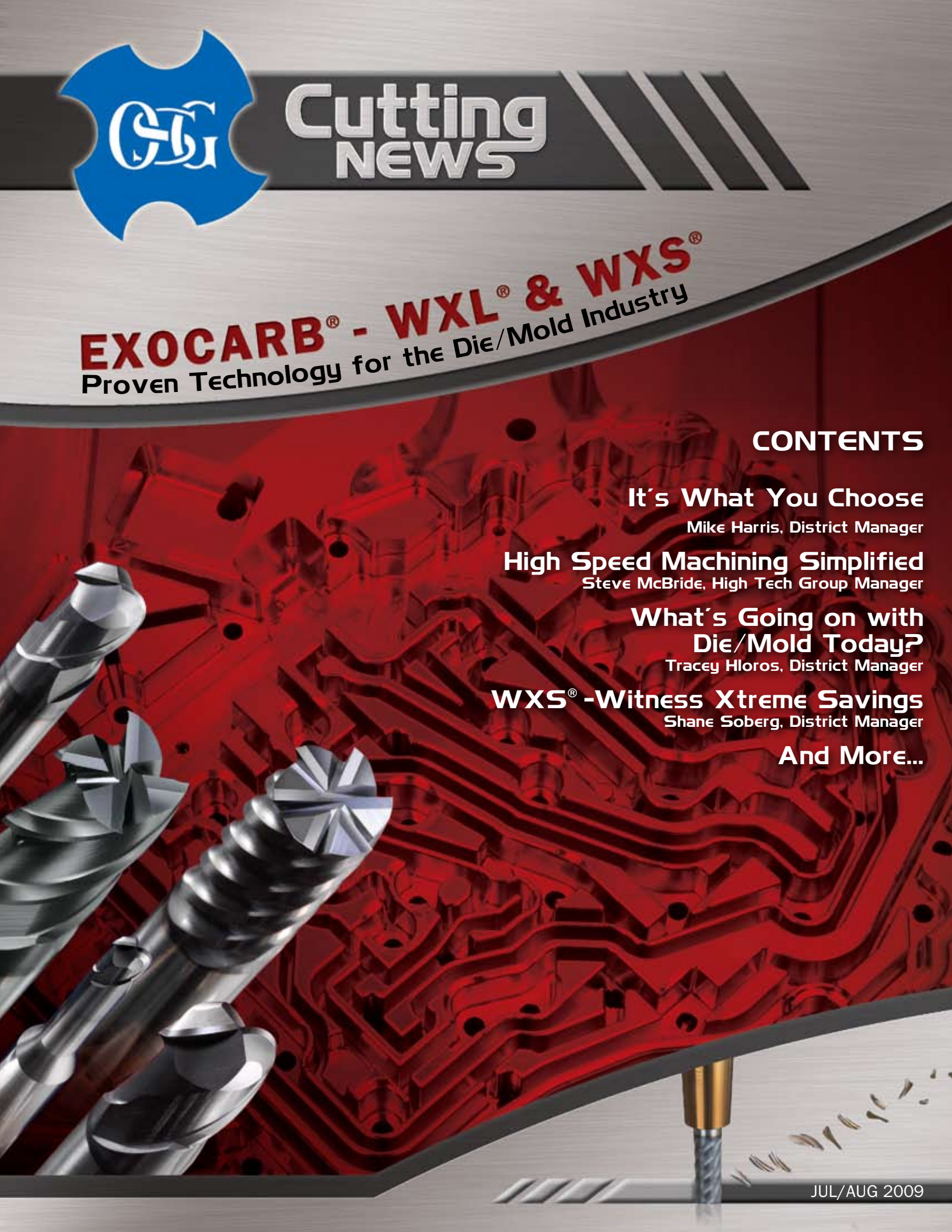
Cutting NEWS

EXOCARB® - WXL® & WXS®
Proven Technology for the Die/Mold Industry



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JUL/AUG 2009

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Editorial

It´s What You Choose

Mike Harris, District Manager

I do not know about you, but I have had enough of the doom and gloom in the past six months to last a life time! Yes, there are some real problems out there that we can choose to focus on and worry about from the time we get up in the morning until we go to bed at night. However, I choose not to! A few years back I made a decision that from then on I was not going to worry about things that I had no control of.

"I reach down deep within myself and I make things work"

Here is the problem: there are always things that we can worry about and struggle with. We struggle because we do not have enough money, and then we struggle with money. We struggle with our love lives, and we struggle without love. We can worry about whether our jobs are going to hold out or not. We can worry about the war. We can worry about our kids and grandkids. We can worry about global warming, and do not forget about the recession. There is absolutely no end to the things that we can worry about or struggle with! Again I choose not to!

