



Course Program

TRAINING CENTER



Kern Training Center TABLE OF CONTENTS

Kern Training Courses	05
<hr/>	
Beginners without Heidenhain Experience	
• Heidenhain Basic Course	06
• Machine Operator Training with Heidenhain	07
• Service & Maintenance Training	08
<hr/>	
Beginners with Heidenhain Experience	
• Heidenhain Advanced Course	09
• Machine Operator Training	10
<hr/>	
Advanced Users	
• Heidenhain TNC7 Conversion Course	11
• Heidenhain Probing Course	12
• Grinding Training	13
• Operation Workpiece Changer	14
<hr/>	
Experts	
• Individual Training	15
<hr/>	
Course Fees	16
Contact & Recommendations	17
Terms & Conditions	18





Overview

KERN TRAINING COURSES

Beginners without Heidenhain Experience

Heidenhain Basic Course
4,5 days

Machine Operator Training with Heidenhain
4,5 days

Service & Maintenance Training
3 days

Beginners with Heidenhain Experience

Heidenhain Advanced Course
4,5 days

Machine Operator Training
3 days

Advanced Users

Heidenhain TNC7 Conversion Course
3 days

Heidenhain Probing Course
3 days

Grinding Training
3 days

Operation Workpiece Changer
1 day

Experts

Individual Training

Beginners without Heidenhain Experience

HEIDENHAIN BASIC COURSE

Requirements

Knowledge of milling according to drawings and CNC basics.

Learning Goal

Participants can create and test programs in HEIDENHAIN conversational programming based on part drawings.

Content

- File management
- Contour description (cartesian & polar)
- Drilling and milling cycles (pockets, studs, slots)
- Program section repetitions
- Subprograms and nesting



Duration:
4,5 days



Participants:
maximum 8

Beginners without Heidenhain Experience

MACHINE OPERATOR TRAINING WITH HEIDENHAIN

Requirements

Knowledge of milling according to drawings and CNC basics.

Learning Goal

After the training participants can independently operate and set up a Kern milling machine. They can also restore normal operation after interruptions (e.g. power outage).

Content

- Combined topics from various courses, tailored to Kern machine operators
- Heidenhain conversational programming (extracts from the basic course)
- Safe and correct machine operation
- Setup fundamentals: manual, automated and during interruptions
- Operation and use of additional units
- Tool loading and tool change
- Functions and operation of service menu
- Important Kern M-codes
- Interpretation and correction of error messages
- Machine calibration
- Troubleshooting and diagnostics
- Maintenance plan and operating materials



Duration:
4,5 days



Participants:
maximum 4

Beginners without Heidenhain Experience

SERVICE & MAINTENANCE TRAINING

Requirements

Basic mechanical background is required.

Learning Goal

After the training participants can independently perform maintenance according to the Kern protocol.

Content

- Maintenance according to Kern specification
- Filter replacement
- Axis condition inspection
- Spindle inspection
- Refilling operating materials
- Pneumatic system inspection
- Pressure systems inspection
- Troubleshooting tool changer
- Troubleshooting workpiece changer
- Tips und tricks for efficient maintenance



Duration:
3 days



Participants:
maximum 4

Beginners with Heidenhain Experience

HEIDENHAIN ADVANCED COURSE

Requirements

Successful participation Heidenhain Basic Course.

Learning Goal

Participants deepen their knowledge of HEIDENHAIN conversational programming.

Content

- Advanced subprogram techniques and repetitions
- Calling external programs as subprograms
- Advanced cycles (drilling, tapping, thread milling)
- Contour milling using SL cycles
- Coordinate transformation cycles
- Multi-pass milling with end mills
- Rotationally symmetric machining
- Q-parameter programming and jump commands



Duration:
4,5 days



Participants:
maximum 8

Beginners with Heidenhain Experience

MACHINE OPERATOR TRAINING

Requirements

Basic knowledge of Heidenhain conversational programming.

Learning Goal

After the training participants can independently operate and set up a Kern milling machine. They can also restore normal operation after interruptions (e.g. power outage).

Content

- Safe and correct machine operation
- Setup fundamentals: manual, automated and during interruptions
- Operation and use of additional units
- Tool loading and tool change
- Functions and operation of service menu
- Important Kern M-codes
- Interpretation and correction of error messages
- Machine calibration
- Troubleshooting and diagnostics
- Maintenance plan and operating materials



Duration:
3 days



Participants:
maximum 4

Advanced Users

HEIDENHAIN TNC7 CONVERSION COURSE

Requirements

Experience with TNC controls iTNC 530, TNC 640 or TNC 620.

Learning Goal

Participants understand and apply new features of the TNC7.

Content

- Structure and user interface of the TNC7
- New functions and Optimized Contour Milling
- Graphical contour programming
- Probing cycles 14xx for workpiece measurement



Duration:
3 days



Participants:
maximum 4

Advanced Users

HEIDENHAIN PROBING COURSE

Requirements

Participation in a basic course or comparable TNC control knowledge.

Learning Goal

Participants can apply probing cycles in manual and automatic mode and record measurement results.

