

FABTECH 2012

Las Vegas



With a supersized welding product marketplace, full-on professional program, and countless networking opportunities, Las Vegas attendees could bet the house they'd find something to enhance their careers at this year's show

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FABTECH 2012 defied the Las Vegas odds and came up a winner. Attendance for the three-day event was a robust 25,903, and the combined net square footage for the exhibition was 465,330. Crowds and optimism marked FABTECH, which was held Nov. 12–14, in Las Vegas, Nev. On the welding side, 522 exhibitors occupied 174,129 sq ft. Although uncertainties still exist in the economy, many manufacturers see an improving growth rate in 2013.

In addition to the exhibitions, there was a full arena of educational opportunities throughout the three days. More than 100 conferences, seminars, technical presentations, and keynote speakers were offered to the attendees. One discussion that garnered a standing-room only crowd featured a panel of experts who offered an analysis on the presidential election result and how it may affect manufacturing in 2013. A roundup of that analysis is reported later in this article. Following is a day-by-day review of the show's highlights.

Monday, November 12

Annual Business Meeting Convenes. William Arent, director of economic and urban development, Las Vegas Redevelopment Agency, welcomed the American Welding Society to the city of Las Vegas, noting the city has a population of 600,000, with another two million in the surrounding area. Challenges still exist in the manufacturing and construction sectors, but he sees opportunities developing in both of those areas. "It is time to dwell on the positive," he said. "Manufacturing in the United States is still the strongest in the world."

The 93rd business meeting of the American Welding Society was called to order by AWS President William Rice. Dignitaries from 15 sister organizations in the United States and from around the world were recognized. President Rice then noted this has been a very good year for the American Welding Society. He went on to list some of the Society's achievements during 2012. In that list were the continuing development of American Welding Online (AWO), a series of online courses for education and certification programs; AWS hosting the International Institute of Welding's 65th Annual Assembly, which attracted 800 attendees from 49 countries; scouts all over the country earning the Boy Scout welding merit badge, the development of which was spearheaded by AWS; the success of the traveling Careers in Welding trailer, which has exposed thousands of young people to welding; and the Society's move into a new World Headquarters, which had its grand opening this past November.

President-elect Nancy Cole spoke of the shortage of welders that still plagues many industries. "To meet this shortage, we have to improve the image of welding, invite new faces into the profession, and get the word out of the good pay and opportu-

nities that exist," she said. "Women have been underutilized in combating this shortage," she continued. "I will celebrate women in welding and encourage more to enter the profession during my presidency." Cole noted the many past and present achievements of women who have advanced their careers through welding.

Adams Lecture. Professor **Sindo Kou** (Fig. 1) of the University of Wisconsin, Madison, has spent much of his career studying fluid flow and solidification of the weld pool. Fundamental research at the university has demonstrated the follow-



Fig. 1 — During this year's Adams Lecture, Prof. Sindo Kou related how fluid flow and solidification during welding dominate the fusion zone of the resultant weld.



ing: Computer models capable of calculating the weld-pool shape; visualization of Marangoni flow, including its reversal and oscillation; a theory on the effect of surface-active agent beyond Heiple's; quenching of the weld pool to reveal the microstructure development during welding; suppression of solidification cracking with a wavy crack path; weakening of the partially melted zone by severe grain-boundary segregation; prediction and elimination of liquation-cracking susceptibility; fundamental concepts regarding dissimilar filler metals; and macrosegregation mechanisms beyond Savage's.

The full text of Kou's lecture was published in the November 2012 *Welding Journal* beginning on page 287-s.

The AWS/SkillsUSA U.S. Invitational Weld Trials.

Eleven competitors from five countries competed throughout the exposition in the AWS/SkillsUSA U.S. Invitational Weld Trials. Attendees witnessed firsthand the competition spread over four days of welding using multiple welding processes. The judging criteria comprised safety, print reading, penetration and fusion, distortion control, selection of filler metal, manipulative skills, destructive and nondestructive testing, welding machine parameter setting, and general appearance of the project. Some of the welding required X-ray reviews and hydrostatic pressure tests to 1000 lb/in.² to verify the integrity and quality of the welds.

Six national SkillsUSA welder finalists (Fig. 2) competed alongside five international welders representing Australia, Canada, United Kingdom (2), and Russia.

