

TECHNICAL ACADEMY



WE DEMONSTRATE HOW TO MAKE
OPTIMUM USE OF MACHINES



**UNIVERSAL MACHINING CENTERS
SYSTEM SOLUTIONS
ASSEMBLY & E-MOBILITY**

TRAINING CONCEPT

GROB Technical Academy

As products become more and more complex and the competition gets tougher, the importance of our Technical Academy as a key component of the GROB global range of services is constantly growing. An experienced team of qualified trainers is squaring up to this challenge at GROB.

THE GROB SERVICE RANGE

Aside from individual customer consultation and support, the GROB service range includes a wide range of training and development modules.

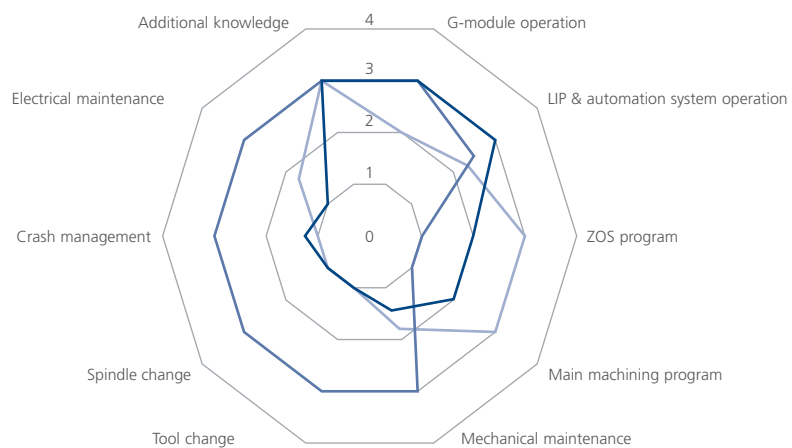
Due to GROB's individual machines and systems, we provide most of our customized training courses based on a standard program. We provide instruction and training courses for all GROB products, not only for universal machining centers or system solutions, but also for e-mobility. Depending on availability, individual training modules can be configured to suit particular needs. Learning progress tests can be integrated as required.

All participants who successfully attend the GROB Technical Academy receive a certificate.

THE PERFECT EMPLOYEE

- Operator
- Maintenance technician
- Programmer

- 0 No proficiency
- 1 Basic proficiency
- 2 Advanced proficiency
- 3 Full proficiency
- 4 Proficiency beyond GROB training



GROB training modules

Whether operator, programmer, installation technician, or maintenance technician: we provide various training modules for optimum use of your GROB system in your production. All training programs on offer are available for the machine control systems of the SIEMENS 840D sl, SIEMENS TIA, BECKHOFF TwinCAT3, HEIDENHAIN iTNC530, TNC640, and FANUC 30i-B.





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Would you like to know more?

Our training team is always available for you!

GROB TECHNICAL ACADEMY

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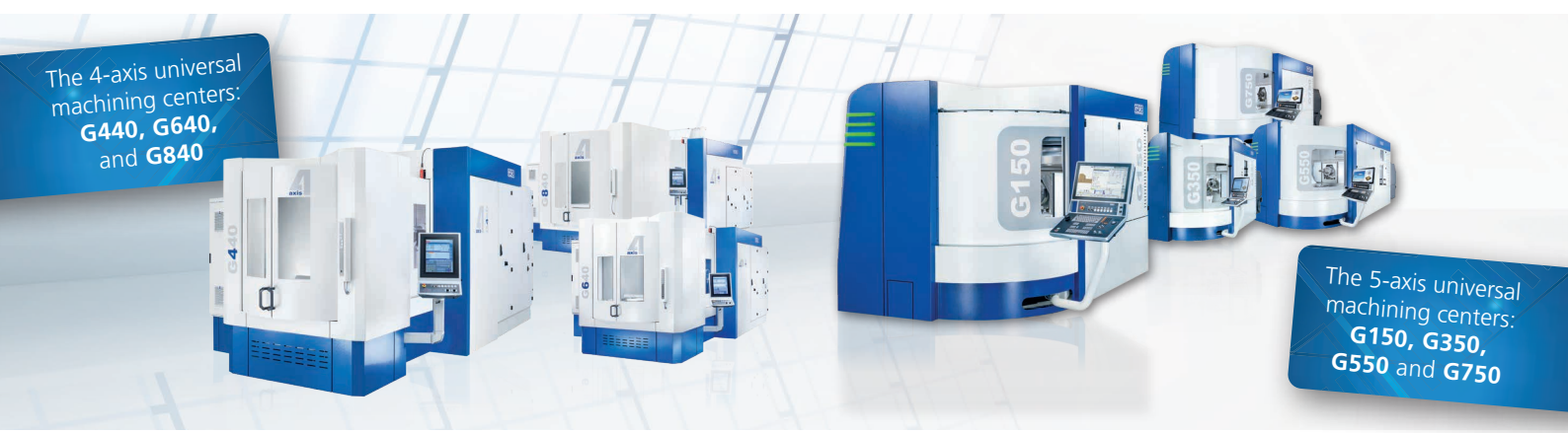
E-mail: sales.service@grob.de