As I have gotten older I have come to realize that when times are not the best, when everything looks bleak, and my back is against the wall, these are the times when I reach down deep within myself and I make things work. This is when I seem to have more clarity and I tend to make better choices.

It seems to me that a lot of the things that we struggle

with on a day-to-day basis actually revolve around our choices and our attitude. Author, Charles Swindoll, once wrote about the importance of our attitude and the impact it has on our life, and that each day we have a choice regarding the attitude that we carry with us for that day. He goes on and talks about how we cannot change the past or control how other people will act, or how we cannot change the inevitable. That the only thing each of us can control is how we react to what happens to us.

"In the future I will choose to remember the good news and not dwell on bad news"

Amongst all the doom and gloom that is out there, I am starting to hear bits and pieces of good news; stocks are up a bit, house foreclosures have slowed down, big layoff announcements are not as frequent, my grandson got a great report card, coffee is good for us again, a local company hired 20 new employees, my carbon footprint is getting smaller, and a man catches and saves a baby that fell from a 3rd story window.

If we pay attention there really is a lot of good that goes on around us each day. The good news does not seem to have the impact on us that bad news does. In the future, I will choose to remember the good news and not dwell on the bad news.

Oh So Green Tip: Switch it Off!

This means all things electrical from lights to televisions. In fact, mobile phone chargers are worth mentioning. Most people leave their phone plugged in long after it has fully charged. One statistic we found said that only 5% of energy is used to charge a phone if left on overnight. That is a huge 95% waste of energy!

2008 Cutting Tool Solutions

Catalog Corrections

- **Pg 43 - EDP# 8609032, Flute Length should be 43mm, not 73mm**
- **Pg 701 - List 531, 532, 536, Aluminum Alloys Cutting Speed should be 260-300 SFM, not 260-30 SFM**

Feature

High-Speed Machining Simplified

Steve McBride, High Tech Group Manager

High-Speed Machining (HSM) is usually associated with high-speed spindles (15K to 40K RPM), and higher feed rates. It is also referred to as high velocity machining. They are one in the same, as both represent machining components in the most accurate and shortest cycle times.

"HSM can replace EDM with considerable cost and cycle time reductions"

In the past 10 to 15 years HSM was focused on the die mold industry which uses pre-hardened materials and hardened tool steels like P-20, H-13, S-7 and D-2. These materials range in hardness from 28 - 62 HRC. The traditional method of finish machining hardened materials was Electrical Discharge Machining (EDM).

In applications where HSM can replace the EDM process there will be considerable cost and cycle time reductions.

To be successful with HSM the following components need to be integrated; if one of these is incorrectly applied then your machining application will suffer.

CNC Machine

This is the most significant component for HSM, and should be designed specifically for HSM. The construction of the base, as well as the individual components—drive train, spindle and CNC—must be capable of handling the demands of HSM, especially in the case of hard milling. It is much more than just looking at the maximum spindle speed and feed rates. You must consider the size and mix of work to be machined. Know what you are planning to machine and evaluate accordingly.

Tool Holders

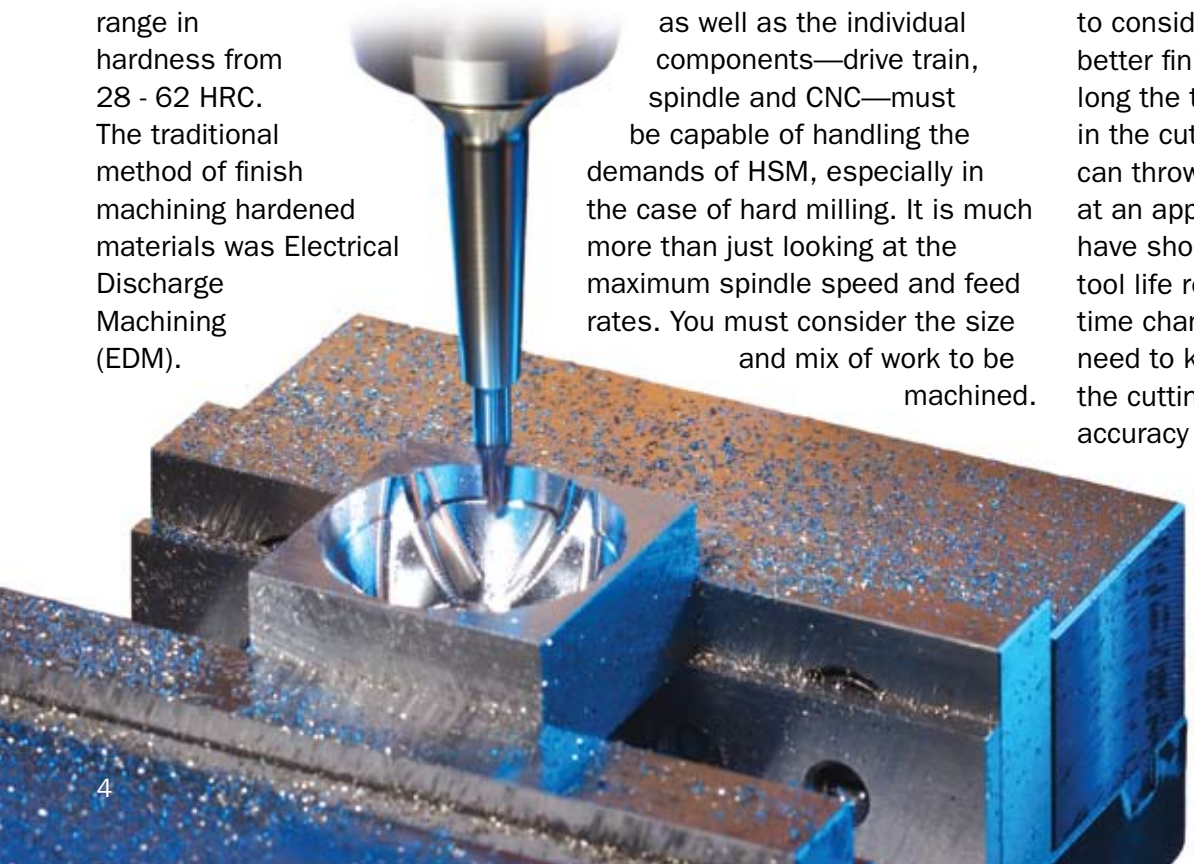
There is no one tool holder type that will satisfy all applications: shrink fit, hydraulic, collet style, etc. They all have specific features that can be applied depending on the application. Balancing is also very important, but not all tools need to be balanced! It depends on what is required of the tool holder.

