



Course:

A Study of Heat Treating Methods and Dealing with Distortion

Featuring: Carburizing, Hardening/Quenching • Die Quenching and Straightening

Vacuum Carburizing and Quenching • Nitriding

Induction (Simultaneous Dual Frequency) Hardening

The intensive 2-day course, presented by Arvin Global Solutions (AGS), is designed to provide attendees with a wide range of information for more fully understanding a variety of heat treat methods and how to minimize the impact of distortion during the manufacturing process.

In this course, topics will include,

- **Examination and Evaluation of Available Methods for Heat Treating, including**
 - Carburizing, Hardening/Quenching
 - Die Quenching and Straightening
 - Vacuum Carburizing and Quenching
 - Nitriding
 - Induction (Simultaneous Dual Frequency) Hardening
- Metallurgical Overview of the Heat Treating Process
- Anticipating When Heat Treat Distortion Can Occur
- Methods for Minimizing Distortion During Heat Treatment
- Methods for Correcting Distortion during Post-Heat Treatment Operations
- And much more!



The AGS Team of Industry Experts will address a wide range of information on heat treating processes and methods for minimizing and managing heat treat distortion.

Who Should Attend

Encompassing Commerical, Automotive and Aerospace manufacturing, The ideal attendees will include,

- Design and Manufacturing Engineers
- Upper and Middle Managers Responsible for Production
- Quality and Heat Treat Personnel

Attendees should have a general base knowledge of heat treating principles.

The AGS Heat Treat Challenge

Do you have a part that's difficult to successfully heat treat?

Submit your part's blueprint
(with identifying information removed)
for evaluation during the seminar and have it reviewed by our technical experts.
Call Joe Arvin at 815-600-2633 for details.

Training Benefits

In manufacturing, a broad knowledge of the available heat treat methods is critical for being competitive. And applying this knowledge to produce top quality, and minimizing the impact of heat treat distortion, can save your company the headaches of late deliveries and the wasted profit lost to scrap and rework.

Register Now for the Upcoming Session

Call 800-815-2303 or register online at www.ArvinGlobalSolutions.com

Dates and Times:
January 16 & 17, 2018
7:30 AM to 5:00 PM (Daily)

Location:
Northern Illinois University
Naperville Conference Center
1120 E Diehl Rd #150
Naperville, IL 60563
www.niunaperville.niu.edu
630-577-9101

Cost:
2-Day Seminar
(including breakfast and lunch)
\$1,275

Hotel Accommodations:
Hampton Inn Chicago/Naperville
Across the street from the Conference Center
1087 East Diehl Rd., Naperville
630-505-1400
Mention the AGS Heat Treat Seminar for
Reduced Rates

About the Instructors

The AGS Seminar on Heat Treating features industry experts for providing valuable insights into a full range of methods and operations critical to successful heat treatment in manufacturing.



Arvid Casler

NorthStar Aerospace - Metallurgist

Overview:

Frost & Sullivan and Presidential Service Award recipient - 2016

Affiliations - Currently serves on ASTM E28 committee, as a founding member of the Rockford-Stateline Chapter of ASNT, and several committees of ASM International while a current member of NACE, AIME/TMS, STLE and SAE.

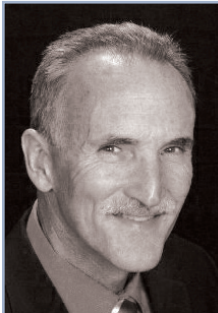


Christian Krause, Dr.-Ing.