UNIVERSAL MACHINING CENTERS TRAINING MODULES



Training offers for universal machining centers

You will learn about GROB machining centers in various modules. Whether you are a novice or an experienced machine operator – we will show you how the machines work to optimal effect.



OVERVIEW OF THE UNIVERSAL MACHINING CENTERS

Operation
NC programming basic course
NC programming swiveling
NC programming advanced courses
Mill-turn technology
Touch probe programming
GROB pallet storage systems (PSS-R/PSS-L)
Transfer course from HEIDENHAIN iTNC530 to TNC640
Electrical maintenance – standard
Electrical maintenance – advanced
GROB spindle diagnostics, electrical system
Mechanical maintenance
Robot training basic course
GRC robot training

UNIVERSAL MACHINING CENTERS TRAINING MODULES



ALL TRAINING COURSES OFFERED
are available for the machine control systems of the
SIEMENS 840D sl, SIEMENS TIA,
BECKHOFF TwinCAT3, HEIDENHAIN iTNC530,
TNC640, AND FANUC 30i-B.

OPERATION	
Requirement	Basic knowledge of the control system used
Duration	3 days (4 days for mill-turn machines)
Content	<ul style="list-style-type: none"> • Safety • Operation incl. pallet change • Program access • Tool management • Loading and unloading tools • Touch probe calibration • Introduction to swiveling in manual mode • Touch probe in manual mode • Standard machine calibration • Daily inspection and maintenance of universal machining centers
Learning objective	<ul style="list-style-type: none"> • Autonomous and safe machine operation in manual and automatic mode • Correct handling of tools and associated data • Correct handling of the touch probe • Recognizing the need for machine maintenance

NC PROGRAMMING (BASIC COURSE)	
Requirement	Knowledge of milling according to drawings, basic knowledge of CNC
Duration	4.5 days
Content	<ul style="list-style-type: none"> • Introduction to the functionality of the control system concerned • Axis designation and coordinate systems • File management and tables • Tool management • Standard and contour cycles • Reference and zero points • Path functions • Fundamental principles of NC programming from the control system manufacturer • Programming techniques such as program block repetition and subroutines
Learning objective	Creating and testing 3-axis NC programs according to part drawings

NC PROGRAMMING (SWIVELING)

Requirement	Knowledge from the basic course
Duration	2 days
Content	<ul style="list-style-type: none">• Swiveling the machining plane via control system swivel cycles• Creating boreholes and surfaces on swiveled-in planes• Resetting the swivel plane• GROB manufacturer cycles
Learning objective	Machine programming in five axes

NC PROGRAMMING (ADVANCED COURSE)

