



Cutting NEWS

HY-PRO® WND

Proven Technology for the Wind Power Generation

CONTENTS

A Time to be Thankful
Kyle BeGell, District Manager

Wind Energy News
Jake Van Oost, District Manager

Lots of Options
Chris Presley, District Manager

**Blown Away with
OSG Wind Energy Taps**
Steve Lauman, District Manager

Green Town
Todd Whaley, District Manager

And More...

Editorial

A Time to be Thankful

Kyle BeGell, District Manager

It does not matter where you live or work; the effects of our troubled economy have had an impact on many people and their families. Nowadays it is hard to read the newspaper or watch TV without hearing more depressing news. The recession seems to have become the topic of discussion among friends and colleagues. This can make our daily work activities more difficult as we interact with our customers. I get very frustrated at times because I have no control over what is happening. At the same time, I feel the pressure of trying to achieve goals for my job and to save money for retirement.

Recently, however, as I hear stories about our men and women serving in Iraq and Afghanistan, it strikes me that I have nothing to complain about. Losing your job or house is nothing like losing your life or being severely wounded, yet these soldiers, many of whom are between the ages of 18 and 25, get up every morning to serve their country with no assurance they will survive the day.

This gives me a new perspective - my worst day is probably 10 times better than their best day. So from now on, I will be far more appreciative of what I have - a good job, a roof over my head, hot showers and most importantly, freedom! I feel that I have an obligation to live more responsibly



CONTENTS

A Time to be Thankful . . . 2-3
Kyle BeGell, District Manager

Short Cuts 3, 5, 7, 9 & 11

Wind Energy News 4-5
Jake Van Oost, District Manager

**Power Generation
Industry Taps! 5**

Lots of Options 6-7
Chris Presley, District Manager

**Cutting Tool Solutions
Catalog Corrections 8**

**Blown Away with OSG
Wind Energy Taps 8-9**
Steve Lauman, District Manager

Green Town 10-11
Todd Whaley, District Manager

and positively for all I have because many have paid the ultimate price in exchange for it.

No matter how bad our economy may be or how badly our politicians behave, we still live in the greatest country in the world. Only through perseverance can we get through a sluggish economy. Let us make a commitment to our soldiers to do whatever we can to get our economy and country back on track.

We must also change from being pure consumers to conservers. We cannot

just talk about being “green,” we must act green and reduce our consumption of natural resources. There are thousands of ways to save water, power and fuel. I will bet if each family were to try to reduce their usage for one month they would be surprised by the savings. If we work together in going green, we can create new industries, jobs and hopefully expand our manufacturing base, which drives our economy. For those of us who work in the manufacturing sectors, we must work at educating our customers about new technologies and processes that allow them to compete in a global market. Even when our customers are slow and do not want to talk about tooling

“When business picks up, most companies will have a difficult time keeping pace, so now is the time to do some planning”

expenses, we need to take the time to explain to them how they will need to be more productive when business picks up. The fact is, manufacturing is running at a reduced capacity. When business picks up, most companies will have a difficult time keeping pace, so now is the time to do some planning.

We also need to stay positive and upbeat, not only for our customers, but also for ourselves. The stress we carry with us every day comes home with us and that is

not good for the family. If you are having a bad day, try being extra courteous and helpful to everyone you meet. It can be as simple as holding the door open for someone or making a spot for someone to get in front of you in traffic. You will be surprised at what a smile and a positive gesture will do. The point is to end your day on a positive note and take the time to enjoy life. Always remember that there will be more good days than bad ones.



Short Cuts

The House passed a legislation authorizing \$1 billion over five years to make turbines more efficient and cost effective. The Energy Department would like to provide 20 percent of the nation's electricity by 2030. Currently, it only generates 2 percent.



Feature

Wind Energy News

Jake Van Oost, District Manager



Imagine your electric bill being 30 percent less than what it was the previous month. Or better yet,

you do not have an electric bill at all. This might sound unrealistic, but with all the technology that the United States is putting into the wind energy industry, electric bills may become obsolete someday.

Wind turbines can vary in size. Some are very small and can be put almost anywhere. There are many different models to choose from. Wind energy has become more affordable for small business owners and even for residential

homes. According to the American Wind Energy Association, small wind turbines can cost from \$3,000 to \$6,000, for every

kilowatt of generating capacity. Depending on wind condition, electricity rates and local incentives, many of the wind turbines on the market can make up

for the actual cost in as little as six years. Also, through the Emergency Economic Stabilization Act of 2008, the U.S. Federal Government provides a tax credit incentive for 30 percent of the total installed cost of a small wind turbine system installed by December 31, 2016.

