

e Bulletin

JANUARY 2023 Inside This Issue

- 1 POST HOLIDAY PARTY January 14, 2023 6 - 9PM, Jolly Pumpkin, Royal Oak
- 2 CHAIRMAN'S MESSAGE
- 2 JEFFRY HILL CELEBRATION OF LIFE INVITATION
- 3 2022-23 PATRONS
- 3 EXECUTIVE COMMITTEE CHAIRS
- 5 ASK THE WELDING ENGINEER
- **6 JANUARY HOTLINE**
- 6 THANK YOU...FROM ALEX TEED
- 6 THANK YOU...FROM JONATHAN THREET
- 7 THANK YOU... FROM THOMAS TOMPKINS, JR
- 7 OUR MISSION
- 8 NONDESTRUCTIVE TESTING REGIONAL EDUCATION PROGRAM
- 8 SOCIAL MEDIA UPDATE
- 10 IN LOVING MEMORY OF JEFFRY HILL
- 12 WELDING SCHOLARSHIP
 APPLICATIONS NOW BEING
 ACCEPTED
- 13 THANK YOU...FROM JEFFERY WALDSCHMIDT
- 14 REFLECTING ON DAYS GONE BY...

Check out the latest videos published by the American Welding Society on its YouTube page.

AWS Technical Nights are open to everyone! We encourage that members bring students and nonmembers to learn more about our organization and industry.





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Chairman's Message Mark D. Gugel

On behalf of the Detroit Section of AWS, I would like to wish all of you a happy and prosperous New Year.

This year we look forward to even more in-person AWS-Detroit section technical meetings. Attending our Detroit section meetings and events is a great opportunity to meet our fellow welders, inspectors, engineers, salespeople, manufactures, and many more. Just meeting our fellow members provides us a great opportunity to open doors for new opportunities, to help support each other's businesses, and to truly advance the science, technology, and application of welding and allied joining and cutting processes. I personally look forward to meeting all of us at our monthly meetings and events.

This month, we look forward to celebrating at this season's holiday party on January 14 at the Jolly Pumpkin in Royal Oak. Erin and her team have put together a great party. Please click on events on the AWS Detroit-Section web page. Kristi and I look forward to taking part. Next month we look forward to the AWS-ASM Nondestructive Testing Regional Education Program on Saturday, February 25 at United Technical. United Technical is inviting members form the AWS Detroit section and all of our neighboring sections as well as ASM. This is a great opportunity to learn about non-destructive testing.

On a more somber note, we have recently learned that Jeffry Hill has passed on prior to Thanksgiving. Jeff has been a very active member of the AWS-Detroit section technical committee for the past two decades. He is personally responsible for creating the position of education liaison for the section. Over the years Jeff has worked with several schools in the area to improve their welding programs. In Jeff's own

words, "I am committed to getting into the high schools and getting our future welders the tools needed to succeed in the efforts to improve on their skills and achieve their goals in the welding industry." His patience and kindness to everyone will be greatly missed. Jeff's family has planned a Celebration of Life event for Jeff on Friday, January 13. Please see the invitation below

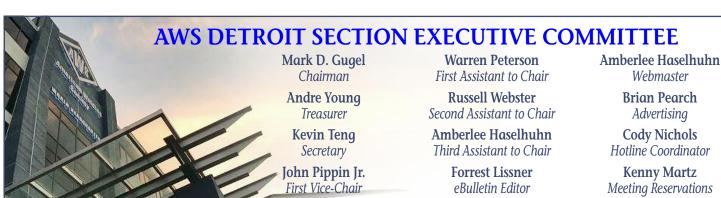
and his obituary on page 10. The family is asking for those planning to attend to kindly RSVP. Text: (269) 910-4249, or **Click here**.

Best Regards/mit freundlichen Grüßen, Mark D. Gugel, P.E., Ph.D.

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Ask the Welding Engineer

By Donald F. Maatz, Jr.

"Is it possible to re-weld a weld nut (in our case a M10 Hex) after it has been welded once?"

"In our previous column (ATWE Dec-22), we talked about two (2) potential methods of repairing or reprocessing projection weld nuts after there had been an initial effort to attach them to a part. The idea was also put forth that any attempt at just 'rewelding' was not an acceptable approach. However, I did also hint at some mythical 3rd option. This column will discuss the viability of this approach (and hopefully) dissuade those on the floor from utilizing this methodology.

