

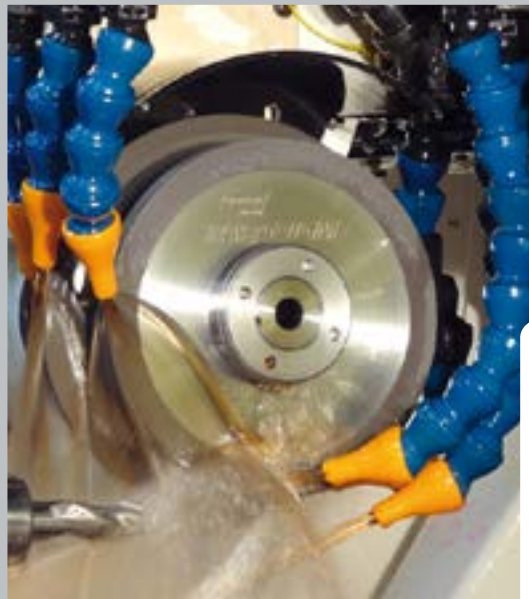
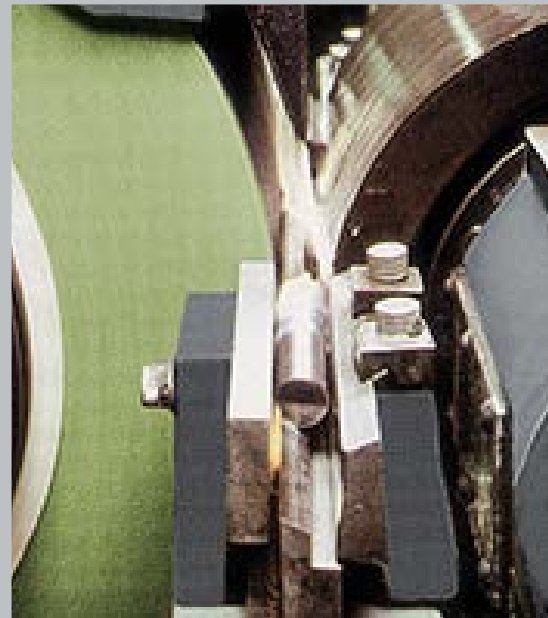
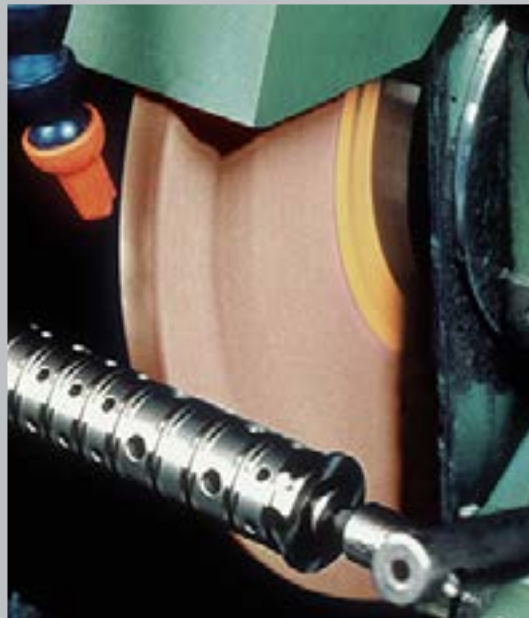
PRECISION CUSTOMER SEMINAR

**2020 SEMINAR
DATES:**

APRIL 14-17
JUNE 23-26
OCTOBER 6-9

WORCESTER AND
NORTHBOROUGH, MASSACHUSETTS

**GRINDING AND FINISHING
YOUR WAY TO SUCCESS**




SAINT-GOBAIN

PRECISION CUSTOMER SEMINAR SPONSORS

Corporate Application
Engineering and
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KEN SAUCIER

Manager, Application
Engineering - Precision
and Cutting Tool Markets

(508) 667-8640

JOE MIELINSKI

Manager, Sales Training

(508) 667-7955

BARBARA NICHOLS

Senior Training Specialist

(508) 795-5336

LEARNING OBJECTIVES

The objective of this seminar is to give our customers an in-depth look at the many facets of precision grinding, primarily with conventional vitrified and superabrasive products. Our intention is to enable the participant to get the most productivity out of their grinding process. To accomplish this, we will cover abrasive parameters from the basic to the advanced.

TIME REQUIRED

3-1/2 days

WHO SHOULD ATTEND

The curriculum is designed for engineering, plant and purchasing personnel as well as experienced lead operators who have a working knowledge of abrasives in production grinding.

