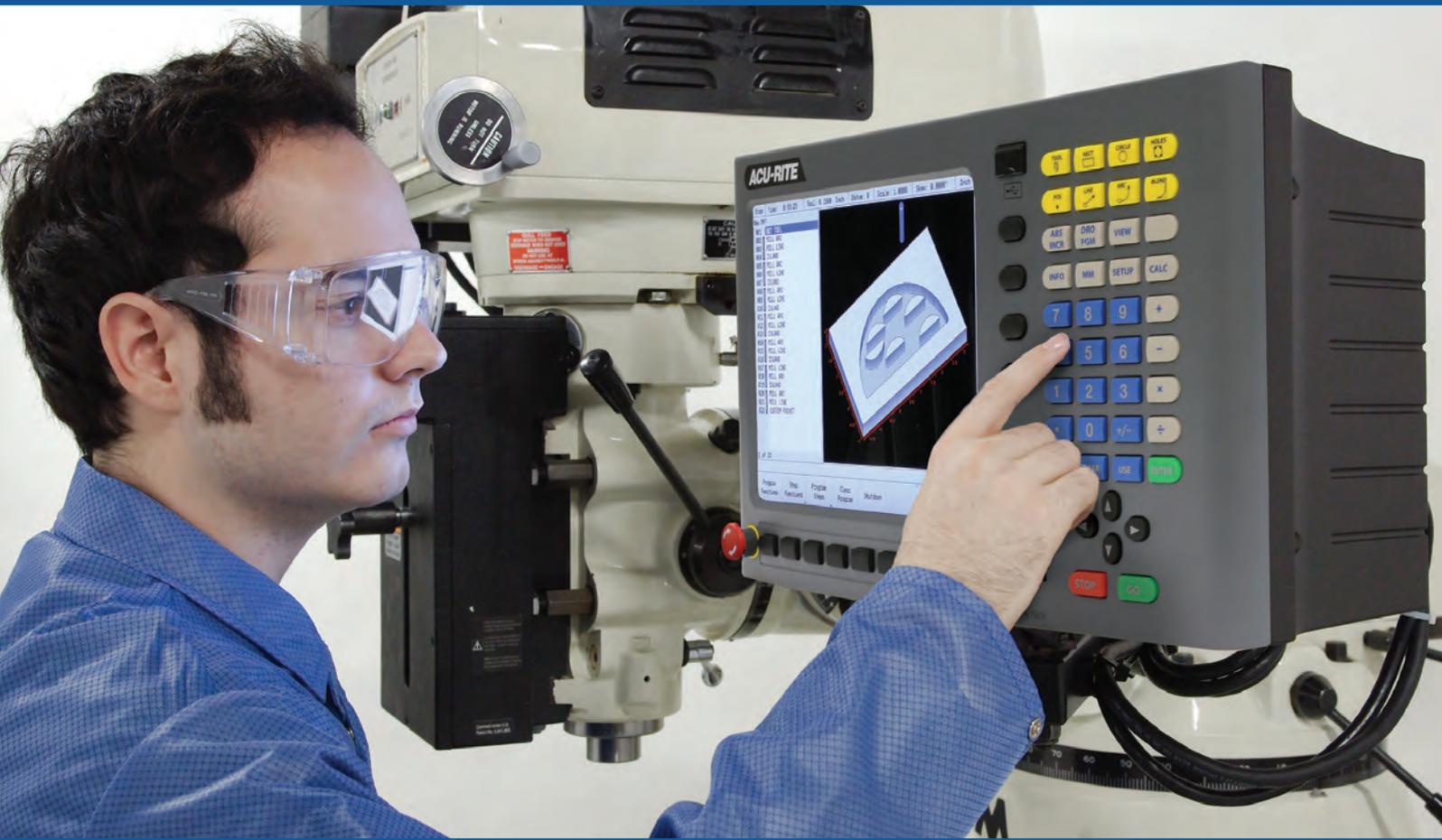


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