With the aforementioned in mind, what if you were to put a loaded gun to my head and say 'make the re-weld idea work.' The only option would be to greatly increase the weld time at the highest current the equipment can achieve. This approach is an attempt to get the whole face of the nut to stick to the base material, with 'stick' being the operative word (more on this later).

However, if the idea of this approach is so bad, why do I even mention it? The reason is simple: Some folks have no choice but to use a variation of this tactic every day when they are making a PW. The reason – being constrained with undersized equipment. For the record, this methodology has a whole host of potential issues associated with it, to include:

- Exceeding the electrical thermal limits (both primary and secondary) due to the required longer weld time near the equipment's maximum output value (See ATWE Jan-16)
- Inconsistent weld quality as determined by push-off force*
- Damaging the threads as the weld nut deforms due to the softening brought on by heating it (think the *entire* weld nut glowing cherry red) while under full weld force**
- Altering the base metal properties due to the large HAZ generated as a result of the aforementioned long weld time schedule***

As detailed earlier, this long weld time approach is contrary to what is typically associated with a robust PW process. And I would be lying if I said I have never used it. That being said, it is very much a last resort. To help avoid this unfortunate scheduling methodology, in future columns, we will take a look at various other elements of the PW process to identify where the pitfalls exist and improvements can be made.

*Since the projections associated with the already processed weld nut are physically altered, the only hope one has of 'making a weld' in this circumstance is to attempt to achieve fusion between the faying surface defined by the entire bottom surface of the weld nut to the base material. In a few words, good luck. The reason I say this is the difference in contact area between the projections (even at their base) versus the bottom surface of the weld nut is enormous—Maybe on the order of a factor of 10 (or more). I have never heard of any projection welding machine capable of being able to increase its secondary current to maintain the needed amps per unit area by this order of magnitude (think welding with 19 kA, and then being able to dial up 190 kA on the same machine). It is with all of these aforementioned reasons, and many others, that lead me to state that the best one can hope for is to make the nut 'stick' to the base metal with just enough localized heating to pass a push-off test. As stated earlier, not a very robust method of joining parts together.

**Facilities welding with the long weld time 'make it glow' methodology will also have a roll threading operation at the end of the line to ensure the threads are intact when the parts finally ship to the customer. While this sounds excessive, many suppliers of PW nut assemblies to the OEMs already have a roll threading operation as part of their day-to-day operations. The reason—it is cheaper to pay someone to re-thread each nut inside their facility rather than risk damaged threads (think deformation, slag, etc.) making it to the assembly plant and enduring the subsequent and significant pain of a Quality Reject/Spill.

***There has been anecdotal evidence the large HAZ associated with a PW using a long weld time may weaken the base metal of certain grades of AHSS. One possible solution to this issue is the use of a transition plate of Mild or HSLA steel. The weld nut is attached to the plate, and the plate is subsequently spot-welded to the AHSS. For completeness, there are now techniques available to the industry to help make most of these very difficult projection nut welds, and this will be the topic of a future column"

References:

- 1) Resistance Welding Manual, revised 4th Edition
- 2) AWS C1.1M/C1.1:2019, Recommended Practices for Resistance Welding

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

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Donald F. Maatz, Jr. is with R&E Engineering Services and serves in the capacity of Laboratory Manager. He is past-chairman of the AWS-Detroit Section, serves on the D8, D8D and D8.9 Automotive Welding Committees, is an advisor to the C1 Resistance Welding Committee, is an AWS endorsed CWI and vice-chairman of the Certified Resistance Welding Technician working group, and an instructor for the RWMA School. He is a graduate of Ohio State with a BS in Welding Engineering.



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January Hotline

AWS Detroit has discontinued awsdetroit.org

AWS Detroit can **no longer** be accessed via awsdetroit.org. The long used landing page for members and guests has been deemed obsolete, and has now been discontinued. A simple search for AWS Detroit will now land you on our established home page provided by AWS National at https://awssection.com/detroit/

AWS 2023 CWI seminar and exam dates are now available

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Network with leading experts, pave the way for the future of welding, and provide professional expertise, authority, and stability to the welding industry by joining an AWS Technical Committee. With more than 1,500 volunteers and 200 AWS technical committees, subcommittees, and task groups dedicated to developing consensus standards, there is an opportunity for everyone to contribute.