ELDEC Corporation (Germany) - Head of R&D Application Engineering

Overview:

*Leibniz University of Hanover - Studied mechanical engineering and worked 4 years at the University in the Institute of Material Science - finishing with a PhD
German Consortium for Heat Treatment and Materials Engineering - Director of the Expert Committee "Thermal Surface Layer Technologies"*



Matt Mondek

Mondek Solutions - President

Overview:

*Reliance Gear Corporation - President/CEO
American Gear Manufacturers Association (AGMA) - Chairman of the Board
Cotta Transmission, LLC - President
Outboard Marine Corporation - Director, Management and Engineering Positions*



Frederick Otto

Midwest Thermal Vac, Inc. - President and Founder

Overview:

*Poclair Hydraulics USA - Corporate Metallurgist
Private Metallurgical Consultant
Metal-Lab, Inc. - Vacuum/Plasma Ion Specialist*

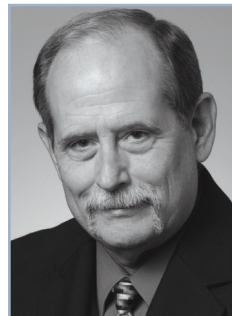


Al Swiglo

NIU College of Engineering & Engineering Technology and IIT Alion Science and Technology - Associate Director of Manufacturing Processes Research (ret.)

Overview:

*ASM International - 2011 Fellow Award
AGMA - Metallurgy Committee Member
Brad Foote Gear Works - Director of Metallurgy*



Michael Reichling

Cincinnati Steel Treating - Vice President of Operations

Overview:

*ASM International / Heat Treat Society - Member
Heat Treat Society Education Committee (national) - Member
Heat Treat Education Committee (national) - Past Chairman
Recipient of prestigious Metal Treating Institute Industry Award of Merit*

About the AGS Manufacturing Training Series

One of the most pressing challenges facing American manufacturing today is the shortage of skilled people for any number of critical roles. While strides are being made to prepare young people for vocations in manufacturing, the fact that a significant amount of expertise will be leaving the workforce as Baby Boomers retire, threatens the collective expertise of this critical sector of our economy.



Joseph L. Arvin
President and CEO
Arvin Global Solutions

For this reason, Arvin Global Solutions (AGS) is dedicating our efforts to develop and facilitate training opportunities with the primary goal of transferring the knowledge of today's manufacturing experts to the next generation.

Ongoing Extra-Academic training will continue to be a critical need in industry, and meeting this need is the overall objective of the AGS Manufacturing Training Series.



Melvin Ty Cooper

Cincinnati Steel Treating - Manager, Manufacturing Engineering Dept.

Overview:

*Cincinnati Steel Treating - Shop Superintendent, Methods/Process Engineer
Cincinnati Machine - Heat Treat Specialist
Plexus Corporation - RABQSA-Certified ISO 9001:2000 Associate Auditor Training with ISO/TS 16949 Automotive Emphases*



Kevin Walsh

Overton Chicago Gear - VP Operations (ret.)

Previously:

General Manager, Engineering Manager, Quality Manager, Plant Manager, Department Manager

A Study of Heat Treating Methods and Dealing with Distortion

About the Seminar

The upcoming seminar, taking place on January 16 & 17, 2018, will be held at the Northern Illinois University - Naperville Conference Center at 1120 E Diehl Rd #150 Naperville, Illinois.



Scope of the Seminar

The seminar will be segmented into these main topic areas.

- 1) Examination and Evaluation of Available Methods for Heat Treating
The following heat treating methods will be explained and their effect on heat treat distortion will be compared and contrasted.
 - Carburizing, Hardening/Quenching
 - Die Quenching and Straightening
 - Vacuum Carburizing and Quenching
 - Nitriding
 - Induction (Simultaneous Dual Frequency) Hardening
- 2) Overview of the Heat Treating Process
 - Introductory discussion of the various processes typically used in heat treating
 - Understanding the metallurgical goals of heat treating
 - Discussion on the physical changes to metal parts during heat treating
 - Overview of the specific causes of distortion
- 3) Anticipating When Heat Treat Distortion Can Occur
 - Study of various part designs and identifying areas that are susceptible to distortion
 - Study of the various types of heat treat distortion that can occur
 - The importance of accounting for heat treatment distortion in the manufacturing process operations
 - The importance of pre and post heat treatment inspections to document distortion - and what to measure
 - Special considerations for aerospace parts
 - Special considerations for large parts over 100 inches in diameter
- 4) Methods for Minimizing Distortion During Heat Treatment
 - The use of fixtures
 - The use of Die Quenching and guidelines for tooling design
- 5) Methods for Correcting Distortion during Post-Heat Treatment Operations
 - Straightening
 - Moving Centers
 - Controlling Length Movement
 - Tilting Axes to Balance Stock Removal