Cutting Tools

This is one area in which many companies try to cut corners because of the cost associated per piece, but there are more variables to consider – performance and better finishes, along with how long the tool will perform while in the cut. In some cases you can throw commodity-type tools at an application, but you will have shorter and less consistent tool life resulting in more down time changing tools, etc. You need to know what is expected of the cutting tool – surface finish, accuracy and tool life requirements, so you can run lights out, unattended.

CAD/CAM Systems

There are still many CAD/CAM systems that do not have the capabilities to create



tool paths for HSM or hard milling routines easily. To be able to evaluate a system, you must understand what types of routines are required for HSM to attain the best results. Using experts in the field will reduce your learning curve considerably!

Summary

One can experience HSM principles even on older machining centers. These applications will not necessarily be optimal for HSM techniques—due to equipment and tooling limitations—but the fact is, HSM can still be applied and result in better cycle times.

"One can experience HSM principles even on older machining centers"

Speeds and feeds are always difficult when first applying HSM principles. Remember it all boils down to your specific application which includes the machine, control, tool holder and cutting tools used and they all have recommended parameters. One needs to gather all of the variables and then apply them in each specific application.

Insider

Web Promotions

OSG is now running web promotions! These exclusive web deals offer tremendous savings on our top products. The promotions can be found on the front page of the Distributor Access site on *www.osgtool.com*. These promotions will be updated on a regular basis to provide you with the best savings opportunities. So what are you waiting for? Log-on to the Distributor Access site to see what great OSG products you can save on today!

Short Cuts

HSM Principles

Not everyone understands how and when to apply the correct HSM principles. This is not to say that every machining application will benefit from HSM, but many applications could if it were not for misinformation and assumptions. Figure 1 shows some of the components you need to consider when using HSM processes.

Figure 1

- What is HSM?
- Advantages of HSM
- HSM Process
- HSM Machines
- Retrofitting Older Machines
- Spindle RPM
- Spindle Bearings
- Cutting Tool Selection
- Toolholder Selection
- Toolholder Balancing
- Which Industries are Best for HSM?
- Integrating HSM into your Company

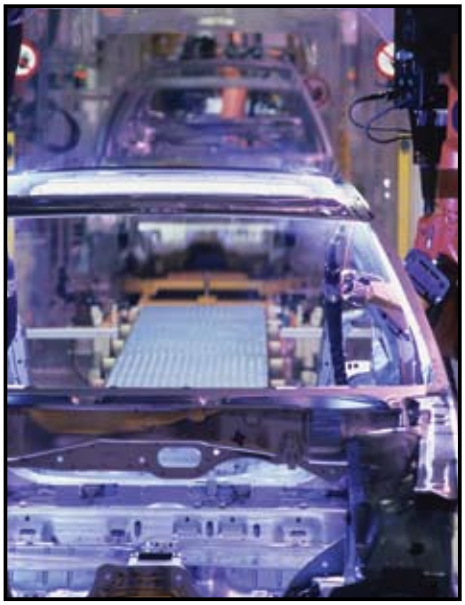
Industry News

What's Going on with Die/Mold Today?