The top three U.S.A. competitors were 1st place winner Alex Pazkowski from Washtenaw Community College; 2nd place Andrew Cardin from Valley Technical High School; and 3rd place Tanner Tipsword from Wyoming College. The overall top three finishers were Alex Pazkowski (Gold), Andrew Cardin (Silver), and Canadian Nick Kitt (Bronze).

The top three U.S.A. competitors will advance to a "tune up" at the AIDT Training Center in Mobile, Ala., a division of the Alabama Department of Commerce that encourages economic development through job-specific training. Past TeamUSA welding medalists will train the three finalists to give TeamUSA the best chances of earning a medal in Germany. These top three welders will compete for the final TeamUSA

position during the 2013 Daytona 500 Speedweek. That winner will not only represent the United States at the 42nd World-Skills Competition in Leipzig, Germany, July 2–7, but will also receive a \$40,000 scholarship from the Miller Electric Mfg. Co., administered through the AWS Foundation.

Tuesday, November 13

Plummer Memorial Education Lecture. Professor Yoni Adonyi, LeTourneau University, Longview, Tex., delivered the Plummer Lecture for 2012 — Fig. 3. His talk was titled Welding Engineering Education and Training — National and International Perspectives — Confessions of a PhD Who Can Weld.

From his formal educational beginning in Romania to his PhD in welding engineering from The Ohio State University, Adonyi has led a life of varied experiences. His welding experiences began in the summers between college semesters and were enhanced while in the Israeli military, where he became proficient with the GTAW process welding aluminum.

Knowing how to weld has made him a better teacher. "The practical experience I learned from gas tungsten arc welding made me better aware of the fundamentals of the process and where improvements could be made," he said.

His teaching career began when he became aware of an opening at LeTourneau University. Even though he was on a successful career path working in the research department of U.S. Steel at the time, he was willing to take a 40% pay cut to teach. "It was a calling I felt I had to fulfill," he said. "It was an opportunity to give back to society." Adonyi was also concerned about the lack of qualified welding engineers in the workforce. He cited statistics from a survey that indicated only 30% of those in industry who hold the title of welding engineer have the educational background for that position. This group lacking in formal education for a welding engineer included mechanical engineers and materials engineers, as well as welders who have come up through the ranks.

His mission is to improve those statistics, but he feels formal education is under attack in the information age. "There is so much information available on the Internet that some mistake this as enough for a formal education," he said. "They think all knowledge can be accessed electronically," he continued. In



Fig. 2 — The U.S.A. instructors are (back row, from left to right) Stan Nichols, Glenn Kay, Scott Holcomb, Dan Rivera, Matt Hayden, and Christian Beaty. The U.S.A. participants are (front row, left to right) Tanner Tipsword (3rd place in the U.S.A. competition), Alex Pazkowski (1st place in the U.S.A. competition and Gold Medal overall), Jordan Decker, Andrew Cardin (2nd place in the U.S.A. competition and Silver Medal overall), Drew Swafford, and Michael Miller.

Fig. 3 — Professor Yoni Adonyi, LeTourneau University, presented the Plummer Lecture.



reality, education requires discipline and direct instruction. He uses electronic communication to enhance learning, but places an emphasis on appealing to a student's sense of reasoning. It is not just finding the information, but he encourages processing the information.

Adonyi also spoke of some myths of research vs. teaching that need debunking. There is sometimes in academia the thinking that research is fun and teaching is boring, or research is just a money-making proposition, or teachers don't know how to do research. "I say teaching feeds on new research and research can't exist without good teaching. By being a teacher and a researcher, I have helped to improve the curriculum and become much more aware of all the aspects of the discipline," he said.

As a teacher, he hopes to leave a legacy of adding value to the welding industry and being a part of the solution.

Washington Insiders Evaluate the Impact of Election Results on U.S. Manufacturing. A packed audience formed at the North FABTECH Theater for "Post-Election Analysis: How the Results Impact U.S. Manufacturing" held exactly one week after election day.

Paul Nathanson, a founding partner at the Policy Resolution Group, moderated the event at which **Omar S. Nashashibi**, a partner at The Franklin Partnership, LLP, and **David Goch**, a partner at Webster, Chamberlain & Bean, served as panelists — Fig. 4.

The session kicked off with Nashashibi detailing how President Barack Obama won a second term and the votes earned from various demographics. As for what will happen next, considering the lame duck session of Congress, one of the many issues is the framework regarding \$109 billion in automatic spending cuts.

