

Power Up Your Participation

MPT Expo 2023 offers plethora of training and networking opportunities

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MOTION + POWER
TECHNOLOGY EXPO

October 17–19, 2023 | Detroit, MI

The Motion + Power Technology (MPT) Expo is a three-day show that's designed for the gear and power transmission industry, representing the entire community of professionals involved in the life of a gear, gearbox or other power transmission device—from design to manufacturing, testing, heat treating and more. You can find the suppliers of the equipment to make gears as well as gear and gear drive manufacturers themselves, along with related suppliers of things like software, tooling, lubrication, bearings and more.

Not only is MPT Expo a trade show representing the complete power

transmission supply chain, but it's also an educational and networking event that seems to grow in its offerings with every iteration.

The show takes place alongside AGMA's Fall Technical Meeting (October 16–18), where experts will present research on the latest technology in gear manufacturing. MPT Expo also runs concurrently with the ASM Heat Treat and IMAT shows.

On the show floor itself, you'll have plenty of opportunities to learn and interact with gear-industry colleagues, including live podcasts, exhibitor demonstrations and our own "Ask the Expert" panel discussions in booth #3136.

2023 Ask the Expert Topics

- The Future of Gear Manufacturing (Tuesday 10/17 at 10:30 am)
- Manufacturing Gears for Electric Vehicles (Tuesday 10/17 at 2:30 pm)
- Automation for Job Shops (Wednesday 10/18 at 10:30 am)
- Solving the Skilled Workforce Challenge (Wednesday 10/18 at 2:30 pm)

Panelists for the "Ask the Expert" sessions will be announced soon! In addition, on the same stage in Booth #3136, our editors will be conducting live interviews with many of the exhibitors and other specialists who will be at the show, highlighting the latest technology and solutions for our industry.



Networking Events

FTM Networking Reception

Monday, October 16, 6:00 pm–8:00 pm
\$85. Join attendees from the Fall Technical Meeting (FTM) for a fun networking reception at The Yard in Corktown! The reception is included in your registration for Full FTM attendees, but tickets are available for single session passholders and other MPT Expo attendees interested in fun, games, food, and drinks. The reception includes dinner and fun activities including axe throwing, board games, shuffleboard, fire pits, and cornhole. The reception is included in your registration for Full FTM attendees, but the reception is open to anyone interested in joining the fun!

Women in Manufacturing and Engineering Breakfast

Tuesday, October 17, 7:00 am–9:00 am
\$50. AGMA and ASM are pleased to invite all women at MPT Expo to a networking breakfast where there will be a panel of industry experts sharing experiences and advice about how to become leaders in your field and how to avoid complacency in the workforce to advocate for your own career. Join others from all sectors of manufacturing and engineering, from new employees to high-level executives, to build new relationships, grow your network, and innovate for the future. Who should attend: All women exhibiting or attending MPT Expo, the Heat Treat Conference & Exposition, or IMAT events who want to network and be inspired!

Opening Night Welcome Reception

Tuesday, October 17, 5:00 pm–6:00 pm.
FREE to all attendees. Join exhibitors and fellow attendees on the show floor for the Opening Night Welcome

Educational Opportunities

See the website at motionpowerexpo.com/education-courses/ for information on pricing.

Reception. Your expo pass includes two drink tickets, and hors d'oeuvres will be served. Come meet exhibitors, network with your peers, and meet new friends as we kick off MPT Expo!

Wednesday Networking Reception

Wednesday, October 18, 7:00 pm–10:00 pm

\$100. Take a night off from the trade-show floor to unwind and network with industry professionals! Meet up with old friends or enjoy the open bar with new prospects. Enjoy local fare and drinks and get ready for an evening of fun and entertainment. More details regarding this event will be posted soon! Who should attend: All those attending or exhibiting at MPT Expo, the Heat Treat Conference & Exposition, or IMAT events.

AGMA Electric Vehicle Technology Town Hall

Thursday, October 19, 8:00 am–10:00 am

Free. For more than 100 years, AGMA has led discussions in standards development for the gear industry. From streetcars to wind turbine technology, AGMA has been the facilitator-in-chief bringing together stakeholders to discuss, brainstorm, share, and collaborate in the development of standards that are utilized by entire industries across the globe.

Electric vehicle technology is emerging as a mainstream technology, and to keep within its traditional role as the facilitator-in-chief, it is time for AGMA to gather experts and begin discussion on standards for this space.

