



PLANTEX ceramic flap discs from CS Unitec deliver four times the life and two to three times the removal rate of standard discs for maximum productivity in stainless steel and other hard materials.



# ABRASIVE DISCS AND BLADES

## PACKING THE MOST BANG FOR THE BUCK INTO EVERY DISC

**T**oday's hard materials and exotic metals simply shrug off yesterday's abrasive products, which is why leading manufacturers are continually inventing new and better products for cutting and grinding. This issue's roundup of nine major companies showcases the current state of the abrasive science.

### CS UNITEC

The most important trends in the abrasive industry include increasing performance and productivity and enhancing operator safety and protection. A shrinking skilled labor force has left fabricators trying to do more with less. Coupled with an increased customer demand for quality and safer working environments, abrasive manufacturers concentrate on designing safer products with higher production capabilities.

"To meet these needs, CS Unitec has introduced a new 50-grit flap wheel with a special stacked grain design," says Scott Saunders, regional sales manager for CS Unitec. "It removes material like 40-grit disc but finishes like 60-grit, eliminating the need for two different discs. This disc not only saves time but reduces airborne particulates in the process."

Another safety concern focuses upon the source capture of airborne dust to protect operators from chemical compounds such as hexavalent chrome released during the grinding of stainless steel. The grinding process creates sparks in the 2,500-degree temperature range and any hose capable of withstanding that temperature is too stiff and inflexible for use when attached to a tool.



SAUNDERS

To solve this challenge, CS Unitec has introduced the PLANTEX ceramic flap disc, which greatly increases productivity for stainless and hard materials fabricators. PLANTEX discs offer up to four times the life and two to three times the removal rate while costing only slightly more than standard flap discs. PLANTEX ceramic discs also produce less airborne dust than standard discs, for a safer working environment.

"Abrasive manufacturers are in a mature market where new innovative solutions are difficult to develop," Saunders observes. "The window of opportunity for a revolutionary design has long passed, but small increases in safety and performance create significant long-term rewards for both manufacturers and fabricators."

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**CALUMET ABRASIVES COMPANY**

Calumet Abrasives Company (CABCO) is preparing to launch a new series of products that it believes will guarantee a significant cost savings for its customers.

“As an Indiana-based manufacturer, all of our products have been made proudly in the USA for over 70 years,” states



SARAF

Michael Saraf, CABCO director of sales and marketing. “Known primarily for our small-diameter cutoff wheels for use on die grinders, our new product launches will feature larger diameter cutoff wheels designed for use on angle grinders. We will have a complete offering of 4.5- to 6-inch Type 1 and Type 27 cutoff wheels.”

CABCO Cutter branded thin cutoff wheels, in thicknesses of 1/32 and 0.035 inches, will produce fast, low-kerf cuts. Ripper brand wheels, in thicknesses of 1/16, 1/8, 3/32 and 0.045 inches, will attack metal aggressively, last longer than conventional cutoff wheels and feel smooth to the operator.

Both the Cutter and Ripper brands will be available in Economy and Premium tiers. The Premium line incorporates an optimal blend of abrasive grain type and bond, making it an excellent choice for both metal and stainless steel applications. The Economy line provides a high-value solution for a variety of carbon steel applications.

CABCO also offers a contaminant-free line of cutoff wheels for those select stainless steel, food-grade and nuclear applications that demand a corrosion-free finish. These wheels contain less than 0.1 percent iron, sulfur and chlorine.

“At CABCO, we recognize that users have choices when it comes to selecting abrasive brands,” Saraf says. “We also recognize that there is more to the selection process than just the product, so we focus on complete

customer satisfaction in everything we do. We back up our promise with an invitation for you to give us a try at no cost. Please contact us today for a free demo of our product!”

**DEWALT**

Professionals today face both stricter regulations and harder materials as more applications use stainless steel and high-nickel-based materials such as Inconel and Hastelloy. To handle these materials, power tools are also more powerful. Grinders with more powerful, higher-amp motors put more stress on grinding wheels. To meet the demands of hard metals and high power tools, many end-users are shifting to ceramic grain wheels for better performance, and DEWALT has these users well covered.