Many industrial companies are changing gears in attempt to tackle the wind industry. Die/mold shops, boat manufactures and automotive job shops have spent millions of dollars

on facility, technology and new machinery in order to capture what could be the hottest industry on the market today. The commercial

wind power industry is expanding at a robust growth rate of 25 percent per year, driven by the readily available large wind resources, according to the World Wind Energy

Association.

The giant windmills that we have seen for years all across the country, have also advanced in the way they create and transfer energy. In attempt to become a greener community, many cities across the globe are looking into this option.

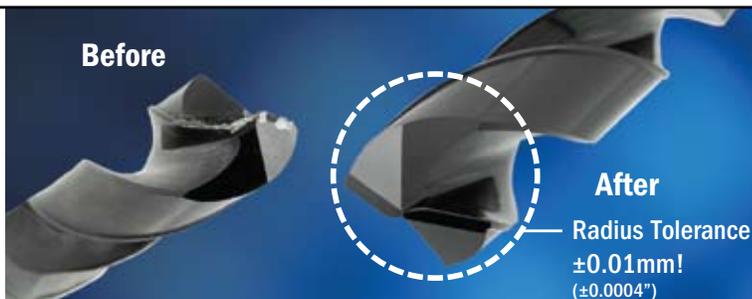
With our ever changing appliances becoming more efficient, our power grid getting smarter every year and our world trying to go green every day, the wind energy industry is only going to become increasingly prominent. In the future, I think we will see many different kinds of windmills in all shapes and sizes, trying to take advantage of what Mother Nature is blowing our way!

“The wind energy industry is only going to become increasingly prominent”

“Many industrial companies are changing gears in attempt to tackle the wind industry”



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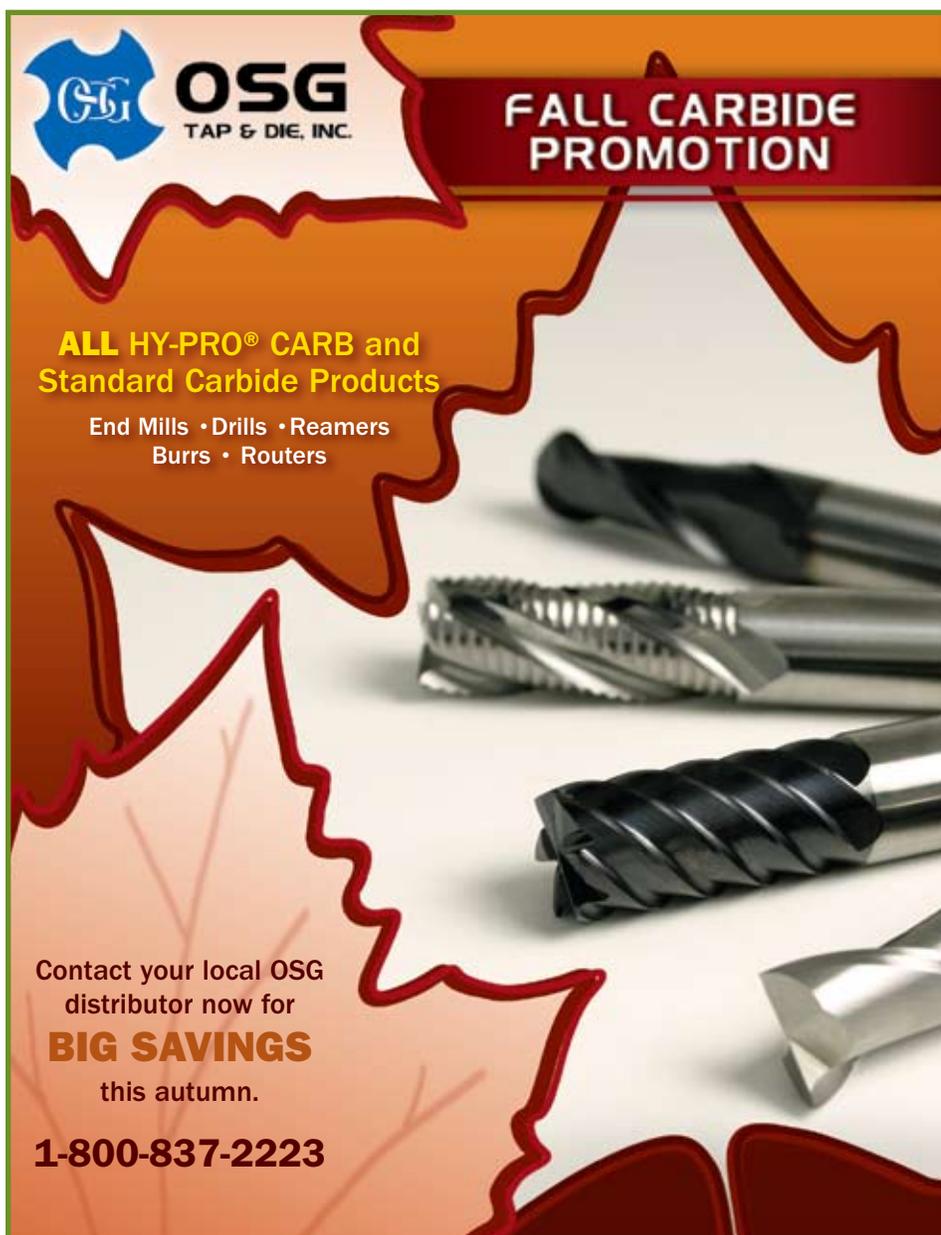


