



# Cutting NEWS

**EXOTAP® DC & HY-PRO® NRT**  
Proven Technology for the Automotive Industry

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## Editorial

# 38 Years of Developments

David Whitmire, District Manager



As a small boy growing up in a rural farming community in southern Oklahoma, farming was all I knew. Upon graduating high school my dad offered me a new car or truck if I would help him

*“After finishing this course in 1971, it opened the door for a 38-year career for me.”*

on the farm for two years after graduation. I agreed to the offer because again, farming was all I knew. My dad approached me two years later after I fulfilled my obligation.

This time he offered me partnership in the family farm, or I could explore the world. After contemplating for a couple of weeks, I thought the best thing for me to do was to continue to do what I knew (farming), but also pursue a career in addition to it.

I found an ad in the newspaper posted by a technical development group looking for applicants to attend a 6-month “Production Machining Course” at the local university. They were paying the participants to learn the machining trade, and guaranteed a job upon course completion. After finishing this course in 1971, it opened the door for a 38-year career for me.

Over the past 38 years I have seen many developments in

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machinery, some of which include:

- Manual mills and lathes: Required cranking handles
- Tracer/Cam's and Automatics: Early form of automation helped increase productivity
- Numerical Controlled (NC): Ran on punched tapes to control the machine (first machine surfaced in early to mid 1950s).
- Computer Numerical Controlled (CNC): Integration of computers to control the machine (first machine surfaced in late 1950s and early 1960s).

At the inception of each machine type spindle speeds and cutting feeds were increasing at an unbelievable rate. All of these developments reduced cutting times and increased productivity, which lowered the cost of manufacturing.



During this same time frame cutting tools were improving as well. I remember all the major indexable carbide companies only offered two grades of carbide.

*“Anyone that has been in this industry any length of time has to know technology is changing every day.”*

One of which was used on cast iron and the other grade for all other materials. When the industry started introducing exotic materials for manufacturing, many more grades were developed. Round tool manufactures have progressed as well to utilize the full potential of modern machines. Improved geometries, material substrates and coatings have increased tool life and enabled these tools to run at unbelievable speeds and feeds.

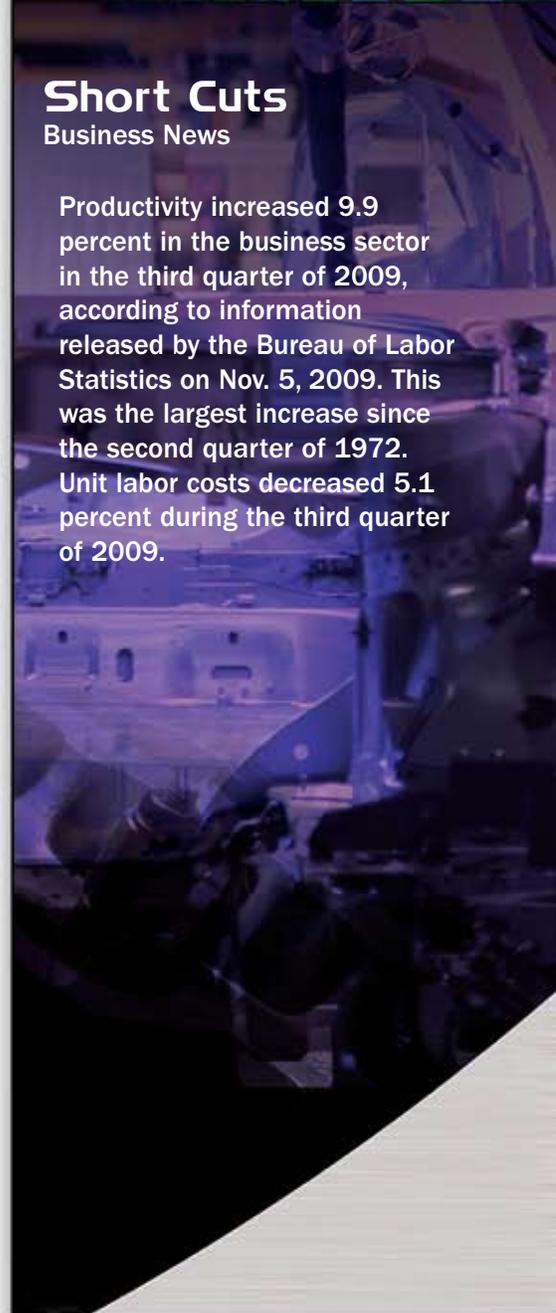
Anyone that has been in this industry any length of time has to know technology is changing every day. This industry has lost a lot of jobs to other countries globally over the past 20 years. The only way we all are going to survive is to take advantage of the newest technology, continue to increase productivity and reduce manufacturing cost.