The two-hour town hall style meeting will include a discussion on what current AGMA documents are available for use in the EV space. Next, attendees will be invited to share their thoughts on current state of the EV sector including areas and topics where AGMA could step in to support the gear industry. Drawing on its 100+ year experience, the goal of this event is for AGMA to gather the experts around a table to discuss outstanding issues identified by consensus and collaborate on consensus based, mutually beneficial solutions as it relates to the EV sector. Come be a part of the discussion!

This meeting is open to all interested from the gearing industry, specifically those involved in the electrical vehicle space. Participants should expect, and be ready and willing, to collaborate and share knowledge.

Basics of Gearing. Tuesday, October 17, and Wednesday, October 18, 8:00 am–5:00 pm. Instructor: William Mark McVea, KBE+, Inc. Dramatically improve your knowledge and productivity through Basics of Gearing. This course will be presented in a two-day format and will give you a comprehensive overview of standard gearing nomenclature, gear involute geometry, inspection procedures, and much more.

Integration and Trade-Offs in Gear and Bearing Systems. Tuesday, October 17, 8:00 am–5:00 pm, and Wednesday, October 18, 8:00 am–noon. Instructor: Michael Berhan, Ford Motor Company. The purpose will be to cover the concurrent design and analyses of gears and bearings in integrated systems like gearboxes, transmissions, and electric motor drives, so as to allow for good integration and faster optimization of the overall system. This will help gear engineers and suppliers better determine the trade-offs with the bearings, help bearing engineers and suppliers similarly with the gears, and system engineers better understand both. The examples covered are generic but should be useful both within and across industries that use these components and systems.

Reverse Engineering: Why, When, and How—Avoiding Pitfalls and Litigation. Tuesday, October 17, 8:00 am–5:00 pm. Instructor: Raymond Drago, P.E. Reverse engineering a gear system is a not too unusual task and in many, but not all, cases the process goes fairly well, thus it is easy to become complacent. It is important, however, to fully understand the process and the best practice procedure for reverse engineering a gear system. This course will review the basic types of reverse engineering projects. The need for understanding the operation of the system in which the gears will be used, the conditions that led to the need for the project and especially, the specific nature of the failure that occurred, if that is the reason for the project, are key, often ignored, elements of the process.

Why Bearings are Damaged. Wednesday, October 18, 1:00–5:00 pm. Instructor: ABMA. The American Bearing Manufacturers Association is offering this course on rolling element bearings for those involved in industrial equipment design, reliability, and maintenance. It will include a basic overview of rolling bearings, their selection, precision and mounting considerations, service life estimation, and lubrication-related influences. A hands-on damage analysis session will be the featured portion of this program.

Involute Spline Design and Rating. Wednesday, October 18, 8:00 am–5:00 pm. Instructor: Raymond Drago, P.E. This course will address both geometry and rating of involute splines of various types. Types of spline joints and their applications are discussed. Spline configuration variations including half depth and full depth and special function designs will be addressed. Both fixed and flexible spline configurations are treated in terms of usage and design. Lubrication methods, including grease, oil bath and flowing oil as well as coatings appropriate for various spline applications are discussed. Shear and compressive stress rating methods are discussed with analyses methodology presented in both equation and graphical methodology via various rating charts.

Modern Automated Gear Quality Assessment Technology. Thursday, October 19, 8:00 am–5:00 pm. Instructor: William Mark McVea, KBE+, Inc. This course is intended to provide you with a thorough understanding of the information contained within a typical gear inspection report. Specifically, we will look at the contents and meaning of the information contained within the gear charts, as well as the techniques used by the gear measurement system to assess gear quality. An explanation of basic gear measurement techniques, how measurement equipment and test machines implement these techniques, and how to interpret the results from these basic measurements will be covered. We will also discuss how to interpret the results and what corrective actions may be considered if the quality of a particular gear is unsatisfactory.

Materials Selection and Heat Treatment of Gears. Thursday, October 19, 8:00 am–5:00 pm. Instructors: AGMA and ASM International. Because of their unique contribution to the operation of so many machines and mechanical devices, gears have received special attention from the technical community for more than two millennia. New developments in gear technology, particularly from the materials and heat treatment perspectives, have improved gear performance. This course, developed jointly by AGMA and ASM International, will provide an overview of materials selection and heat treatment of gears. Topics covered include: Gear material selection, heat treatment, material hardenability, allow steel selection, gear failure concerns, manufacturing considerations, material form, cast iron, powdered metal, bronze and brass, and plastics.