Tracey Hloros, District Manager

The economy is creating havoc on the die/mold industry. It almost seems as if this industry has gone absent from US manufacturing. Did you know that 90% of manufacturing comes from the die/mold industry in some way? Think of all the castings and injection mold parts that our country produces each year. For instance; medical parts, consumer parts, and do not forget about the automotive industry. As a nation, we use these parts on a daily basis.

The automotive and the die/mold industries definitely go hand in hand. Just think of all the parts on a car that are made by injection mold and castings. There are hundreds of these parts on a car! We hear and read every day about "The Big Three" reducing size; however, Chrysler, General Motors, and Ford are still building cars. Moreover, as a nation, we have auto manufacturers such as Honda, Toyota, Hyundai, Volkswagen, Mercedes, and Nissan. As a whole, the auto sector is a humongous player in the die/mold industry. There are about 35,000 jobs in this sector of die/mold manufacturing.



"Overall, the die/mold industry is still very much alive and kicking in the USA!"

Medical manufacturers are also an immense participant in die/mold segment. Just consider all of the parts you see when you go to a hospital. The beds, syringes, tubes, and fittings are all visible parts from die/mold. Now take into account the die/mold parts we do not see; restorable sutures for plastic surgery, facial implants, and cardiovascular catheters. These parts have to have an exceptionally uncontaminated clean production environment to even be considered for installation into our bodies. The best controlled environment for this production is in the USA.

Lastly, consumer parts are the parts we may use in daily life. Some examples from this sector are; bottles, consumer electronics, telecommunications, and home appliances. The list goes on and on. Other consumer products that are booming and made in the USA are the parts that are too big and costly to ship from overseas. Another competitive edge for die/mold shops in the consumer market is the expertise to reduce hand finishing processes. The consumer market of die/mold has the tedious job of constantly updating production processes and facilities to keep lean and mean.

Overall, the die/mold industry is still very much alive and kicking in the USA! Yes, there is global competition. However, I see extremely advanced die/mold shops every week that are ready to take on the global competition. The die/mold manufacturers that I see are always an advanced, knowledgeable crowd that are determined to find the best and fastest way to produce parts. Many manufacturers have tried to lessen their over head by shipping these jobs overseas. But I have personally seen many of these jobs come back to America because of the complications that occur from overseas manufacturers. The key to survival is to keep an open mind and apply the new technology that is presented.

Testimonial

WXS®-Witness Xtreme Savings

Shane Soberg, District Manager

One of my valued customers is located in New Hope, Minnesota. They have more than 40 years experience designing and manufacturing over 5000 highly mechanized molds.

One of my visits to this customer, I met with Gregg, one of the lead programmers and machinists. Gregg was running a very large mold out of P20 material and he was using an OSG competitor's bull nose high feed end mill with TIALN coating. He was only achieving a couple of hours of tool life at 6,000 rpm and 200 ipm. The end mill was very unreliable and needed constant supervision.

I took the opportunity to tell Gregg about OSG's new EXOCARB® WXS® bull nose high feed end mill. The tool has a patented nanotechnology coating (WXS®), developed by OSG, which is designed to machine materials from 52Rc to 70Rc, and oxidizes at 1300 degrees Celsius. TIALN coating, on the other hand, oxidizes at 850-900 degrees Celsius. This means that Gregg could run the new OSG WXS® end mill harder and faster and also get extended tool life.

Gregg purchased one for a test, and at the end of the test he ran the WXS® end mill at 8,000 rpm and 340 ipm and got six hours of tool life! This is four hours more than he got with the competitor's tool. The WXS® also left a smoother finish which meant less time polishing. Gregg was pleased with how reliable the WXS® end mill was. Since he no longer had to constantly supervise the machine, he had more time to get other programming done.

"WXS® is an unbelievable coating which can save you time and money"

OSG's WXS® saved the customer with decreased; cycle time, tooling cost (due to extended tool life), and supervision. WXS® is an unbelievable coating which can save you time and money, so go to **www.osgtool.com** and check out the whole series of WXS® end mills, and ask your local District Manager to test one with you so you too can see the savings!

Short Cuts

Mold Business Forecast

The Mold Business Index (MBI) takes into account many factors; such as, new orders, production, employment, backlog, material prices, and supplier deliveries. Currently the overall MBI is down. However, supplier delivery times are continuing to get faster and material prices, after many years of steady increases, have seen significant declines in the past three quarters.

The Injection Mold Business Index, while down in the first quarter of this year compared to last year, is expected to see growth in the second half of this year. A continuous four to five percent growth, in the output of injection molded products, is needed to show consistent gains in the index.

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EXOCARB®-WXS® End Mills
Proven Technology for the Mold & Die Industry

Contact OSG for more information.