In addition, Nathanson mentioned not wanting to fall off the fiscal cliff. It is expected the 113th Congress will tackle numerous important issues next year.

"We are hoping for a comprehensive tax reform," Nashashibi said. Goch also believes Obama's second term will be a collective legacy with Congress and the president working together.

At the end, Nathanson spoke about workforce development. Nashashibi feels connecting community colleges with workplaces and bringing parents into facilities are essential. Goch adds education should be a national strategic initiative, not a social issue. "The long-term value is enormous," Goch said.

Women Celebrate Their Contributions to the Gases and Welding Industries. The Women in Gases and Welding Network (WGW) got its start with the GAWDA organization and is now a collaboration between AWS and GAWDA. At this reception during FABTECH, AWS President-Elect Nancy Cole stated that industry needs to get the word out to women about the many opportunities available in the gases and welding industries. She shared stories

Fig. 5 — Emily DeRocco, former president of The Manufacturing Institute, said she hoped to see growth in the number of women involved in manufacturing because it offers them opportunities for well-paid, skilled jobs.



about women currently working in a variety of welding-related fields who are excellent role models.

Emily DeRocco, former president, The Manufacturing Institute, National Association of Manufacturers, noted that the number of women in manufacturing is still low — Fig. 5. "Women hold less than 25% of STEM (science, technology, engineering, and mathematics) jobs, including in manufacturing and energy," she said. According to the U.S. Dept. of Commerce in 2011, "The number of women in executive positions was 11% in the durable goods category, and 13% in nondurable goods. However, the number of women-owned businesses in manufacturing has doubled in the last



Fig. 4 — Moderator Paul Nathanson along with panelists Omar S. Nashashibi and David Goch (on stage, from left) led "Post-Election Analysis: How the Results Impact U.S. Manufacturing."

Fig. 6 — David Bolser explained the five parts of ISO 25239, Friction stir welding — Aluminium, during his Thomas Lecture.



decade.” She said manufacturing is still where high-skilled, high-level, high-paid, middle-class jobs can be found, but women have made up only 2.5% of the skilled trades over the past 30 years.

“Two things need to be done,” she said. “Manufacturers need highly skilled workers and workers — male and female — need training for skilled jobs.”

Two new scholarships for women were announced during the reception. Air Products and the AWS Foundation are jointly establishing a \$50,000 scholarship to help enable women to develop the skills required to pursue technical careers. The first annual \$2500 scholarship will be awarded this year to a woman pursuing higher education in a welding or engineering discipline, who has proven to be an exceptional student and is eager to start her career in the industry.

“We are excited about coming together with the AWS to provide this scholarship opportunity for women for the benefit of our industry,” said Sue Reiter,

regional distributor sales manager at Air Products and a member of the WGWS strategic committee. “This scholarship program supports not only Air Products’ future employment needs, but also the creation of a workforce with the skills necessary to help companies compete in today’s global economy.”

The William F. Fray National Women in Welding Scholarship will also be awarded through the AWS Foundation. Fray was a life member of AWS and owner of a stainless steel tank fabrication company in Bridgeport, Conn. His daughter, Elizabeth (Liz) Fray, who ran the organizational side of the tank company for 20 years, wanted to honor her father. The \$50,000 endowment will provide an annual award of \$2500. The first award will be made after November of this year. Liz Fray decided to create a scholarship specifically for women because there was not one in place previously, and her focus is to encourage and support women toward a welding career.

Wednesday, November 14

Thomas Lecture. David Bolser of The Boeing Co., St. Louis, Mo., gave this year’s Thomas Lecture, “Standards for Friction Stir Welding Aluminium” — Fig. 6.

He identified friction stir welding (FSW), patented by TWI Ltd., England, in 1991, as a solid-state welding process that produces high-quality welds in difficult-to-weld materials.

When increased FSW use created the need for a U.S. standard, AWS published D17.3/D17.3M:2010, *Specification for Friction Stir Welding of Aluminum Alloys for Aerospace Applications*. Also, when increased FSW use created the need for an ISO standard, Bolser was asked to lead a working group to write this specification. In detail, he described the five parts of ISO 25239, *Friction stir welding — Aluminium*, including vocabulary; design of weld joints; qualification of welding operators; specification and qualification of welding procedures; and quality and inspection requirements.