Thank You AMERICAN WELDING SOCIETY



Alex Teed
Allen Park, MI
Ferris State University
Welding Engineering Technology
Detroit Section Scholarships
District 11 - 011-Detroit

Dear Detroit Section Committee,

Thank you so much for selecting me for a district scholarship. It is such an honor to be selected for this scholarship. Over the past few years, I have experienced first hand what a great organization the AWS is. I look forward to being an active member after I complete my education. I am thankful for what the AWS does in supporting students like me, and appreciate active members like yourselves that help make it possible. This scholarship will help me as I continue my education in the field of welding.

Thank you, Alex Teed



Jonathan Threet Midland, MI Ferris State University Welding Engineering Detroit Section Scholarships District 11 - 011-Detroit

To those involved with awarding the Detroit Section Scholarships, I wish to thank you all for awarding me with this scholarship. It means a lot to me, that out of all the applicants, I was fortunate enough to have been awarded. This money will help me afford to continue my education into Welding Engineering, and someday I hope to be in a position so that I may lend my aid to those starting the same journey. With current events the way they are, I have been worrying about a lot of things, but now, thanks to you, I have one less thing to worry about. Thank you all for doing what you do, it means more than you know. With great thanks, Jonathan Threet

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Thomas Tompkins JR Monroe, MI Ferris State University Welding Engineering Technology Detroit Section Scholarships District 11 - 011-Detroit



Dear AWS Scholarship Board,

Thank you for selecting me to receive a \$1000 Detroit section scholarship (District/Section: 11-051-West Michigan). This is the first scholarship that I have received and I am extremely grateful. I am a Welding Engineering Technology student at Ferris State University. I plan to pursue a career within the automotive welding and manufacturing industry. I am going into my final of 5 years in university. After completing this final year, I will be leaving school to pursue my career and life goals. Thanks to you, I can complete this year with less time spent working. I am truly grateful for the scholarship support. This scholarship allows me to work fewer hours and focus on my studies and networking opportunites. Sincerely, Thomas Tompkins Jr

Our Mission is to advance the science, technology and application of welding and allied joining and cutting processes worldwide, including brazing, soldering and thermal spraying. AWS Detroit provides support for the industry in many ways, including:

- Institutional Grants (endowment based);
- Scholarships through Application (endowment based);
- Scholarships through aptitude (HSWC);
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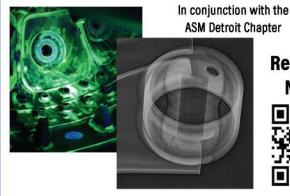
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Social Media Update

If anyone has anything they would like posted to Facebook and/or LinkedIn please send it to Christian Megna: christian.a.megna@gmail.com

Linked in As of 12/20/22, during the past 30 days LinkedIn page has had:

- 2,627 total members
- 1 new post
- 35 active members
- 140 post views

- o 2 new members



As of 8/17, during the past 28 days Facebook page has had:

- 0 posts
- 8 new page likes
- 74 page views
- Posts reached 3,300 people
- 202 people engaged with posts
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- 9,297page followers

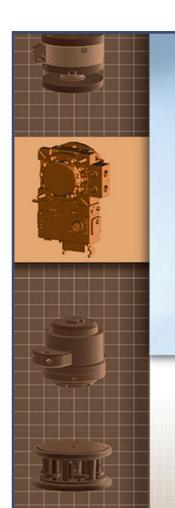


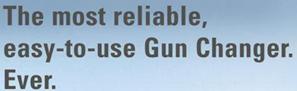
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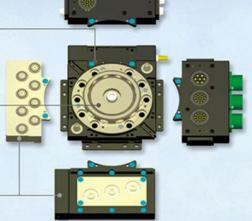
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Jeffry Hill had a passion for Welder Training in Detroit

AWS Detroit Executive Board member Jeffry Hill, a passionate welding professional and friend to many in the resistance welding field, passed away on November 25, 2022 at the age of 63. Born in Detroit, Michigan, Jeff began his career at Savair Inc. in 1987 working mostly in field service and eventually became their service team leader and product training coordinator. During this time Savair was acquired and became ARO Welding Technologies.