## Short Cuts

Business News

Productivity increased 9.9 percent in the business sector in the third quarter of 2009, according to information released by the Bureau of Labor Statistics on Nov. 5, 2009. This was the largest increase since the second quarter of 1972. Unit labor costs decreased 5.1 percent during the third quarter of 2009.



**Feature**

## Stay in Business with Process Evaluation

Mike Grzybowski, District Manager

This past year of 2009 has been difficult and challenging for many. All of manufacturing has been affected in one way or another. A big focus in today's business is to reduce manufacturing cost, which may be accomplished by reducing cycle time or increasing tool life. With the current low market demand, keeping productivity at the highest level at minimum cost will help prevent companies from going out of business and employees

from losing their jobs. The first step to reducing manufacturing cost begins with process evaluation.

First, analyze your current operation and evaluate all components involved. More than likely, something is being overlooked and can be adjusted or improved. Start by inspecting the current tool being used. Whether it is a tap, a drill or an end mill, make sure it is programmed and running at the SFM, RPM, and IPR (Inch per Rev)

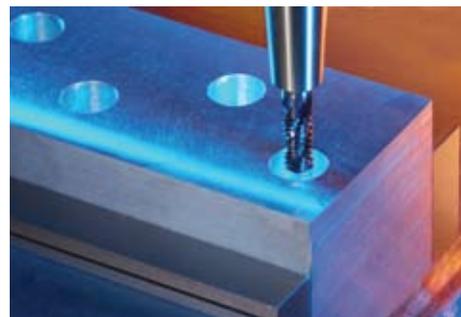
*"A big focus in today's business is to reduce manufacturing cost."*

recommended by the manufacturer for the application and material being machined. IPR is very important and is often overlooked. Many times when problems arise with an application, the immediate reaction is to decrease the feed rate. However, when the IPR is too low, it will prematurely wear the cutting edges by rubbing and not cutting. Cutting tools are designed to take a bite of the material and create a chip to work properly. If

any slowing down needs to occur, decrease the RPM and the feed together to maintain chipload. Doing so will retain the correct IPR for the tool and the correct chipload for the material being machined.

Next, look at the holder of the tool. If the tool holder has runout, it will cause uneven wear on the cutting edges of the tool. One edge will be taking a larger bite than the other. This uneven wear will cause premature tool failure. Now, even if

your tool holder is good, sometimes the collet is not. Collets need to be



replaced once in a while from wear, but especially if you have recently broken a tool. Tool breakage often causes damage to the collet, which can result in tool runout. Replacing the collet will correct such an issue.

If your machine is older, or has gone through thousands of tool changes, you might want to check the taper on your spindle. Dirt, grit or chips may get caught in the spindle during a tool change. This assortment of debris usually ends up in the spindle after the work area has been blown clean with air, without a holder in the spindle, which would otherwise prevent contamination of the spindle socket. The taper inside the spindle is grounded to a tightly held high tolerance that matches the taper on the tool holders. When dirt or chips get in between these two mating surfaces, damage occurs. The high clamping force of the draw bar pulling the holder in place creates gouges and burrs from these contaminates. Ultimately, it will cause the tapers to not seat





properly, resulting in runout and or rigidity issues.

The rigidity of your work piece also plays an important role in tool life. The more rigid and stable the work piece is, the better the tool life. Vibration will occur when a part

of the work piece fails to receive sufficient support while being machined.

This will cause premature tool wear. It is important to also check your coolant. Make sure your coolant concentration is at the coolant manufacturers recommendations.

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The lower the concentration, the less cooling and lubrication properties are present, resulting in lower tool life. The higher the concentration, the more cooling and lubrication properties are present, resulting in better tool life for all of the tools.

The manufacturing process that you have will only be as good as your weakest link. Inspect all of your links. All of the factors in this manufacturing equation need to be evaluated to insure good tool performance. In addition, stay current on the latest technology of cutting tools. Manufacturers are always developing new tooling designs and new coatings to increase SFM and tool life. These advances will not only help reduce cycle times, but will also help machine difficult exotic materials that are becoming more widely used.

Tool designs and coatings are always evolving and probably always will be. To further increase your productivity and overall profit, see what is new out there to help your application.

*“Tool designs and coatings are always evolving and probably always will be.”*

It is very important to stay current on what is available. Just a reminder, you can have the best tool in the world for your application, but the performance of this tool will depend on all of the other factors in your manufacturing equation.



## Short Cuts

Business News

Manufacturing sector productivity grew 13.6 percent, as the output increased 7.7 percent despite a 5.2 percent decrease in hours worked. This was the largest increase in the quarterly productivity series, which begins in 1987. Over the last four quarters, manufacturing productivity increased 3.1 percent as output and hours declined 10.8 percent.