“DEWALT’s new 0.045-inch-thick Extended Performance cutting wheels are 24 percent faster on average than the current DEWALT Extended Performance wheels when cutting 3/4-inch steel tubing,” begins product manager Maurice LaPointe. “Designed to cut a variety of ferrous and stainless steel materials, DEWALT High Performance and Extended Performance cutting wheels feature a high grain concentration that allows for aggressive yet smooth cutting, long life and a high material removal rate. The net result is a high level of productivity.”

DEWALT’s new High Performance aluminum oxide cutting wheel range includes 1/16- and 0.040-inch thicknesses. The 1/16-inch wheels allow end-users to maximize wheel life when cutting heavy-gauge material such as structural steel, black pipe and rebar. On average, these 1/16-inch cutting wheels have 74 percent more life than standard DEWALT wheels when cutting 1/2-inch threaded rod.

*DeWalt’s recently released extended performance XP ceramic flap discs and wheels focus on productivity with aggressive yet smooth cutting, long life and high removal rates.*

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Taipan's patented double-sided Platinum Series twin-flap disc allows users to complete two processes, such as grinding and finishing, with the same product.

cut or remove material rapidly and effectively.

"The Twin-Flap is a result of our drive to continually research, test and distribute high-quality and innovative abrasives sourced from the best manufacturers in the world," states Ralph Beaumont, national sales director for Taipan Abrasives. "This double-sided disc allows you to complete two process applications, such as grinding and finishing, with the same product. Research has proved substantial time and cost savings by allowing the user to complete the job quicker by having two flap discs immediately to hand in one disc. Costing less than two individual flap discs, it doesn't take long to see production costs being reduced."

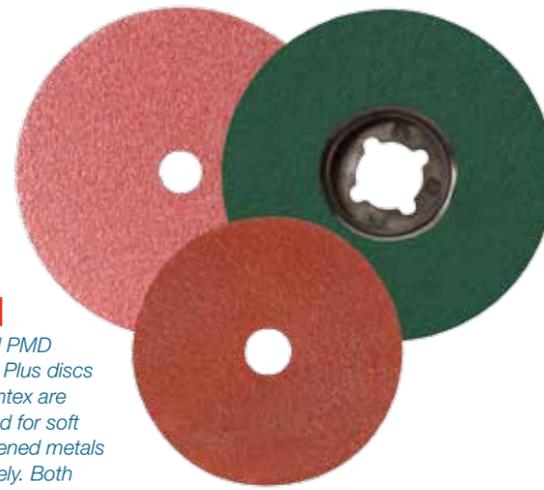
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OSHA has taken an aggressive approach toward minimizing vibration and the adverse effect it has on operators using type 27 grinding wheels. The combination weight of the wheel on the right-angle grinder, in conjunction with the mechanics of a hard wheel grinding hard materials, results in ergonomic stress and fatigue.

To address this, Gemtex developed the CZ45 disc to be used as an alternative to grinding wheels. The CZ45 is a 4 1/2-inch-diameter, lightweight, plastic-backed disc that provides increased stock removal rates and little to no vibration when compared to grinding wheels. In addition, the CZ45 does not require a backup pad, is flexible, quiet and produces minimal dust.

**TAIPAN ABRASIVES**

New to the abrasives world in North America is the patented Platinum Series Twin-Flap disc exclusively supplied by Taipan Abrasives to distributors in Canada and the USA. The name Taipan is derived from one of the most venomous snakes in the world, the Australian Taipán. The slogan, "The brand with bite!" is reflected in the products themselves — Taipán abrasives are of high durability and



SMD and PMD Supreme Plus discs from Gemtex are formulated for soft and hardened metals respectively. Both feature a non-loading agent which prevents clogging and increases disc life.

Gemtex also offers the very-high-quality PMD Supreme Plus, which is formulated with ceramic grain and

proprietary coatings to reduce heat buildup and prevent loading. Both of these products minimize downtime and the increasing cost associated with premature disposal of grinding discs when working on aluminum and other nonferrous materials.