In summary, Bolser stated the adoption of FSW standards represents a significant leap in the technology readiness level of the process and its ability to move into production. During the Q&A portion, he offered good advice; the team leader works hard with committee members to put together a standard, so three-day meetings are best, and have someone who knows the system tutor you.

10th Annual Image of Welding Award Winners Honored. The American Welding Society (AWS) and the Welding Equipment Manufacturers Committee (WEMCO) recognized the recipients of the 2012 10th Annual Image of Welding Awards during a ceremony at FABTECH — Fig. 7. The winners are as follows.

- **Individual Category, Ernest D. Levert, Dallas, Tex.** Levert, the senior staff manufacturing engineer for Lockheed Martin Missiles and Fire Control, Dallas, Tex., is a past AWS president and an AWS Counselor. He has averaged more than 1100 h of volunteer service to the Boy Scouts of America and local schools each year.

Fig. 7 — Pictured at the 2012 Image of Welding Awards (from left) are winners Ernest D. Levert (Individual); David Parker (Educator); Allie Reynolds (Distributor, WELSCO); David Corbin (Large Business, Vermeer Corp.); and Glenn Kay (Educational Facility, Washtenaw Community College).





- **Educator Category, David Parker, Renton, Wash.** Parker, an instructor at Renton Community College for more than 30 years, received several awards including the statewide, 2001 Excellence in Teaching Award by the Washington Association of Occupational Educators. He has also helped companies set up curriculums for training welders.

- **Educational Facility, Washtenaw Community College (WCC), Ann Arbor, Mich.** WCC's welding/fabrication facility has 60 newly redesigned welding booths. With a staff of industry-experienced and AWS-certified instructors, it offers certificate and associate degree welding programs. WCC student welders represented the U.S.A. at the last two WorldSkills competitions and brought home medals both times.

- **Small Business, AMET, Inc., Rexburg, Idaho.** AMET, started in 1989, offers turnkey automated welding systems. It has been an integrator of computerized welding systems to meet demanding applications in nuclear, aerospace, oil and gas, wind tower, heavy industry, and general manufacturing industries.

- **Large Business, Vermeer Corp., Pella, Iowa.** Since its start in 1948, Vermeer has grown from a one-person Iowa operation

to an international organization that manufactures agricultural, construction, environmental, and industrial equipment. It has started facilitating plans for a career academy, enlisting the assistance of area educational institutions.

- **Distributor, WELSCO, Little Rock, Ark.** WELSCO, the largest woman-owned gas and welding supply distributor in the United States, is also a family business that has served the market for more than 70 years. It sponsors the Arkansas Welding Expo and offers process training sessions for instructors during the summer breaks.

- **AWS Section, Houston Section, Houston, Tex.** The AWS Houston Section sponsors various events throughout the year, including an instructor's institute, student certification day, spring and fall educational sessions, and student nights. This year, it awarded eight welding scholarships totaling \$8500.

- **Media, Meghan Boyer, "Help Wanted, Skills Required."** Published in the February 2012 *FF Journal*, Boyer's article "Help Wanted, Skills Required," focuses on manufacturers' need for workers, Americans who need jobs, and the skills gap keeping them apart.

FABTECH 2012

Welding Product Showcase

Of course, the products and vendors are FABTECH's biggest draw. Following are just a few of those that drew the attention of Welding Journal editors.

For the machine shop that needs an all-inclusive fluid filtration and recycling system, the **SumpDoc** from Eriez® is on call. Just introduced this year at IMTS, this machine can be moved from sump to sump with an attached motorized pallet — Fig. 8. A fully automated system first removes sludge and chips from the sump, then filters out particulates down to 3 microns in size and separates oils. While the coolant recycles, the oils are collected in



Fig. 8 — An attached motorized pallet facilitates moving the Eriez® SumpDoc to different locations.

a disposable tank. The clean coolant is analyzed and mixed with water in three different levels of concentration, depending on the needs of the operation. Since this is all happening in a continuous loop, there is no need to shut down the operation. This equipment is economically feasible for an operation with ten sumps or more. Eriez®, www.eriez.com

The **BW5000** (Fig. 9) from Climax is designed for circumferential weld cladding, and it can operate at 100% duty cycle with a compatible CV power supply. Pipes, pressure vessels, and even conical shapes are within its capabilities.



Fig. 9 — The BW5000 is designed for weld cladding circular surfaces both inside and outside diameters.