### Production

## From Muscle Cars to E-Cars

Ron Bevels, District Manager



Gas was 18 cents a gallon 40 years ago when I started driving. Yes, you heard me right, 18 cents a gallon!! Those years were the era of the "muscle cars." Equipped with four two barreled carburetors or two four barreled carburetors, engines were bored to the max. Before the days of computers, drivers used to meet at a quarter mile track battling their skills and scrambling to win. They would spend the morning fine tuning, pulling up to the starting point, revving the engine and waiting for the light to change. All the hard work and preparations were dedicated to mere seconds of excitement.

Today, we have moved from "muscle cars" to "e-cars." 2009 has left the automotive industry scrambling. This time it is to see who can win – not on a quarter mile track, but who can qualify for a government bailout; or align themselves financially to appear attractive to be bought by a competitor; or simply be lean enough to survive this economic

*"It is good to know that the auto industry is on the move in attempt to turn this market around!"*

downturn. In an article released by Dow Jones Newswires, written by Jeff Bennett on Nov. 23, 2009, Bennett states, "auto makers and suppliers may face their toughest challenge yet in 2010 amid a 'much longer than expected' recovery in the US and plunging sales in Europe." Bennett goes on to quote from a report given by Fitch Ratings and JP Morgan, reporting that due to economic challenges, jobs and production cuts are likely to continue for at least another six months.

Despite such depressing business forecast, many auto makers are working in effort to boost sales and create jobs for unemployed workers.

Volkswagen is investing \$1 billion on a new manufacturing facility in Chattanooga, Tenn., with plans for creating 2,000 new jobs, according to an article written by Joe Morris in Tennessee

Economic Development. Construction had already begun in May of 2009. Since Tennessee has become an automotive center of the South, this will affect surrounding businesses that have "automotive business" as their

focus, while attaining new projects and maintaining jobs for the coming year.

In addition to Volkswagen, Nissan is also tackling a new project – e-car. Nissan has taken a \$1.6 billion low-cost loan from the US Department of Energy, in order to revamp their plant at Smyrna, Tenn. to make their new electric car "LEAF," according to Daily News & Analysis, reported Nov. 14, 2009. A combination of Nissan LEAF's regenerative braking system and innovative lithium-ion battery packs enables the car to deliver a driving range of more than 100 miles on one full charge, Nissan's press release stated. Production of LEAF will not



begin until late 2012. However, in response to strong initial demand, Nissan North America has announced to take reservations for LEAF in the spring of 2010.

Although we might not see the financial benefits from these projects until 2011, at least the auto industry is on the move in attempt to turn this market around!

Insider

## EXOCARB® -Aero UVX End Mills

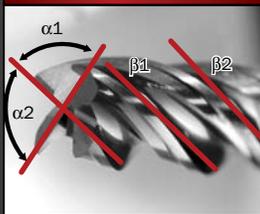
Designed exclusively for exotic aircraft materials

The EXOCARB®-Aero UVX is OSG's latest innovation on variable index and variable helix end mills. UVX's positive edge geometry with variable helix enables consistent and chatter-free milling. Its newly designed flute shape with ultra-smooth finish further improves chip evacuation, thereby improving stability in slotting applications of stainless steel, titanium and Inconel.

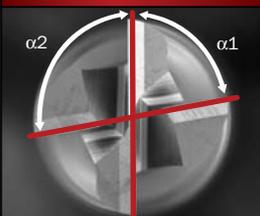
The EXOCARB®-Aero UVX is stocked from 1/8" to 1" diameters, and corner radii from 0.010" to 0.125."

Contact OSG today or visit [www.osgtool.com](http://www.osgtool.com) for a full list of sizes and stock availability.

Variable-lead of peripheral cutting edge



Unequal spacing of end teeth



EXOCARB® -AERO  
UVX



## Short Cuts Green Vehicle



Nissan North American, Inc. announced it will begin taking reservations for its LEAF electric car starting in spring 2010. The Nissan LEAF electric car is powered by laminated compact lithium-ion batteries, which generate power output of over 90kW, while its electric motor delivers 80kW/280Nm, according to Nissan's press release.

## Testimonial

### Engineered to Prevail

Bob Thomas, District Manager



Recently I had a chance to test OSG's HY-PRO® AERO-F tap with one of the largest automotive fastener manufacturers in the United States. This customer manufactures millions of nuts and bolts every year for the automotive and racing industries. As you can imagine, this type of manufacturing brings immense competition for their coveted tooling business. In the case of their tapping needs, one of our competitors dominated the majority of sales with a combination of

good quality "special" tap (800 parts/avg) and a direct price that is extremely competitive, to say the least.

Despite fierce competition, we saw an opportunity for our HY-PRO® AERO-F tap based on similar work materials (8620, A286) and tool sizes. Previous results with the HY-PRO® AERO-F tap have been tremendous.