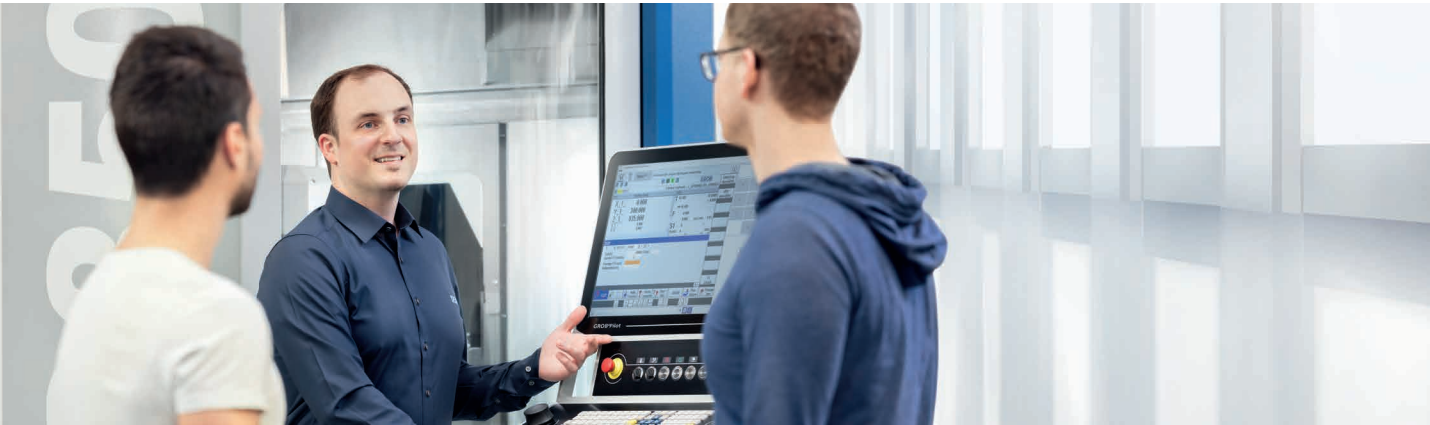
Requirement	Knowledge from the basic course
Duration	2 days
Content	<ul style="list-style-type: none">• Using calculation parameters• Reading and writing system variables• Creating log files• Definition and application of user variables
Learning objective	<ul style="list-style-type: none">• Flexible program design• Fundamental principles of programming with high-level programming languages

NC PROGRAMMING (GROB-SPECIFIC PROGRAMMING)

Requirement	Knowledge from the basic course
Duration	1 day
Content	<ul style="list-style-type: none">• Using GROB manufacturer cycles• Adjusting the home position program• Checking the tool data• Automatic program access after program abort
Learning objective	Reliable program design

UNIVERSAL MACHINING CENTERS

TRAINING MODULES



NC PROGRAMMING (GROB MACHINE CALIBRATION)

Model 1

Requirement	Extensive experience with GROB machining centers and knowledge from the basic course
Duration	1 day
Content	<ul style="list-style-type: none"> • Fundamentals of machine calibration • Influencing the calibration via variables • Determination of individual measuring positions • Checking the calibration via measuring programs and log file • Automation options
Learning objective	<ul style="list-style-type: none"> • Understanding the necessity and individual adjustment of the calibration • Detailed insight into the calibration process and its variables • Safe handling of control programs and logs

Model 2

Requirement	Knowledge from the advanced course
Duration	1 day
Content	<ul style="list-style-type: none"> • Naming and saving clamping programs • Basic structure of setting, clamping and unclamping programs • Program assignment • Relevant functions and signals
Learning objective	Creating an automatic clamping and unclamping operation

NC PROGRAMMING (INTERPOLATION TURNING)	
Requirement	Knowledge from the basic course
Duration	1 day
Content	<ul style="list-style-type: none"> • Tool management, defining tool data • Interpolation turning cycles • Plane switchover • Programming a part with turning contour
Learning objective	Creating and editing turning contours

NC PROGRAMMING (IN-PROCESS TOOL MEASUREMENT)	
Requirement	Knowledge from the basic course
Duration	1 day
Content	<ul style="list-style-type: none"> • Using GROB manufacturer cycles • Adjusting the home position program • Checking the tool data • Automatic program access after program abort
Learning objective	Integrating the tool measurement system into the process

NC PROGRAMMING (GROB-FILE-INPUT-OUTPUT (FIO))	
Requirement	Knowledge from the advanced course
Duration	1 day
Content	<ul style="list-style-type: none"> • Calibration • Tool measurement • Wear measurement • Tool breakage detection • Single cutting edge control
Learning objective	<ul style="list-style-type: none"> • In-process communication with the machine • Extracting machine information

UNIVERSAL MACHINING CENTERS

TRAINING MODULES



MILL-TURN TECHNOLOGY

Requirement	Knowledge from the basic course and machine operation
Duration	3 days
Content	<ul style="list-style-type: none"> • Fundamental principles of turning mode • Balancing parts • Advanced tool management • In-process measurement of turning tools • Toggling between milling and turning mode • Using turning cycles • Practical exercises on the machine
Learning objective	Operating and programming mill-turn machines

TOUCH PROBE PROGRAMMING

Requirement	Knowledge from the basic course
Duration	1 day
Content	<ul style="list-style-type: none"> • Measuring cycles in automatic mode • Positioning parts • Setting part zero points • Correcting tool geometry data
Learning objective	<ul style="list-style-type: none"> • Positioning parts in the work area • Checking and correcting parts