Content

- Structure of probing systems
- Centering the probing system
- Editing of probing system and preset table
- Calibration of the probing system
- Compensation of workpiece misalignment
- Automatic workpiece measurement
- Automatic reference point setting
- Logging measurement results
- Automatic tool correction
- Cycle 431 – Plane measurement
- Machine kinematic optimization



Duration:
3 days



Participants:
maximum 4

Advanced Users

GRINDING TRAINING

Requirements

Basic Heidenhain and machine operation knowledge, machine operator training.

Learning Goal

After the training participants can independently use Kern coordinate grinding cycles.

Content

- Basics of coordinate grinding
- Measuring the dressing spindle
- Setting tool data for dressing wheels and grinding tools
- Dressing grinding tools
- Practical example of coordinate grinding
- Roughing and finishing a contour
- Setting structure-borne sound sensors
- Explanation of grinding cycles:
 - + Cycle 364: Coordinate grinding
 - + Cycle 362: Bore grinding



Duration:
3 days



Participants:
maximum 4

Advanced Users

OPERATION WORKPIECE CHANGER

Requirements

Confident, independent operation of a Kern milling machine.

Learning Goal

After the training participants can independently set up and efficiently use the workpiece changer.

Content

- General operation of a workpiece changer
- Manual axis movement
- Loading pallets
- Switching to automatic operation
- Creating a pallet program
- Retracting after interruption
- Efficient use of the workpiece changer system



Duration:
1 day



Participants:
maximum 4

Experts

INDIVIDUAL TRAINING

Requirements

Topic-specific.

Learning Goal

Tailored training enhances your company's performance and productivity by aligning with the specific needs and challenges of your team. It promotes flexibility and increases employee motivation.

Content

- Tool measurement
- Process support
- Workpiece alignment
- KERN options
- Heidenhain options
- BLUM options
- Additional topics on request
- BPM



Duration:
on request



Participants:
on request

*Information***COURSE FEES****Participants**

If the minimum number of participants is not reached, we reserve the right to cancel the training up to two weeks before the start date. In this case, the course fee will be refunded in full or a new training date will be arranged.

Fees

Course fees will be provided in a quotation upon written request to **kern.trainingcenter@ametek.com**. Please include the course content, number of participants and preferred timeframe.

Fees always include:

- Training
- Training material
- Lunch
- Drinks and snacks

Not included:

Travel, rental cars, accomodation, breakfast

Special Training

For special training sessions, please also contact us at **kern.trainingcenter@ametek.com**, including the desired course content, number of participants and preferred timeframe. We will then get in touch with you to discuss the next steps.

Cancellation

If participants withdraw shortly before the start of the training and no substitute is provided, a cancellation fee will be charged per person.

6 to 2 weeks before the start of the training:
30% of the respective fee plus VAT

2 weeks to 1 day before the start of the training:
50% of the respective fee plus VAT

No-show without notification:
100% of the respective fee plus VAT

*Information***CONTACT & RECOMMENDATIONS****Contact**

Kern Microtechnik GmbH
Olympiastraße 2 | DE 82438 Eschenlohe

☎ +49 (0) 8824 9101 203

✉ kern.trainingcenter@ametek.com

**Recommendation
Accomodation**

Griesbräu Murnau
www.griesbraeu.de

Angerbräu Murnau
www.angerbraeu.de

Tonihof Eschenlohe
www.tonihof-eschenlohe.de

Alpenhotel Ohlstadt
www.alpenhotel-ohlstadt.de

Information

TERMS AND CONDITIONS

Registration

Registration for course participation can be made via email to: **kern.trainingcenter@ametek.com**. By registering, the participant accepts the Participation Terms and the General Terms and Conditions. Registrations are processed in the order in which they are received. Participants will receive a written confirmation. Participation is only possible with this confirmation.

Payment Terms

The participant must pay the course fee no later than 21 days before the start of the course or by the date specified on the invoice. The participant will receive an invoice or the payment amount by email. The invoice must be paid upon receipt, including the complete invoice number and the name of the course participant, as otherwise the payment cannot be allocated.

Cancellation / Refund / Course Cancellation

Kern Microtechnik reserves the right to withdraw from the contract even after confirming a registration if there is insufficient participation, if an instructor is unavailable, or for other reasons beyond its control. In such cases, any payments already made will be refunded.

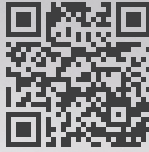
The booking of a course is binding for the participant. Participants who do not attend or who only partially attend the course are generally required to pay the full course fee. In the event of illness or other reasons for the participant's absence, there is—due to organizational reasons—no entitlement to a replacement date or refund of the course fee. The nomination of a substitute participant is possible. If participants cancel shortly before the start of the training and no substitute is provided, a cancellation fee will be charged per person:

6 to 2 weeks before the start of the training:
30% of the respective fee plus VAT

2 weeks to 1 day before the start of the training:
50% of the respective fee plus VAT

No-show without notification:
100% of the respective fee plus VAT





SCAN FOR MORE

www.kern-microtechnik.com



CNC Machines | Contract Manufacturing | Manufacturing Processes | Automation

Kern Microtechnik GmbH | Olympiastraße 2 | 82438 Eschenlohe
kern.info@ametek.com | www.kern-microtechnik.com