SMD and PMD Supreme Plus lines are offered in a number of product shapes and sizes such as resin fiber discs, mini resin fiber discs and Trim Kut.



PRENDA

The 0.040-inch wheels are designed to increase cutting speed and smoothness in thin-gauge materials such as square tubing, stainless steel and sheet metal. Test results show that the new 0.040-inch cutting wheels are 28 percent faster on average versus standard DEWALT wheels when cutting 3/4-inch steel tubing.

**GEMTEX ABRASIVES**

"There is an increased requirement from end-users to address two main factors in the grinding process: A) Cost-effective products for stock removal on nonferrous metals, with emphasis on aluminum grinding and B) OSHA's requirements for ergonomically favorable products to grind hardened metals," begins Frank Prenda, vice president of sales and marketing.

"At Gemtex we have developed two products focused on the ever-present loading problem incurred when grinding aluminum. The SMD (Soft Metal Disc) is an economical resin fiber disc option with a formula of aluminum oxide and a non-loading agent which prevents clogging and increases the life of the product."

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Twin-flap zirconia flaps are welded to a plastic spin-on 5/8-inch by 11 center allowing users to keep jobs moving with ease. They are available in 10 different grit combinations – 40/40, 40/60, 40/80, 40/120, 60/60, 60/80, 60/120, 80/80, 80/120, 120/120 and 4.5- and 5-inch diameters.



**New Polifan Z SG-Power zirconia flap discs from abrasives giant PFERD outlive prior products two to one. They deliver greater productivity yet less vibration, noise and dust.**

savings to the end-user using PFERD products.”

The Twin-Flap disc is approved to European Standard EN13743 specifications which scrutinize aspects such as operating speeds, burst speeds, safety factors and vibration levels. This standard is one of the highest qualifications an abrasive product can achieve.

**PFERD**

Safety and cost are two key issues of importance influencing abrasives design and application today. Reducing operator fatigue means reducing lost time. That translates into overall reduction in risk and saves real dollars. Successful contractors do not only look at per-piece cost, but rather they measure total cost of the material finishing process, ensuring their supplier meets high safety level ratings and addresses overall operational health of its product users. That will result in total cost reduction and risk mitigation.



THOMPSON

“PFERD’s new Polifan Z SG-Power zirconia flap discs exemplify this commitment to continually innovate and deliver solutions that offer real value,” says John Thompson, PFERD national technical sales manager. “With a tool life over 200 percent longer compared to its predecessor and significantly higher aggressiveness throughout the entire tool life, these flap discs offer superior results in the shortest possible time.”

Incorporated into the product’s design are noticeable reductions in vibration, noise and dust levels that reduce operator fatigue. Increased aggressiveness, longer tool life plus improved operator safety all translate into real economic value.

“Along the lines of demonstrating value, customers can reach out to their local PFERD representative to learn more about our cost savings tool,” Thompson adds. “The tool helps quantify and document opportunities for total cost

“Technology enhancements to reduce vibration and fatigue, lower noise and reduce risk of injury are at the forefront of abrasives and power tool developments at PFERD. Our aim is to make the jobs of those in the construction, welding and industrial markets safer, more cost effective and ultimately more competitive.”

**WALTER SURFACE TECHNOLOGIES**

The trends Walter sees most often influencing abrasive design are the continual focus on productivity, comfort and safety. Walter Surface Technologies works closely with its customers to ensure these trends are incorporated into product design.

“In the world of abrasives, this means designing durable products that provide high removal rates at the lowest price possible,” says Marc Brunet-Gagné, product manager for bonded abrasives at Walter Surface Technologies. “This also means providing a product that is comfortable for operators. An abrasive that reduces vibrations will in turn reduce worker fatigue and discomfort, which easily translates to an overall increase in job productivity. At the end of the day, this saves shops real dollars.

