January Technical Meeting

Thursday, January 10, 2019

Location: Jenoptik
1500 W. Hamlin Rd., Rochester Hills, MI 48309

Click here for Google Maps

Please join us at Jenoptik in Rochester Hills for our January technical meeting.
This meeting gives you an opportunity to network with your peers, suppliers, customers and other AWS members.
We will have a brief introduction and overview by the AWS Detroit Section followed by a light dinner and then the evening’s speakers and a tour.
As always, you do not have to be a member of the AWS Detroit Section to join us at the technical meetings.

AGENDA
5:30 - 6:00 pm
Mingle & Network
6:00 - 7:00 pm
AWS Detroit Section Introduction / Light Dinner
7:00 - 8:00 pm
Jenoptik Speakers & Tour
8:00 - 8:30 pm
Final Comments & Dismissal

Please RSVP to Amanda Davis via our website: awsdetroit.org and select the events tab
On behalf of the AWS – Detroit Executive Committee I would like to wish all of you a joyous New Year that is filled with health, happiness, and prosperity!

The Christmas Holiday Party that took place on December 15 at the Motor City’s Amnesia Club was a great success. Great thanks to Amanda Davis and her committee in pulling off a fun event. The panoramic view of Downtown Detroit and the upfront view of the historic Tiger Stadium were upstaged only by the fellowship among the AWS members and guests.

In 2019 we look forward to continuing our role in advancing the science, technology and application of welding and allied joining and cutting processes worldwide, including brazing, soldering and thermal spraying. The Detroit section is always looking for willing members to aid in the tasks to meet this goal. If you are interested in joining the AWS–Detroit Section Executive Committee our nominating committee is looking for candidates who will commit to a 3-year elected position. We meet once per month (September thru June) where we contribute our time and talent to one of the oldest and most productive sections at the AWS. If you are interested or have questions please call me directly.

Happy New Year!
Mark D. Gugel, P.E., Ph.D
(810) 602-9735; mark.gugel@gm.com

District 11 Director News

GREETINGS and WELCOME to 2019
The American Welding Society’s Centennial Year

Yes, that is right – AWS is 100 YEARS OLD!
This will be a very special year for AWS as our 100-year milestone is celebrated. AWS began in response to welding problems from the First World War. The Society was headquartered in New York City. The Society grew in size providing technical support for research and development of welding processes and filler metals, and solving many welding fabrication problems. A move occurred many years later to Miami and ultimately to the new building in Doral Florida. Our Society now is considered the premier organization for welding and cutting technical information and education. Announcements will be forthcoming in the near future regarding plans for celebrating our 100th Anniversary. Mark Nov. 11-13, 2019 on your calendar to attend FABTECH in Chicago where a large celebration will take place. It is great year to get new members to join as they can say they joined in our celebration year.

As a new year starts there are many activities that kick off with multiple opportunities for all. Highlighted below are several important activities and events that start and conclude early in the year.

Scholarship Applications: Begin December 1 & End March 1
This year the application process has changed to an online application system for National, District, and most Section Scholarships. The deadline is March 1 for scholarships to be used the following Fall term. Visit www.aws.org/scholarships to learn more about the

Continued on page 5
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**Welder Training Scholarship Applications**

With the start of a new year we begin with new opportunities for applicants to apply for these scholarships. These are for individuals who want to learn how to weld, as a stand-alone skill or if they are taking welding classes as part of a technical school program for fabricating, machining, automotive mechanics classes, etc. In 2018 District 11 (Michigan and Northwest Ohio) awarded 20 scholarships of $1,000 each. Students wanting a scholarship may apply at [aws.org/foundation/page/scholarships](http://aws.org/foundation/page/scholarships). More scholarships will be available this year so students should apply as soon as they can. Awards will be made to qualified students on a first-come basis until they are all awarded. The applications are simple and may be completed on-line.

