

NORTON

SAINT-GOBAIN

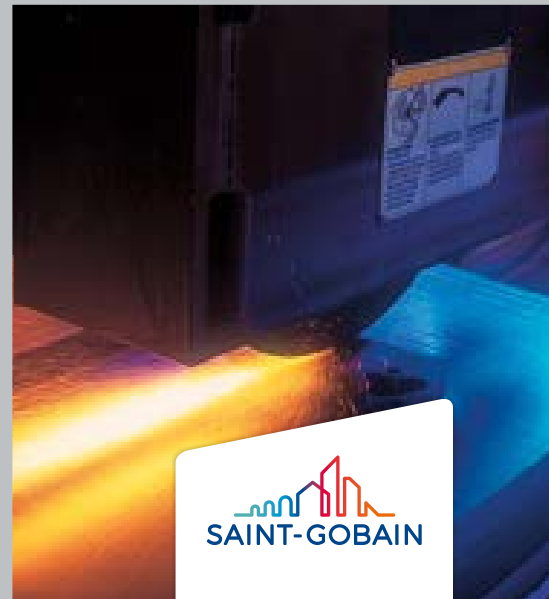
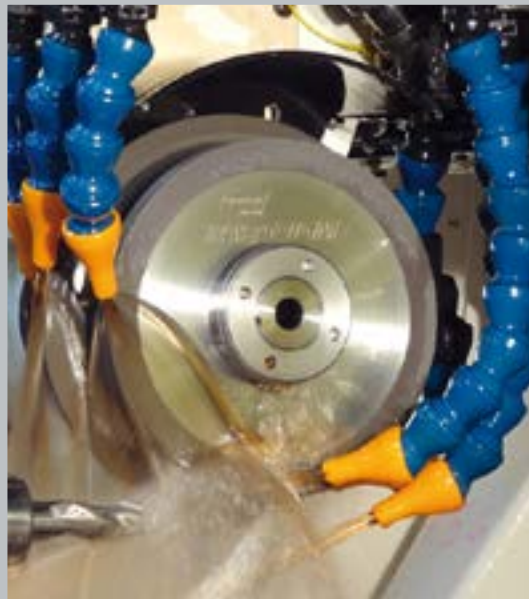
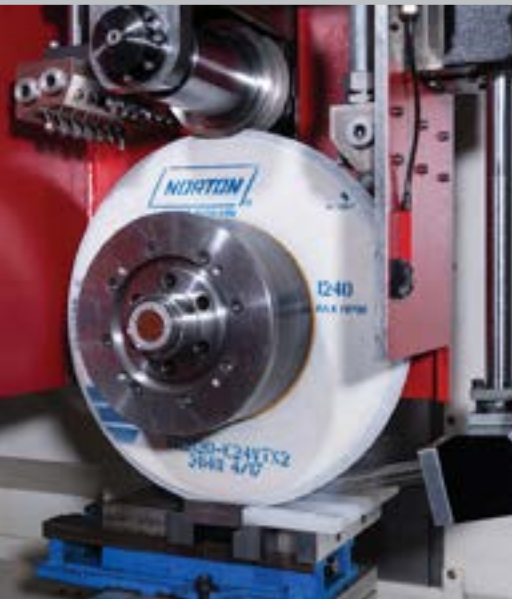
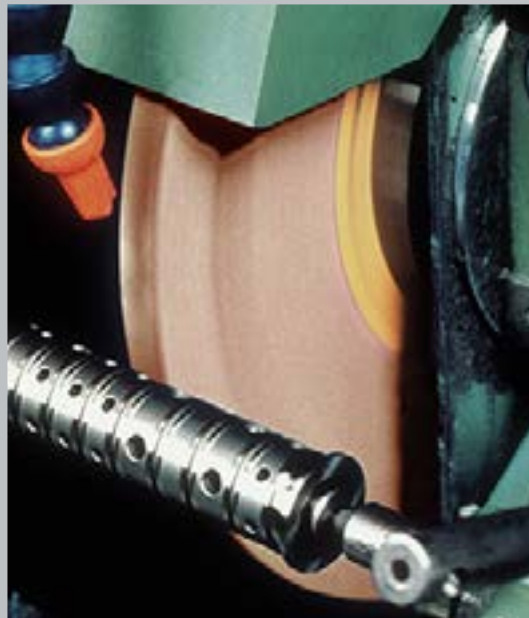
PRECISION CUSTOMER SEMINAR