The AGS
Manufacturing Training
Series



Manufacturing Excellence for the World Market

www.ArvinGlobalSolutions.com

1808 Ogden Ave, Lisle, IL 60532
(800) 815-2303

Contact@ArvinGlobalSolutions.com

Course:
A Study of Heat Treating Methods and Dealing with Distortion

General Information about the Seminar

Thank you for your interest in the AGS training seminar. The following information is provided as reference to issues pertaining to the event.

Dates and Times

- Tuesday - January 16 (7:30 AM to 5:00 PM)
- Wednesday - January 17 (7:30 AM to 5:00 PM)

Location

The seminar is being held at the Northern Illinois University - Naperville Conference Center at 1120 E Diehl Rd #150, Naperville, IL 60563. Their phone number is (630) 577-9101. There is plenty of parking in the rear of the building. Upon arrival, please see the reception desk for directions to the meeting room.

Fees

The fee for a single attendee is \$1,275. If you are registering more than one person using the online system, each additional registrant will receive a 10% discount. The address for the online registration is <https://arvinglobal.regfox.com/heat-treat-seminar>.

Meals

Breakfast and Lunch will be served at the seminar each day. For dinner, there are a variety of restaurants in the area and are within a short cab/Uber ride.

Hotel

For seminar attendees who are traveling, we have reserved a block of rooms at the Hampton Inn Chicago-Naperville, which is located at 1087 E Diehl Rd, Naperville, IL 60563, and is across the street from the NIU-Naperville Conference Center. To make your reservation, please call (630) 505-1400 and be sure to mention the AGS Heat Treating Seminar for the discounted rate.

Air Travel

Both Chicago O'Hare Airport and Midway Airport are suitable arrival and departure points for the Naperville location.

Assistance

If at any time during the seminar you have any questions or need assistance, please contact Joe Arvin at (815) 600-2633 or Scott Newton at (630) 234-4988.

Policies

Cancellation

If you need to cancel your registration, you can do so prior to Friday, January 12, 2018 without a cancellation fee. If you need to cancel after that date, and up to January 15, 2018 (the day before the seminar), you will be charged a \$200 fee, for non-refundable fees associated with the training facility. The balance will be refunded to the credit card used when you registered. On and after January 15, 2018, registration fees can not be refunded. To cancel your registration, please call Scott Newton at 630-234-4988.

If Arvin Global Solutions needs to cancel the Seminar due to any unforeseen circumstance beyond our control, our complete obligation to the registrant may be discharged in its entirety by our refund of your registration fees, without prejudice, and disclaiming any secondary consequences or costs that you may incur. Specifically, we can not refund travel or other costs associated with your planned visit for the Seminar. If the Seminar needs to be cancelled, Arvin Global Solutions will contact you as soon as possible using the information you supplied during the registration process.

Electronic Recording

Recording of still images or motion video of presenters and presentation materials during the seminar is not permitted.

Copyright

All materials presented and distributed to attendees of the Seminar are subject to copyright. Copy and/or transfer to a third party is only allowed upon written authorization by Arvin Global Solutions.

Image Usage

Registrant agrees to allow Arvin Global Solutions to use for our promotional or marketing purposes, without restriction, photographic or videographic material of the Seminar wherein their person, image or voice may appear. We will make good faith efforts to honor requests to be excluded from such materials which are received in writing.

Northern Illinois
University -
Naperville, Illinois
Facility