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Short Cuts

One challenge in Wind Energy is to build turbines from materials strong enough to withstand tremendous pressure in heavy winds. The turbines need to be made from the lightest but strongest materials possible, as another challenge is the high cost of transporting the rotary blades and heavy tower components to the wind farms.

In the 1980s, the blades were eleven yards long and produced 45,000 kilowatt-hour of power per year. The new blades are over 100 yards and generate 6 megawatt-hour (6 million kilowatt-hour) per year.

Production

Lots of Options

Chris Presley, District Manager



As our industry advances in technology, more options have become available on CNC machines for reducing cycle time. Decreases in machine time often generate profit. Elements that help decrease cycle time can range from high speed spindles and coolant-through capability to high-pressure coolant and Minimum Quantity Lubricant (MQL). With all of these options, one might ask, which is best for the shop?

High speed spindles have great benefits. They can improve tool life and lighten the load on the spindle. This option however, does have a few drawbacks. High speed spindles typically coincide with less horsepower. The lower horsepower machines will have difficulty tapping, drilling and even milling with larger diameter tools. In addition, once the machine exceeds a certain speed, a balanced holder must be used to ensure longer life for the spindle and to help improve accuracy. High speed is not an option for all shops.

Coolant-through spindles help keep coolant on the cutting edge, reducing heat and build-up. Some machine shops will never use it

while others may use it daily. The standard option offered on most machines, in terms of pressure, usually starts at around 300 psi. It usually depends on the type of parts that are being machined as to what is needed. I have seen jobs that could benefit from the process, but the machine was not equipped with the coolant-through option. The alternative machining process would cause longer cycle time and shorter tool life. Ultimately, it can cause a shop to lose the job or their competitive edge. When talking about coolant-through capability, drills are usually the first thing that come to mind. However, there are several other tools that can be used with this option as well. Indexable milling cutters now offer coolant ports, aimed directly at the insert. Tool holders are designed with passages to more precisely direct coolant at the tip of the tool. Taps are another option that are available with the coolant-through capability, either through the bottom or through the flutes.

“...remember to not only think about today, but tomorrow as well.”

The benefits of high-pressure coolant never seem to be recognized until they are really needed. This is especially true with deep hole drilling. Other areas where it can be used are in deep pocket milling. When drilling 10 to 15 times the diameter, high-pressure coolant will improve chip control and chip evacuation. For applications deeper than 15 times diameter, high pressure is not an option, but a requirement if one hopes to drill without peck cycles.

Smaller diameter drills also benefit from high-pressure coolant. With small holes in the smaller drills, higher pressure with sealed holders is needed for coolant to pass through the tool. The lower pressure coolant option will not be sufficient to push the coolant-through the smaller drills. High-pressure coolant is an option that can really help improve drilling processes and increase productivity.

Let us not forget Minimum Quantity Lubricant (MQL) as an option. MQL is a combination of air with small portions of straight cutting oil added (often vegetable-based). This can be used in drilling applications along with milling. Tapping with MQL will work, but typically will not output the life that coolant can offer. On the other hand, if the majority of work is milling, MQL should be considered. MQL is commonly seen in the mold industry, and is extremely beneficial

when combined with High Speed Machining techniques. MQL adds lubricity without the hindrance of thermal shock, thereby helping end mills last longer.