Weld deposits of 0.125 to 0.35 in. thick can be made at up to a 12 lb/h rate. The unit can also weld flange faces and conical seats. It takes welders out of difficult and hard-to-reach situations, as well as removes them from fume concentrations in confined areas. Climax Portable Machining & Welding Systems, www.climaxportable.com

A first-time exhibitor at FABTECH, **Hex-Hut** is out to introduce its portable shelter system to the U.S. market. The nine-year-old company has been active mostly in Canada in the oil and gas in-



Fig. 10 — A lightweight support attaches directly to the pipe to hold the Hex-Hut shelter.



dustry. The frame that supports the flame-retardant material of the shelter attaches directly to the pipe (Fig. 10) and can be configured to meet different slopes or elevations. Setup is done with pins and lanyards, eliminating the need for special tools or hardware. Three different sizes are available weighing 139, 167, and 213 lb to accommodate pipe sizes from 3 to 56 in. Hex-Hut, www.hex-hut.com

The **Warrior** power source from ESAB was literally unveiled at FABTECH — Fig. 11. This new introduction took a fast track for development requiring only ten months. By working directly with welders, the company got quick feedback with prototypes that were tested in the field. What welders said they wanted was a machine easy to use, with simple controls, robust enough for tough working conditions, and performance. ESAB claims to have incorporated this wish list into the Warrior. All controls, as well as the power switch, are accessible on the front of the machine, and the knob design takes into account the wearing of gloves. It is a multiprocess machine that performs FCAW, GMAW, GTAW, SMAW, and arc gouging. The unit can deliver up to 500 A at 60% duty cycle, and it can be used in general fabrication under roof, or outdoors in remote locations. ESAB, www.esabna.com



Fig. 11 — The Warrior, a multi-process power source designed for many different applications, was introduced by ESAB.

A new promotion for Motoman is its **MC2000** robot intended for high accuracy laser cutting — Fig. 12. The gear design has taken out the “backlash,” allowing repeatability within 0.07 mm accuracy in cutting rectangles, ellipses, pentagons, hexagons, and circles. This six-axis robot can handle up to a 50-kg payload. In addition to cutting, it can also be used for welding. Yaskawa America, Inc., Motoman Robotics Div., www.motoman.com

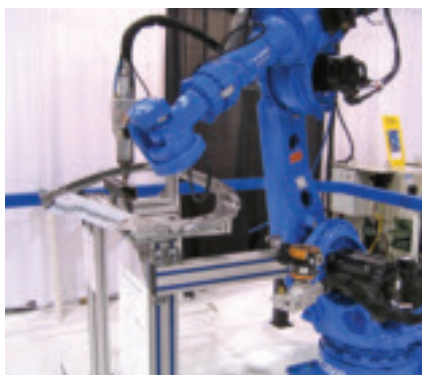


Fig. 12 — The Motoman MC2000 robot's gear design allows repeatability within 0.07-mm accuracy.

The **FIT RITE** system consists of fixtures designed to optimize the speed and accuracy of pipe fits. The system's inventor, Kayworth Mann, said the idea for the precision pipe fitting system came to him in a dream. He had been working as a consultant on a job and felt that because of the time spent fitting pipe some profits had been lost. That bothered him, so he began thinking of another way. The system's primary fixture is the fitting cradle that holds pipe or flanges and the fitting rests to properly position alignment — Fig. 13. Included are two fitting cradles; one fitting rest each for pipe nipple, short pipe, T, short radius elbow, and 45-deg elbow; and a patented tri-spacer for alignment of spacing. The tri-spacer can also be used to adjust roundness of the pipe or tube. The system comes in



Fig. 13 — The FIT RITE pipe fitting system, shown here with its inventor Kayworth Mann, provides flange alignment and bolt hole orientation in seconds and can be used in the shop or field.

sizes ranging from ½ through 12 in. nominal. Universal fixtures are available in sizes ranging from 14 in. through 24-in. nominal. Fixtures for pipe from 26 to 72 in. can be produced by special order. Fit Rite, www.fitritefast.com

Lincoln Electric introduced its latest virtual reality arc welding training product during this year's show. The **VRTEX® Mobile** (Fig. 14) delivers basic, entry-level training. It comes with a preinstalled basic GMAW package providing training for flat plate, 2F and 3F joints, and 1G, 2G, and 3G grooves. A SMAW package is optional. The virtual SMAW device is at a fixed 90-deg angle. It comes with a monoscopic, face-mounted display with touchscreen user interface, and a tabletop coupon stand. Deanna Postlethwaite, marketing manager, Automation Div., said, “What we found with the first (VRTEX™ 360 system,) was that people were moving it all the time, and it wasn't really designed for that.” The new smaller, less expensive, more basic version offers the mobility customers were looking for. The Lincoln Electric Co., www.lincolnelectric.com



Fig. 14 — The VRTEX® Mobile offers basic GMAW and SMAW virtual reality welder training, and can be moved to wherever it's needed.