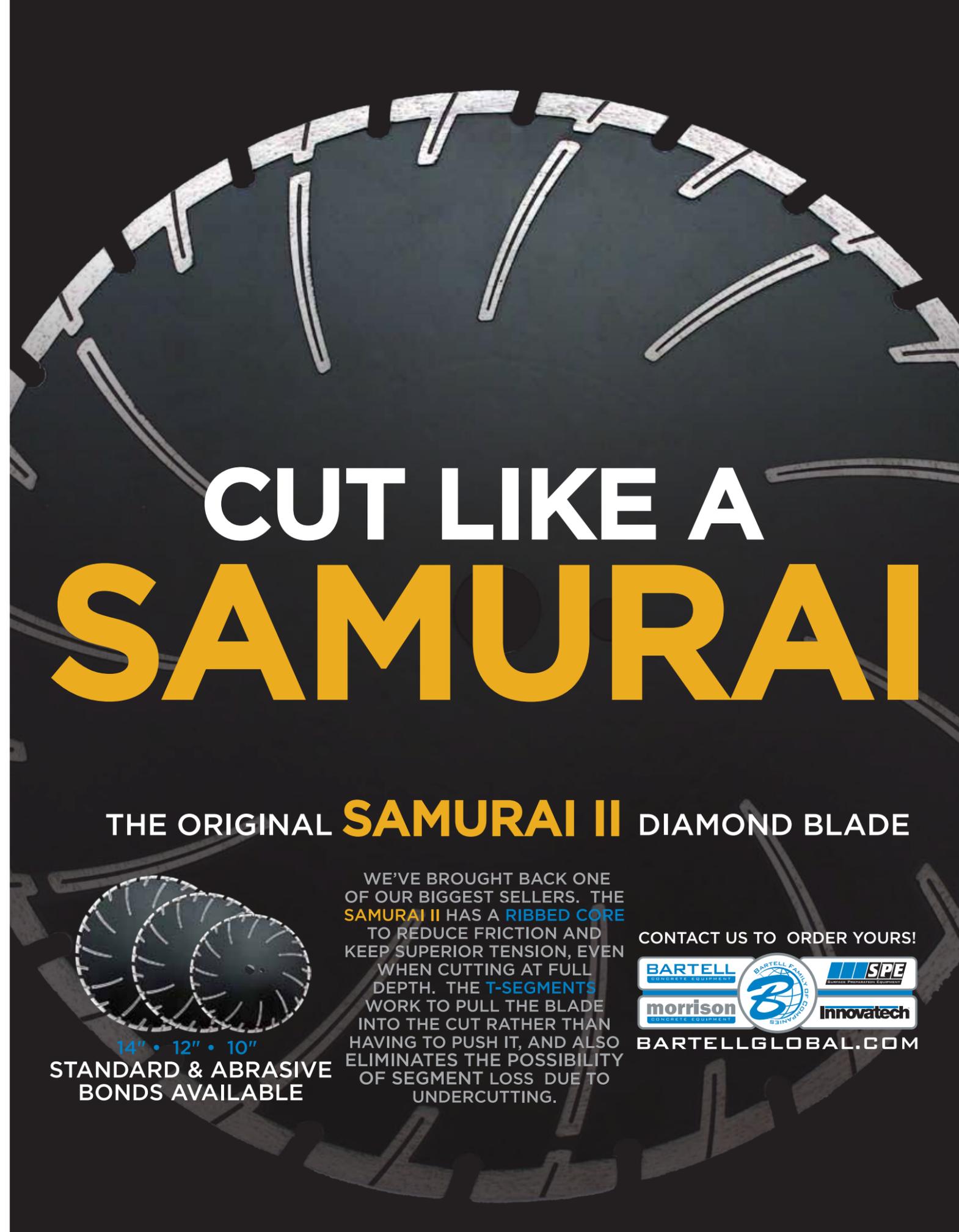


BRUNET-GAGNE

“Grinding is one of the toughest, most demanding tasks in the metalworking industry because of the noise, vibrations and dust,” adds Brunet-Gagné. “For 2017, we’ve redesigned our Xcavator grinding wheel with our new Comfort Max technology built into the hub to provide

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**The Walter Xcavator grinding wheel features exclusive Comfort Max technology built into the hub for smoother, more comfortable grinding with no sacrifice of performance or removal rates.**



# CUT LIKE A SAMURAI

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a smoother, more comfortable grinding experience without sacrificing its premium performance and ultra-high removal rate.”