AGENDA

TUESDAY, April 14, June 23 and October 6

- Grinding Theory and Bonded Abrasive Basics
- Plant Tours - Bonded Abrasives and Superabrasives Wheel Manufacturing
- Safety in Precision
- Superabrasive Basics (Diamond and cBN)
- Technical Approach to Grinding System
- Innovations in Grinding

WEDNESDAY, April 15, June 24 and October 7

- Factors Affecting Grinding
- Common Machine Issues
- Truing & Dressing Basics
- Plant Tours - Bonded Abrasives and Superabrasive Wheel Manufacturing (groups switch from Tuesday)
- Coolant Application
- Material Properties

THURSDAY, April 16, June 25 and October 8

- Breakout Sessions #1, #2 and #3 (refer to enrollment form and breakout topic descriptions)
- Ask the Expert Sessions and Norton-sponsored dinner at the Beechwood Hotel

FRIDAY, April 17, June 26 and October 9

(1/2 day)

- Breakout Sessions #4 and #5 (refer to enrollment form and breakout topic descriptions)
- Seminar Wrap-up

PRECISION CUSTOMER SEMINAR

KEY CONTACT

BARBARA NICHOLS

Senior Training Specialist
Saint-Gobain Abrasives, Inc.
barbara.e.nichols@saint-gobain.com
(508) 795-5336

EXPENSES

NORTON | SAINT-GOBAIN WILL PROVIDE

- Continental breakfast Tuesday, full breakfast Wednesday-Friday, and afternoon refreshments
- Lunches (no lunch on Friday)
- Dinner Thursday evening at the Beechwood Hotel
- Reference materials and product literature covering all topics discussed

CUSTOMER EXPENSES

- \$1,995/pp registration fee
- Transportation (air fare, car mileage, shared van service, car rental, taxi, etc.)
- Hotel (upon check-out)
- Meals on travel days and Tuesday and Wednesday dinners on own

ENROLLMENT/CONFIRMATION

Upon receipt of your enrollment form and registration fee, a confirmation letter will be sent to you.

Since enrollment is based on availability, please do not make your transportation and hotel reservations until you receive your confirmation letter.

Class size is limited to 36 participants. Registration is first come, first served. We reserve the right to substitute a presenter(s) without notice.

TRANSPORTATION

You are responsible for making your own air and ground transportation reservations. We will provide transportation to and from the hotel and seminar location each day except Friday.

HOTEL

You are responsible for making your own hotel reservations. We have reserved a block of rooms at the Beechwood Hotel in Worcester, MA at our VIP rate of \$135/night plus tax. You will receive further details in your confirmation letter.

CANCELLATION POLICY

You must cancel within 30 days for a refund.

PRECISION CUSTOMER SEMINAR ENROLLMENT FORM

**APRIL 14-17, JUNE 23-26, AND
OCTOBER 6-9, 2020**

Worcester and Northborough, Massachusetts

REGISTRATION FEE

\$1,995/ *Per Person*

Send form to:

Barbara Nichols

Senior Training Specialist

Saint-Gobain Abrasives, Inc.

1 New Bond St. - M/S 301-225, Worcester, MA 01615

Phone: **(508) 795-5336**

E-mail: **barbara.e.nichols@saint-gobain.com**

Choose One: **April 14-17** **June 23-26** **October 6-9**

charge: Visa Mastercard American Express OR **P.O. #:** _____

CARD NO. _____ EXPIRATION DATE _____

PRINT NAME AS IT APPEARS ON CARD _____

NAME _____ JOB TITLE _____

COMPANY _____

STREET _____ CITY _____ STATE _____ ZIP CODE _____

PHONE _____ EXT _____ E-MAIL ADDRESS _____

S M L XL 2XL 3XL

NORTON SALESPERSON _____ T-SHIRT SIZE (CHECK ABOVE) _____

NAME TAG PREFERENCE (EX.: JOE SMITH) _____

please list any dietary restrictions or food allergies.

BREAKOUT SESSIONS

Please choose your top five (5) topics out of the nine (9) being offered from the list below. Click the down arrow to NUMBER your 5 choices (1 = most important; 5 = least important).

Refer to the "Breakout Topic Descriptions" on the following pages.

Please click "SUBMIT" after you complete the Enrollment Form and choose your Breakout Sessions.