A lot of people took a look at **Baxter™** during the show, and it seemed that it was looking back at them — Fig. 15. The brainchild of Rodney Brooks, former director of the artificial intelligence laboratory at MIT and one of the founders of iRobot, Baxter is a robot with a somewhat human appearance that can perform a variety of production tasks while safely and intelligently working next to people. A key feature is that anyone can program it. The robot “learns” its tasks through demonstrations of what it needs to do. It was designed with a safety system that allows it to work in close prox-



imity to people in a production environment with no barriers. No integration is required; it comes out of the box with hardware, software, controls, user interface, safety, and sensors. It can perform a wide range of tasks including material handling, light assembly, loading/unloading, and testing and sorting. The robot features two arms, each with seven axes of motion, built-in electric grippers, and five cameras. It is priced at \$22,000. Rethink Robotics, Inc., www.rethinkrobotics.com



Fig. 15 — Rethink Robotics designed its robot so anyone could program it and so people could work near it without the need for a safety cage.

The **UDR-V2011** ultradynamic-range weld video camera system filters the light from the arc to produce images in the range best seen by the human eye. With the system, it is possible to view the arc, electrode, weld pool, joint and surrounding base metal before, during, and after the welding process live or record the images for later use. Designed for use in automated welding for weld quality assurance, and for development and setup of weld processes. The system includes the camera, laptop or desktop computer, software, and cables — Fig. 16. There is no need for physical filters, the software performs the filtering function. It records the full ultradynamic range of up to 10,000,000:1. InterTest, www.intertest.com

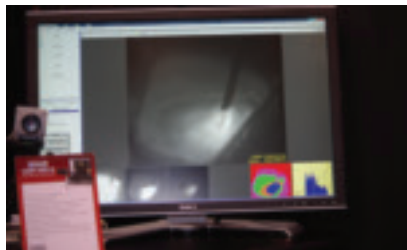


Fig. 16 — The software of the UDR-V2011 digital weld video camera system filters out the light from the welding arc so users see a clear image of the weld.

The **LD-600R**, a compact tilt/turn positioner, handles pieces in excess of 1100 lb six in. off the table — Fig. 17. Operation is simple with standard foot switch and pendant controls, as well as an easy-to-read protractor dial indicator. It also offers a compact size (705 lb unit weight) and square footprint design. The positioner can be used with GTA and GMA welding machines. A new noise tolerance design reduces the impact generated during GTAW to ensure stable rotation. The company's exclusive antidust and spatter design allows stable operation. It is useful for users in pipefitting and petrochemical industries along with boiler-makers. Options include a torch stand, automatic welding controller, and work chuck. Koike Aronson, Inc./Ransome, www.koike.com



Fig. 17 — A new design in LD-600R, a portable multipurpose positioner, reduces the impact of noise generated during GTAW ensures stable rotation.

The **Powermax105®** offers a 105-A air plasma system for hand and automated cutting as well as gouging — Fig. 18. It cuts 1/4-in.-thick metal and severs metal up to 2 in. thick. Based on the same technology platform as the Powermax65 and Powermax85, the product represents four years of research, engineering, and testing. Also, it delivers faster cut speed, improved cut quality, and long consumable life; seven torch options for cutting and gouging versatility, whether by hand, machine, or robot; and patented SmartSense™ technology that automatically adjusts gas pressure and detects when consumables have reached end of life. Hypertherm, www.hypertherm.com



Fig. 18 — For cutting and gouging flexibility, the Powermax105® features seven torch options.