**FOOD FOR THOUGHT:** It usually takes 30 to 60 minutes to complete an application. Ask students where that can go to work and earn $1,000 PER HOUR? The time invested is well worth the effort. For the National, District, and Section Scholarships the rewards are even bigger. These are not based on academic skills but who correctly applies and shows initiative to complete their schooling, and to correctly fill out the application form.

A few other items to note early this year are:

- **Leadership Symposium:** An adult from our District will be selected to attend and we can nominate one student from a school to attend. Get information to me with your recommendations as soon as you have someone in mind. The web site for applications is: [www.aws.org/events/detail/leadership-symposium](http://www.aws.org/events/detail/leadership-symposium).

- **AWS Welding Instructor Institute:** Applications should be submitted early for this and one instructor from our District will be selected to attend with air, hotel, meals, and transportation expenses paid. Apply at: [www.aws.org/events/detail/instructors-institute](http://www.aws.org/events/detail/instructors-institute).

- **Awards:** Start thinking about awards for outstanding members who have served our industry and the Society. Please forward recommendations and we can work together to get these individuals recognized. Awards are available for local Sections, District and National Awards. Information is available at: [www.aws.org/about/awards](http://www.aws.org/about/awards).

- **District Conference:** Mark your calendar for our annual meeting at Lansing Community College West Campus. DIFFERENT DAY: Monday May 20, 2019.

In closing, I am privileged to serve as your District Director and look forward to meeting each of you this year. If you have an opportunity for me to visit a school or a Section meeting, I am available and will travel on a mutually agreeable date. My email is: nwclc_ptemple@att.net and cell phone: 734-546-4298.
Holiday Party Recap

The AWS Detroit Section Holiday Party was held at Amnesia on the top floor of the Motor City Casino on December 15, 2018. Participants and sponsors were treated to a night of fun, food and dancing in Amnesia’s unique atmosphere with a Downtown Detroit skyline.

Editor’s Notes:

And, so another year has passed, but we are only in the midst of the AWS 2018-2109 Season! We have a lot more interesting, educational and fun events coming for you! Our monthly technical meetings will commence this month beginning on the 10th of January at Jepnootik in Rochester Hills, MI. In the months to come, we will celebrate awards night, raise scholarship and grant monies at our annual Ladies Night, ask for volunteers to give a hand or provide materials for the High School Welding Competition, and look forward to educational events which also provide credit hours for those of you who are in need of this.

We are being asked by more and more students and weld educators for internship opportunities to increase their skills and weld knowledge. If you or your company can help in taking on a student welder and/or student weld engineer, please contact Glenn Kay II so that he can help guide the process.

Please consider coming to a technical meeting! The meetings are open to members and non-members, and are a great opportunity for you to network and learn a little more about the industry. Students are always welcome to join us!

Until next month,
Keep on Welding!

Robin Michon
AWS Detroit Section
Ebulletin editor
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Bedford, Oh... Dengensha America recently added Cecil Boone as Service Engineer, increasing its customer service engineering support capabilities from its Bedford headquarters. As Dengensha’s newest Service Engineer, Boone will assist customers in the Midwest and parts of Canada on Dengensha’s complete line of resistance welding equipment. He is also being tasked to provide backup support assistance for Dengensha customers in the southern tier as well.

According to Don Grisez, Dengensha America COO, “With extensive experience in servicing manufacturing equipment and automobiles, and from both the electrical side as well as the mechanical side, Cecil Boone is already proving to be a perfect fit to support our growing list of resistance welding customers.”

Along with Boone’s extensive experience in servicing manufacturing equipment and automobiles from both the electrical side and from the mechanical side, Boone has thirteen years experience working at a local manufacturing plant in maintenance and as a CNC operator. Before that, Cecil repaired RVs and owned an auto repair shop. Cecil Boone currently resides in Euclid, Ohio. Dengensha America Corporation offers automotive, agricultural and general manufacturers the most complete line of resistance welding equipment in the world. Dengensha America’s resistance welding product line includes projection and spot-welding machines, weld guns, feeders, controls, consumables, and spare parts. Training and field service complete a single source capability.