Jeff was elected to the AWS-Detroit executive board in 2009 and requested the Education Chair position. He created and led a new student outreach program with the objective of helping schools in our community become aware of the information and resources that AWS and our Section have to offer. When running for his second term he wrote, "I am committed to getting into the high schools and getting our future welders the tools needed to improve on their skills and achieve their goals in the welding industry." Golightly Career and Technical Center is the best example of Jeff's outreach program. He chaired Golightly's Industrial Advisory Committee, supported their welder training program, and helped start the first and

only AWS student section in the City of Detroit. Another lasting contribution was to the Sheet Metal Welding Conference tutorial where in 2012 Jeff insisted it include hands-on demonstration stations where "participants could translate what they learned into actual welds." Because of the huge success, the next several SMWC tutorials would model the format.

We appreciate the many contributions Jeff made to our AWS section and community. We will miss Jeff's friendship and seeing him at our section events including hearing him play drums with his band.

Jeff is survived by two adult daughters that he raised as a single father and friend Yolanda Cowan.

A memorial service is planned for Jeff on Friday, January 13. The family is asking for those planning to attend to kindly RSVP. Text Savannah (269) 910-4249, or Click here.













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An on-line application form (with supplemental instructions) is now available on the AWS Detroit Section website, under the 'Scholarships' tab.

Click Here.

Application deadline for the 2023-24 academic year is April 1, 2023.*



For 2022/23 the section was able to award 40 scholarships totaling \$61,000 to students from 5 different schools.

*Please reach out directly if you have a paper application to send in (dmaatz@reautomated.com)



Jeffery Waldschmidt
Big Rapids, MI
Ferris State University
Welding Engineering Technology Detroit Section Scholarships District 11 - 011-Detroit

I'd like to thank you for your contribution to my education through the AWS Detroit Section Scholarship. As you're aware, the cost of attaining a degree has never been higher and I'm honored that I was chosen to receive such a gracious gift to help offset those rising costs.

For a little background on me, I'm an incoming Senior in the Welding Engineering Technology program at Ferris State University. I started my academic journey at Ferris State back in 2014 when I attended my Freshman year. Following the completion of that year, life took me on a bit of a scenic route. The fall of 2015 was a difficult one for me, and I failed out. I became a homeowner here in Big Rapids and decided to work on a few of my personal issues to be a more dedicated student. I became a restaurant manager at a local chain and worked my way up to be a Regional Bar Director. Simultaneously I used some of my employee benefits to get a sleep study done and was diagnosed with severe Sleep Apnea which I now wear a CPAP machine nightly to treat - which has changed my life. Due to a combination of events and driven by my former student advisor – Professor Murray – I decided to investigate coming back to Ferris State and finish what I had started around March of 2019. Upon seeing the newly upgraded facilities, I was sold. I stepped down from my restaurant manager position and became a full-time student again. I'm proud to report my return was an overwhelming success. I received my Associates Degree which was achieved with 2 straight semesters on the Dean's List despite the challenges posed by COVID-19. I finally achieved the success that alluded me years ago. These past couple of years I have tried to be extremely active in the American Welding Society Student Chapter, participating in everything from our roadside cleanup to the river walk cleanup downtown. Giving back to the community around me has always been important – I'm an Eagle Scout and long-time Optimist International member and have given many hundreds of hours throughout my life to improving the world around me through community service whenever possible.

Your gracious gift toward my education will enable me to continue my studies and remain focused on school without having to worry quite so much about how to make the numbers work financially. It's my intention to plug ahead and graduate in May 2022 and pursue a career in the welding field. I have accepted an internship with Miller Electric for the summer of 2021 as a Welding Sales Application Engineer, and my hope is to continue a career path with them after graduation, though I keep an open mind to any and all opportunities. Your gift makes that much more attainable without overwhelming debt or stress.

Thank you again, Jeff Waldschmidt



Reflecting On Days Gone By...

January 1987













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Questions? Contact: Brad Rillema, Detroit District Sales Manager Phone: 248-200-9266 | Email: Bradley_Rillema@lincolnelectric.com

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