**2024 SEMINAR
DATES:**

APRIL 2-5
JUNE 18-21
OCTOBER 8-11

WORCESTER AND NORTHBOROUGH,
MASSACHUSETTS

**GRINDING AND FINISHING YOUR
WAY TO SUCCESS**



PRECISION CUSTOMER SEMINAR SPONSORS

Application Engineering,
Sales Training and
Development

ROBIN BRIGHT

Application Engineering
Manager

(419) 902-5136

BETHANY SALEK

Sales Training and
Development Manager

(508) 847-9603

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 2, June 18 and October 8

- Grinding Theory and Bonded Abrasive Basics
- Plant Tours – Bonded Abrasives and Superabrasives Wheel Manufacturing
- Safety in Precision
- Superabrasive Basics (Diamond and cBN)
- Truing and Dressing Basics

WEDNESDAY, April 3, June 19 and October 9

- Factors Affecting Grinding
- Common Machine Issues
- Coolant Application
- Review Breakout Session Choices
- Plant Tours – Bonded Abrasives and Superabrasive Wheel Manufacturing (groups switch from Tuesday)
- Material Properties
- Innovations in Grinding
- Awareness of Carbon Footprint on a Grinding Wheel

THURSDAY, April 4, June 20 and October 10

- Tour of Higgins Grinding Technology Center and APS Lab
- 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 5, June 21 and October 11

(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.
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(508) 795-5336

EXPENSES

NORTON | SAINT-GOBAIN WILL PROVIDE

- Continental breakfast Tuesday, full breakfast Wednesday-Friday, and afternoon refreshments
- Lunches (except 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
- Meals on travel days and dinners on your own, Tuesday and Wednesday

ENROLLMENT/CONFIRMATION

Upon receipt of your enrollment form a confirmation letter will be sent to you.

TRANSPORTATION

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.

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 \$159/night plus tax. Transportation will be provided to/from the Beechwood Hotel and our facility Tuesday - Thursday, free of charge. 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 2-5
JUNE 18-21
OCTOBER 8-11, 2024

Worcester and Northborough, Massachusetts

REGISTRATION FEE

\$1,995/ Per Person

Send form to:

Barbara Nichols

Senior Training Specialist
Saint-Gobain Abrasives, Inc.

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

Phone: (508) 795-5336

ATTENDEE INFORMATION

Choose One: **April 2-5** **June 18-21** **October 8-11**

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.

REGISTRATION FEE INFORMATION (WE ACCEPT VISA, MASTERCARD AND AMERICAN EXPRESS)

Choose One: **Charge:** OR **P.O.#:**

(COMPLETE INFORMATION BELOW)

CARDHOLDER NAME	
EMAIL	PHONE

BREAKOUT SESSIONS

Please choose your **top five (5)** Breakout Session topics from the list below. Rank your top picks (1 = most important; 5 = least important) by selecting the box below the number. Refer to the "Breakout Topic Descriptions" on the following pages.

**Includes Demo.*

1 2 3 4 5

1 2 3 4 5

Centerless
Creepfeed*
Cylindrical (O.D.)*
Designing a Basic
Cylindrical Grind Cycle*

Internal (I.D.)*
Production Grinding with Superabrasives*
Truing and Dress Theory and Applications
Vibration Analysis
- Understanding Chatter*

* = INCLUDES DEMO

EMAIL COMPLETED FORM TO: BARBARA.E.NICHOLS@SAINT-GOBAIN.COM

GRINDING AND FINISHING YOUR WAY TO SUCCESS



SAINT-GOBAIN

PRECISION CUSTOMER SEMINAR TRAINING AND DEVELOPMENT

SEMINAR DATES:

APRIL 2-5, JUNE 18-21 AND OCTOBER 8-11, 2024

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

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

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

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

INTERNAL (I.D.)

(includes demo)

- Wheel-to-work relationship
- Technical Parameters & Tools
 - Speeds
 - Feed rates
 - MRR
 - Dress parameters
 - Quill design
- Wheel Selection; what's best for your conditions
- Troubleshooting

PRODUCTION GRINDING WITH SUPERABRASIVES

(includes demo)

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

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

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



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Form #7854 REV. 01/24

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