For more information about Cecil Boone and his new Service Engineer position, contact:

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Q: “My company is relatively new to resistance spot welding and we are looking at efficiency improvements that would require running multiple part combinations on a single tool. With an eye towards minimizing potential changeover miscues we would like to utilize a single welding electrode for all of our spot welds, if possible. Unfortunately, after a review of the many electrode combinations that might work, we came away slightly concerned about the wide variety available. Are there any rules or guidelines that you could pass along to assist us?”

A: “In our previous column (ATWE Nov-18) we introduced the idea that resistance welding electrodes were specialized consumables that had the dual role of transmitting both the required force and needed secondary current to the parts being joined. With the aforementioned functionality as background, this column will further the discussion into the actual physical circumstances we subject our electrodes to.

From our earlier summary of electrode functionality, it might be construed that the electrodes do the majority of the work in a resistive welding process and, in a certain sense, this is true. From my perspective, what is really brought out by this line of reasoning is the need for care in the design, selection, and maintenance of electrodes when satisfactory welds are desired. However, it does not mean that unsatisfactory welds are indicative of faulty electrodes. The best electrodes obtainable have little hope of producing quality welds unless the machine they are attached to is furnishing the correct welding current, weld time and force under proper control to a well-designed and fixture part.

To answer your question regarding electrode selection and whether or not it is possible for one-size to fit all, we will start by discussing the basic elements that affect every weld; current, time and force. As you did not detail the specifics of the substrates involved, all further discussions will be generic in nature but should provide enough information on the selection of resistance spot welding electrodes to reach the correct conclusion for your particular application.

Weld Force: The force required for a particular weld influences many aspects of electrode design and construction, particularly the electrode taper size, body diameter and cooling cavity to contact face distance. As previously discussed, the electrode must be able to withstand the repeated application of the required weld force. This is no easy task when one considers that many resistance spot welds are made between 500-1700 pounds. The majority of these electrode design requirements have been proven over time and subsequently incorporated as industry standards. Specifically, the AWS J1.3 / RWMA Bulletin 16 / and ISO-5821 may be referenced as to the recommended or standardized designs for a particular application. The electrode design constraints mandated by force are a critical area where a compromise in the electrode selection process may occur. For example, if one application requires a higher weld force than another the electrode selected must be capable of withstanding the greater force condition.

Weld Current and/or Weld Time: The secondary welding current and time required to achieve a spot weld are rarely, ever, considered when selecting an electrode. The primary reason for this is that the vast majority of spot-welding electrodes are sized based on the substrate gauges to be joined, and are cooled in some fashion, thus rendering them with excellent electrical thermal capacities. This results in the required weld force being a much larger factor in electrode design selection than either current or time. That being said, we cannot emphasize enough the need for a well-designed and maintained water cooling system, utilizing properly installed cooling plumbing (tubes, etc.) for each electrode. A failure in this regard renders all other efforts mute with regards to electrode performance.

As noted above there are several more broad areas of concern related to the proper selection of resistance welding electrodes that we will need to address (e.g. electrode materials, face geometry, physical construction, etc.), and we will do so in future columns.”

If you have more questions about this topic, contact Don Maatz at:

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*The AWS J1.3 will replace the RWMA Bulletin 16 when published. As of Dec-18, the AWS J1.3 was in the review process, with an estimated release date of early 2019.

References:
2) AWS J1.3 / RWMA Bulletin 16
3) ISO-5821

Upcoming Events

January 10, 2019
AWS Detroit Section Tech Night
Jenoptik, Rochester Hills, MI

January 12-17, 2019
North American International Auto Show
Cobo Hall, Detroit MI

February 1, 2019
AWS Foundation Welder Workforce Grants
Online registration begins!

February 8, 2019
AWS Detroit Section Tech Night
Legacy, Auburn Hills, MI