The wheel offers a 15 percent reduction in vibrations when compared to its previous generation and offers an optimal power transfer from the operator to the working surface. In addition, the Xcavator features a patented multi-layer technology and a new advanced design that prevents edge flaking for better balance and added safety.

“Walter has a long reputation for innovation and product development that helps operators work more efficiently and safely,” adds Brunet-Gagné. “The Xcavator is at the forefront of abrasive technology, providing the operator with more comfortable, ergonomic working conditions and the highest removal rate for steel and stainless steel.”

**MAKITA**

Using the right grinder accessory means faster material removal and increased efficiency. Makita ultra-thin cut-off wheels and INOX grinding wheels are fast-becoming job site favorites for their consistent performance with both corded and cordless grinders.

“Makita INOX grinding wheels are engineered for fast material removal on steel and stainless steel, but with less noise and vibration,” says Steve Relaz, Makita product manager, accessories. “The wheels feature an aggressive composition with white aluminum-oxide abrasive and 36-grit abrasive for efficient material removal. Makita engineers applied a new formulation that results in less vibration and lower noise under load. Makita INOX wheels are available in a full range of diameters, including 4, 4 1/2, 5, 6 and 7 inches.

Makita INOX wheels combine improved material removal with less noise and vibration for improved grinding efficiency.

Makita recently expanded the range with INOX flex wheels that feature a bonded adhesive construction so they flex for better contact on flat or irregular surfaces. INOX flex wheels feature flex grooves engineered for up to 56 percent less vibration than standard wheels. Cordless grinder users can get up to 70 percent more grinding per battery charge due to design efficiencies. They are ideal for metal and steel grinding — including irregular surfaces like steel pipes — as well as surface preparation, weld clean-up and rust removal.

“Makita Ultra-Thin cut-off wheels are engineered to cut faster with reduced material waste,” Relaz continues. “At only .032 inches thick (20 percent thinner than most competitor cut-off wheels) they are designed for fast cutting and will quickly slice through channel, pipe, rebar, angle iron and stainless steel. The ultra-thin design with 60-grit abrasive not only cuts faster but also reduces the load on the

motor, making them ideal for use with cordless grinders including Makita 18V LXT brushless angle grinders. These premium cut-off wheels are constructed with zirconia aluminum and are available in both standard Type 1 Flat and Type 27 depressed center designs.”

**OSBORN ABRASIVES**

“With today’s ever-growing demands for increased productivity and decreased rejection rates, the real focus is on precision and a total metal finishing solution,” begins



Ty Weber, Osborn product manager for abrasives. “It’s not enough to just make the cut or grind the surface, you need to take the piece from start to finish. More and more, our field techs are being asked to review the entire process, and develop a solution that addresses, incorporates and smoothly transitions every step along the way.



WEBER

“At Osborn, we’re addressing this by making sure that a solution or product developed in one area or for one industry is shared up and down the organization. A solution might be seen as ideal in one application, without ever even being considered in another, because it’s not happening in that region. That’s why we launched our line of grinding wheels, flap discs and cut-off wheels in the U.S. Feedback has been tremendous, and is already leading to

Osborn’s all-new abrasives line includes depressed center grinding discs, cutting wheels and flap discs in sizes from 4 1/2 to 7 inches and include aluminum oxide, zirconia and ceramic abrasive types.

new product development.”

Locally, this means having technicians who are ready to look at the whole process and see where a specific aspect of the grinding process may hamper an effective solution for the final finishing stages, and having the lab resources to test new combinations.

“Change is the only constant, with abrasives and with our customer’s business,” Weber states. “The real challenge is to be open and adaptable to innovation. We’re focused on hearing from our customers and working on a process and product that will meet their challenges, not bringing them a product and making the solution fit.” **CS**

**The Original.**

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