The **HS-80**, **HS-165**, and **HS-200**, combined with Panasonic's **G3** welding robot, position the material for welding to provide a synchronized robotic system — Fig. 19. They are available in 80-, 165-, and 200-kg versions. The common pendant and language eliminates the need to learn extra robotic languages. The robots work in tandem to complete tasks. In addition, programming the weld position becomes as easy as working with a fixed workpiece, ensuring out-of-position welding is avoided. The material handling robots offer network capabilities with fully digital communication protocol. They are also useful for heavy equipment, automotive, and material handling industries. Miller Electric Mfg. Co., www.millerwelds.com



Fig. 19 — The G3 material handling robots, combined with Panasonic's G3 welding robot, position the material for optimum welding.

Jackson Safety's autodarkening welding helmets featuring Balder technology give welders a clear view from various angles, reducing eye fatigue as well as the





need to move, adjust, and refocus. The **WH70 BH3** helmet with this technology offers enhanced visibility and color recognition, plus a variable shade (9–13), adjustable sensitivity, and opening time delays — Fig. 20. It is especially useful for GMAW and GTAW. Improvements over the HSL-100 include a curved front cover plate for reduced heat buildup, reflections, and fogging. The helmet has a five-year warranty. Kimberly-Clark Professional, www.kcprofessional.com



Fig. 20 — The WH70 BH3 helmet with Balder technology improves welders' vision.

UltraBraze™ from Luvata is a new furnace brazing alloy that promises to improve on alloys commonly used for this application, such as pure copper (CDA 102 or 110 alloy) or a paste mixture consisting of pure copper powder and a binder — Fig. 21. UltraBraze, which is approximately 95% copper, is formulated to offer better wetting with reduced puddling and run-off, automatically adapting to joint clearance variances to produce more uniform welds. In tests,



Fig. 21 — Luvata presented its new furnace brazing alloy, UltraBraze, designed to overcome the challenges of large joint clearance steel-to-steel brazing.

shear strength associated with this new alloy increased more than 50%. Costs are reduced because there is no need to use flux or binders, and because the results are more consistent, there are less defects and rework. Luvata Ohio, Inc., www.luvata.com/ohio

Walter Surface Technologies presented the **AF-WELD** antispatter and Air Force Starter Kit that includes the use of the Air Force Station, four 2.6-gal containers of AF-WELD liquid, and two refillable bottles — Fig. 22. The station refills the bottles with the antispatter liquid, and air is used as a propellant, making this a green system that eliminates the use of polluting propellants and disposable aerosol cans. The manufacturer asserts that AF-WELD prevents weld porosity, cracking, is corrosion resistant, and allows for immediate painting. A larger kit is also available, including a 55-gal drum, six refillable bottles, and the Air Force Station. The station is included in the kit free of charge but remains property of the manufacturer. Walter Surface Technologies, www.walter.com



Fig. 22 — The Air Force AF-WELD Starter Kit includes four 2.6-gal containers, two refillable bottles, and the Air Force Station.

Engineers, purchasing professionals, and facilities managers can conveniently find suppliers, source products, and access CAD models and product news by visiting the new **ThomasNet.com** Web site. The new Product Search platform (ps.thomasnet.com) enables users to find specific components and products. Thomas has aggregated detailed information and line item detail for more than

100 million parts from more than 30,000 suppliers. Product Search allows users to specify the product they are looking for using taxonomy-powered search and navigation features. Specifiers can find the product that meets their requirements by defining precise product attributes such as applications, materials, dimensions, and tolerances. The new site also makes it easier for buyers to find local suppliers, quality certified suppliers, and companies that meet their supplier diversity requirements. ThomasNet, www.thomasnet.com

StoodCor™ 136 by Stoody is a new carbide deposit that produces chromium and fine primary carbides in an austenitic matrix — Fig. 23. It's designed to be used as an erosion- and corrosion-resistant alloy deposit for hardfacing and cladding applications, and its ability to resist high abrasion in a corrosive environment makes it especially suitable for hardfacing and cladding slurry pipe, plate, and vessels found in mixing, mining and quarrying industries. Stoody, Victor Technologies International, Inc., www.victortech.com/stoody



Fig. 23 — StoodCor™ 136 is an open-arc wire suited for ID cladding of pipe. It provides both erosion and corrosion resistance to meet the needs of slurry transportation applications.

See You in Chicago

The 2013 FABTECH will be held at McCormick Place, Chicago, Ill., November 18–21. It will be North America's largest welding, metalforming, and fabricating event in 2013. For more information, visit www.aws.org/expo. ♦