The four alternative machining options mentioned are not always needed, but when paired with the right applications, can be of tremendous value to any shop. With technology improving rapidly in the past ten years, we are seeing more

of a need for machines to be able to cross over into different industries. This means options not needed on today's job may still serve a critical purpose for future applications. Whether your business is in medical, aerospace, automotive or power, these are options that must be examined very closely. So remember to not only think about today, but tomorrow as well.



Short Cuts

The national leader in wind generation is Texas with 8,300 installed megawatts, and another 1,000 under construction. Iowa is second with 3,043 megawatts, and California is third with 2,787 megawatts.

With total installed U.S. wind power capacity now over 16,800 megawatts, or enough to serve the equivalent of 4.5 million average households, wind is the second largest source of new electrical capacity in the nation, behind only natural gas, for the past three years.

Insider

Power Generation Industry Taps!

OSG Tap and Die, Inc. has introduced cutting edge technology for the Power Generation Industry with the new HY-PRO®-RXL-W taps, and expansion of the HY-PRO®-HXL, and HY-PRO®-VXL lines. The HY-PRO®-RXL-W design is ideal for through-hole applications. The HY-PRO®-RXL-W left hand spiral acts opposite to natural chip progression, thereby forcing the chips forward. The HY-PRO®-HXL and HY-PRO®-VXL lines have expanded to include HY-PRO®-HXL-W, and HY-PRO®-VXL-W entirely new metric offerings.

These new taps effectively control chips to eliminate "bird-nesting," while nearly doubling the tool life versus competitor taps, resulting in a cost-per-hole savings of over 55 percent.

Contact OSG today for more information on our HY-PRO® Taps!



Testimonial

Blown Away with OSG Wind Energy Taps!

Steve Lauman, District Manager

When it comes to taps for wind energy components, I have learned three things: They have to be extremely tough to perform in difficult alloy steels; They must come in a variety of large sizes with oversized thread limits; They must be able to work in a variety of machines with a range of capabilities - from a simple radial drill press to a sophisticated CNC machine.

One of my customers is a large precision machine shop that specializes in very large gears and drive train components for wind energy items. At one point, OSG was the tap of choice for them with

the exception of the wind energy components. The wind energy applications required taps starting at M20 and went as large as M36. Since these items also went through a secondary heat treat process, they also required taps with a minimum .003" to .005" oversized

"It opened the door to all of my customer's wind energy components"

thread limit. This prevented our participation until OSG developed the HY-PRO® -WND product line. With a large variety of metric sizes ranging from M16 through M43 that are also available with oversized threads, it opened the door to all of my customer's wind energy components such as the

Insider

2008 Cutting Tool Solutions Catalog Corrections

Part numbers replaced: VPH-GDS (List 1900)

Please note that some part numbers from List 1900 have been changed. The new numbers will be automatically interchanged with the old for any future orders.

For a complete listing of the new numbers, please see the following web address:
www.osgtool.com/1900





sun gear, ring gear and high speed gears.

After OSG introduced the HY-PRO® -VXL-W tap, we met the customer's dimensional requirements and were able to put our taps to the test to see if they could meet their demanding production requirements. The material used in the wind turbine components is an alloy steel containing high nickel and chrome contents, which make it difficult to machine. To make the test more challenging, we had to conduct the first test in a less than ideal machine. We tested a M36 x 4 HY-PRO® -VXL-W tap in a radial drill press with limited rigidity and process controls. This setting definitely raised the bar for any tap. However, the HY-PRO® -VXL-W easily cleared the bar and exceeded customer expectation.

Our competitor's tap required a longer step process that generated chip packing and had a poor finish. It also necessitated the need to remove chips from the hole in a secondary operation creating excessive cycle time. The spiral flute design in the HY-PRO® -VXL-W generated a high quality thread finish and a manageable chip that was easy to evacuate from the tapped hole. The end result was that the HY-PRO® -VXL-W reduced the customer's cycle time by over 30 percent by eliminating the peck cycle and a secondary cleaning operation.

Besides the improved quality and process time, we more than doubled the tap life of the competition when we reached 70 holes. Another benefit of this series is simply being a stock standard. Quite often an oversized thread limit requires the need to make custom tools that involves long lead times. The fact that we stock these items was more than enough

“Besides the improved quality and process time, we more than doubled the tap life of the competition”

HXL, VXL and RXL taps, I have learned a few things; they deliver, perform and exceed customer expectations.

to convince my customer to convert to OSG.