- | | |
|--|--|
| _____ Centerless | _____ Internal (I.D.) <i>(includes demo)</i> |
| _____ Creepfeed <i>(includes demo)</i> | _____ Production Grinding with Superabrasives <i>(includes demo)</i> |
| _____ Cylindrical (O.D.) <i>(includes demo)</i> | _____ Truing and Dress Theory and Applications "Dressing for Success" |
| _____ Designing a Basic Cylindrical Grind Cycle <i>(includes demo)</i> | _____ Vibration Analysis <i>(understanding chatter)</i> <i>(includes demo)</i> |
| _____ Gear Grinding <i>(bevel & parallel axis gears)</i> | |



PRECISION CUSTOMER SEMINAR TRAINING AND DEVELOPMENT

SEMINAR DATES:
APRIL 14-17, JUNE 23-26 AND OCTOBER 6-9
Worcester and Northborough, Massachusetts

BREAKOUT TOPIC DESCRIPTIONS

CENTERLESS

- Principles of centerless grinding; general overview
- Significant machine components and their functions
- Machine set-up using machine charts for specific throughput rates
- General coolant information
- General truing information
- Wheel specifications and selections
- Troubleshooting

Phil Plainte
Senior Corporate Application Engineer
(508) 795-5469

CREEPFEED (includes demo)

Should you have components currently machined using milling or broaching, you may be interested in learning how Creepfeed Grinding can replace these processes while significantly reducing overall machining costs. We will touch on:

- Creepfeed definition
- Machine
- Workpiece
- Coolant system
- Wheel selection
- Dressing
- Grinding parameters
- Understand the outputs
- Troubleshooting

Andrew Biro
Corporate Application Engineer
(508) 471-6769

CYLINDRICAL (O.D.) (includes demo)

- Principles of cylindrical grinding; general overview
- Design a grind cycle for both plunge and traverse grinding
- Formulas and suggested rates for grinding, including wheel speed, part speed and grinding rates
- Wheel specification selection and nomenclature
- Review actual application examples
- Troubleshooting

Josh Fairley,
Product Engineer, BA
(508) 353-8757

DESIGNING A BASIC CYLINDRICAL GRIND CYCLE (includes demo)

This session is intended to provide background and practical information regarding cylindrical grind cycle design and includes:

- Key term introduction and definitions
- Importance of process measurement
- Procedural best practices
- Design a cylindrical grind cycle demo

Robin Bright
Technology Manager
(419) 902-5136

Bill Pflager
Senior Corporate Application Engineer
(717) 504-3175

GEAR GRINDING (bevel & parallel axis gears)

- Bevel and spur gear grinding
- Continuous gear generation
- Single rib grinding
- Wheel technology
- Truing and dressing
- Grinding from solid

Phil Plainte
Senior Corporate Application Engineer
(508) 795-5469

INTERNAL (I.D.) (includes demo)

- Wheel-to-work relationship
- Grind cycle design
 - Speeds
 - Feed rates
 - Dress parameters
 - Quill design
- AlOx and ceramic (NQ, SG, TG) products; what's best for your conditions
- Applications: how to use your wheel successfully
- Troubleshooting

Taqwa Gilani
Senior Corporate Application Engineer
(214) 668-2961



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BREAKOUT TOPIC DESCRIPTIONS

PRODUCTION GRINDING WITH SUPERABRASIVES (includes demo)

- Expected benefits using superabrasives
- Successful applications
- Requirements for using them
- Things to watch out for

Alfredo Barragan
Senior Corporate Application Engineer
(774) 262-6489

TRUING AND DRESS THEORY AND APPLICATIONS

“Dressing for Success”

- Review Stationary Tool Basics
 - Availability, selection and usage
- Rotary Dressing Tools
 - Available technologies
 - Factors that affect roll life, part geometry and/or finish
 - Using rolls correctly/rotary tool operational factors
- Understanding Rotary Dress Parameters
 - Roll speed & direction, dress depth, traverse rate, overlap ratio
- Using Dress Parameters to Improve/Address:
 - Wheel performance
 - Part geometry/finish
- Dressing Spindles and Systems

Dave Goetz
Corporate Application Engineer
(519) 820-4551

Kyle Kopanski
Product Engineer, SA
(864) 605-8502

VIBRATION ANALYSIS (understanding chatter) (includes demo)

- Why vibration is an issue
- Types of vibration
- Vibration data formats
- Evaluating vibration severity
- Data collection and measurement parameters
- Predictive maintenance monitoring
- Fault identification and machinery diagnostics
- Resonance and vibration control
- Machine vibration demo

John Hagan
Senior Application Engineer
(508) 351-7296



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PRECISION CUSTOMER SEMINAR



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Form #7854 REV. 02/20

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