Knowing the potential of this account, I arranged for some of OSG's senior engineers to visit the facility and help diagnose some inconsistent tool life issues. After reviewing and analyzing some of the taps used, it was determined

that the pitch diameter had fluctuated due to outsourcing of the coating process. We were able to continue using the HY-PRO® AERO-F tap after the stock of these products was inspected and allowed us to find the taps that maintained close tolerance pitch diameter. The early results are positive.

We have been told that OSG will gain this business if we are able to give them consistent averages of 1,000 or more per tap.

A major factor that contributed to gaining this commitment is the value that OSG brought to the customer - prompt engineering solutions followed by savings

*"Despite fierce competition, we saw an opportunity for our HY-PRO® AERO-F tap."*

to their machining needs.

OSG has a remarkable team of engineers. Over the years, I've learned that utilizing such resources and staying persistent are keys to success and happy customers!



**HY-PRO® AERO-F**

E-Club

# The New and Improved OSG e-club Newsletter

Delivered monthly to your inbox, e-club features original content developed by OSG engineers, district managers and staff. Sign-up to keep current on the latest cutting tools, industry insights, and great things that are happening at OSG Tap & Die!

- New releases – new product alerts, stock availability.
- Industry insights – trends in the cutting tool industry.
- Testimonial – success stories and product highlights.
- Company news – insider news about OSG.

Stay on the cutting edge and sign-up today for OSG e-club at [www.osgtool.com/forms.asp?fid=20](http://www.osgtool.com/forms.asp?fid=20)



## Short Cuts Auto News



Volkswagen AG announced to buy a 20 percent stake in Suzuki Motor Corp. for \$2.5

billion this past December, forming one of the world's biggest auto alliances. VW has recently bought an initial 49.9 percent stake in Porsche AG for \$5.9 billion. Auto makers around the globe are joining forces to stay competitive in the midst of a changing industry.

## Testimonial

### Going after the Specials

Dick Thomas, District Manager

Living in Indianapolis and covering the southern half of the state, business consists of planes, trains or automobiles, and the latter constitutes most of it. Whether it is diesel engines, gasoline engine parts, the Big Three or any of the overseas manufacturers, we have it all.

OSG has been a leader in the tap business at most of the engine parts manufacturers and we gain everyday in the sales of other round tools that we make including, drills, end mills, special round tooling, and even in the regrinding of all round tools through our own NAS Precision.

In my latest success, with a lot of help from NAS Precision – OSG's authorized regrinding company and manufacturer of special cutting tools, I was able to get one

of our competitor tools out and our specials in. Our customer's application is a part made for one or more of the Big Three automotive companies, and is made from Powdered Metal, which runs about 52Rc in hardness.

Before, our competitor was selling a special diameter carbide drill that required an additional special reamer to finish the hole to size. NAS Precision is able to manufacture a single carbide drill/reamer that not only finishes to size, but does so three times quicker.

Production time was extremely crucial because the demand of those parts are doubling. The competitor tools failed to allow the customer to achieve their increased production needs. With products

of the highest quality, short lead times and exemplary customer service, NAS Precision is able to offer the precision and productivity our customer desired. It was a nice win for us.

As a District Manager, I know what OSG has to offer in standard items and I take a back seat to no one. But, with our high quality and quick turnaround on special carbide end mills, we can take the time we may have been using on industries that are still down and go after the specials as well.



Insider

### 2008 Cutting Tool Solutions Catalog Corrections

EDP# 17508111 should be listed with:

mm: 5.95  
inch: 0.2344



**NAS**

## NAS Precision, OSG's authorized regrind company



NAS Precision's special tools offer the precision and productivity that other special tool manufacturers cannot duplicate. In addition to being the premier manufacturer of special cutting tools, NAS Precision is also the preeminent regrind shop. Specializing in accurate, expedient regrinds of high-end cutting tools, NAS will save you money by making your used cutting tools like new.

Visit [www.nasprecision.com](http://www.nasprecision.com) and contact NAS today for a quotation.

*"NAS will save you money by making your used cutting tools like new."*



**OSG's Authorized  
Regrind Company**



### Short Cuts

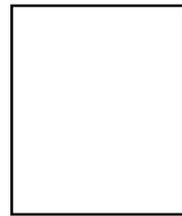
Business News

Based on recent reports by the Bureau of Labor Statistics, manufacturing is more efficient and productive with less labor.

Although recovery might still be far away, manufacturers with quality, experience and sales expertise will survive through the economic turmoil. Believe in America and our future, better days are ahead.



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**ENGINEERED** Peace of Mind

*In the last 5 years, OSG has released 153 new products or 4824 new items.  
Featured Above: New Product #139-140, EXOCARB®-FTO Drills.  
All new redesigned coolant-fed drills feature OSG's brand new  
WD1 nano-coating for ultra-high speed drilling.*

threading » drilling milling