When it comes to our HY-PRO® -



Short Cuts

Go Green to Save Green

Wind energy is one of the cleanest forms of alternative energy available. Using it can cut your electricity bill by as much as 90 percent. If you cannot make the jump to powering your entire house with alternative energy, start by focusing on one room at a time. A small solar kit can get you started, or use solar power in less energy-starved rooms, like a bedroom. Or look even more closely at your life, and get small solar cells to charge your laptop, cell phone, iPod, and other small gadgets —every little bit helps!

Green

Green Town

Todd Whaley, District Manager

It is 9:00 p.m. and the sky outside looks like rain could be coming. Since it is springtime, the threat of severe weather is always in the back of your mind. As you turn to the weather channel, the weatherman is issuing a tornado warning for your area. Having lived in the Midwest all



your life, you know the odds of being hit by a tornado are astronomical, but you take all the normal precautions and watch out

the windows to see what Mother Nature has got in store for you. Within 30 minutes the situation has gotten intense to say the least, as a tornado has been spotted on the ground only a few miles from your home. Your only course of action is to head to the basement and pray the approaching storm veers away from its current path.

Had this been you in Greensburg Kansas on May 4, 2007, you would have been right in the middle of one of the most devastating springtime storms in

history. At 9:45 p.m. the town of Greensburg was hit by an F5 tornado that was estimated to be 1.7 miles wide and traveled on the ground for 22 miles. This is the first F5 tornado of record since the update of the Fujita Scale.

The town of Greensburg, being a small rural community and having a footprint of approximately 1.5 square miles, was centered in the path of this F5 storm. The result was 95 percent of the town was completely destroyed by this tornado. Initial reports from the National Weather Service estimated winds at 205 mph. Only a mass of twisted debris was left of what used to be an entire city.

Greensburg was left with a monumental task of rebuilding. From its name came the idea to rebuild using the Green philosophy



“Only a mass of twisted debris was left of what used to be an entire city”

to make this city a model for the future. By choosing to build a futuristic Green community, Greensburg has incorporated many eco-friendly techniques into

the rebuilding process and overall community thought process.

Here are a few of the initiatives the Greensburg community has put into effect to truly make them a green town.

- **Greensburg Green Town is a grass roots community-owned organization, dedicated to providing the knowledge and resources to all the people of the community to be able to rebuild using green materials and practices.**
- **Green Club is a group of high school students that came together to help inform and inspire the people of their community about what green really is, such as recycling programs and green education programs.**
- **Greensburg Sustainable Building Database showcases green building projects in Greensburg Kansas so that all area residents can learn and utilize these practices.**
- **The Chain of Eco-Homes is building up to 12 model homes in the town of Greensburg. Each of these homes will serve as a model for building**

techniques, prices, sizes, energy efficiency features and green living products and services.

All of these unique homes will provide information and actual structures that residents can learn of the efficient and low maintenance operation of these homes.

• The LEED certification process has raised awareness and recognition for businesses that have rebuilt in the community of Greensburg and demonstrated efficient environmental features. At this point, two commercial businesses have reached LEED Platinum certification, and six more are in the process, while one is in the process of getting the LEED Gold certification.

• The City of Greensburg has passed a resolution stating that all city buildings and the related infrastructure would be built to the LEED Platinum standards, which will make Greensburg the first city in the



nation to do so.

• Every home owner in Greensburg was presented with a gift tree and made part of a city wide demonstration of the most successful ways of planting trees.

“It is important to look for better, more efficient, and greener ways of living in today’s society”

Green truly is a way of life that all of us should make an effort to educate ourselves about and look for ways to incorporate these eco-friendly practices into our own daily lives. It should not take a tragedy, such as the Greensburg Kansas tornado, for all of us to see that it is important to look for better, more efficient, and greener ways of living in today’s society.



Short Cuts

What is LEED?



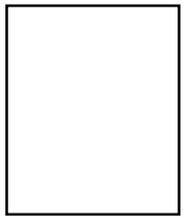
• LEED establishes standards for green and sustainable buildings in commercial and residential building industries.

• LEED helps to establish clear, specific environmental goals, attain measurable degrees of sustainability and prevent false or exaggerated claims of being a green building.

• LEED provides accreditation to building industry professionals who achieve high experience in the areas of “green development.”



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ENGINEERED PEACE OF MIND



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Contact OSG for more information.