GROB PALLET STORAGE SYSTEMS (PSS-R / PSS-L)

Requirement	Basic knowledge of the machining unit used
Duration	1 day
Content	<ul style="list-style-type: none"> • Safety • Structure and function of GROB pallet storage systems (PSS-R/PSS-L) • Basics of the pallet storage system control software • Generating work plans • Production planning
Learning objective	<ul style="list-style-type: none"> • Autonomous and safe operation of the PSS • Appropriate equipping and production planning

TRANSFER COURSE FROM HEIDENHAIN iTNC530 TO TNC640

Requirement	Knowledge of the iTNC530 control system
Duration	1 day
Content	<ul style="list-style-type: none"> • New cycles (face milling cycle 233 and others) • New, fast, and efficient removal simulation • Working with the preset table • New probing functions • New TNC functions • DXF converter • Comparison of the iTNC530 ◀ ▶ TNC640 control systems
Learning objective	Learning and applying special features and functions of the TNC640

UNIVERSAL MACHINING CENTERS

TRAINING MODULES



ELECTRICAL MAINTENANCE – STANDARD

Requirement	<ul style="list-style-type: none"> • Training on electrical or electronic systems • Basic knowledge of drive and control technology, as well as the control system used
Duration	3 days
Content	<ul style="list-style-type: none"> • Safety instruction • Basic knowledge of editing GROB diagnostic diagrams • Data backup • Data recovery • Hardware replacement • Hardware settings • Diagnostic options • Error analysis and the correct approach to machine malfunctions
Learning objective	<ul style="list-style-type: none"> • Minimizing machine downtimes through preventive maintenance activities • Repair of electrical components • Localizing and rectifying electrical faults • Creation and use of data backups as a frame of reference • Confident handling of the documentation

ELECTRICAL MAINTENANCE – ADVANCED

Requirement	<ul style="list-style-type: none"> • Training on electrical or electronic systems • Basic knowledge of drive and control technology, as well as the control system used
Duration	3 days
Content	<ul style="list-style-type: none"> • Safety instruction • Functional description of electrical components • Data backup • Data recovery • Hardware replacement • Hardware settings • Diagnostic options • Error analysis and the correct approach to machine malfunctions
Learning objective	<ul style="list-style-type: none"> • Minimizing machine downtimes through preventive maintenance activities • Repair of electrical components • Localizing and rectifying electrical faults • Creation and use of data backups as a frame of reference • Confident handling of the documentation

GROB SPINDLE DIAGNOSTICS, ELECTRICAL SYSTEM

Target group	Specifically for electrical maintenance technicians
Requirement	<ul style="list-style-type: none"> • Comprehensive training on electrical systems • Basic knowledge of drive and control technology, as well as the control system used
Duration/venue	1 day – Mindelheim Training Center or customer facility <ul style="list-style-type: none"> • Course composition: Combination of theory (30 %) and practical exercises (70 %)
Content	<ul style="list-style-type: none"> • Structure and function of GROB spindle diagnostics • Fundamental principles of the software used (IFM Octavis) • Troubleshooting on the machine • Maintenance, commissioning, and hardware replacement
Learning objective	<ul style="list-style-type: none"> • Minimizing machine downtimes following malfunctions • Proper handling of the software

UNIVERSAL MACHINING CENTERS

TRAINING MODULES



MECHANICAL MAINTENANCE	
Target group	Specifically for mechanical maintenance technicians
Requirement	<ul style="list-style-type: none"> • Comprehensive training on mechanical systems • Basic knowledge of hydraulics and pneumatics • Basic knowledge of the control system used
Duration/venue	3 days – Mindelheim Training Center or customer facility <ul style="list-style-type: none"> • Course composition: Combination of theory (30 %) and practical exercises (70 %)
Content	<ul style="list-style-type: none"> • Introduction to safety technology • Structure of the machine (assemblies, drives, tool magazine) • Using the machine documentation • Motorized spindle (inspection) • Machine zero points • Service and preventive maintenance measures • Introduction to special equipment • Fluid technology
Learning objective	<ul style="list-style-type: none"> • Using the technical documentation as a frame of reference • Minimizing machine downtimes through preventive maintenance activities • Implementing simple mechanical repair and maintenance activities

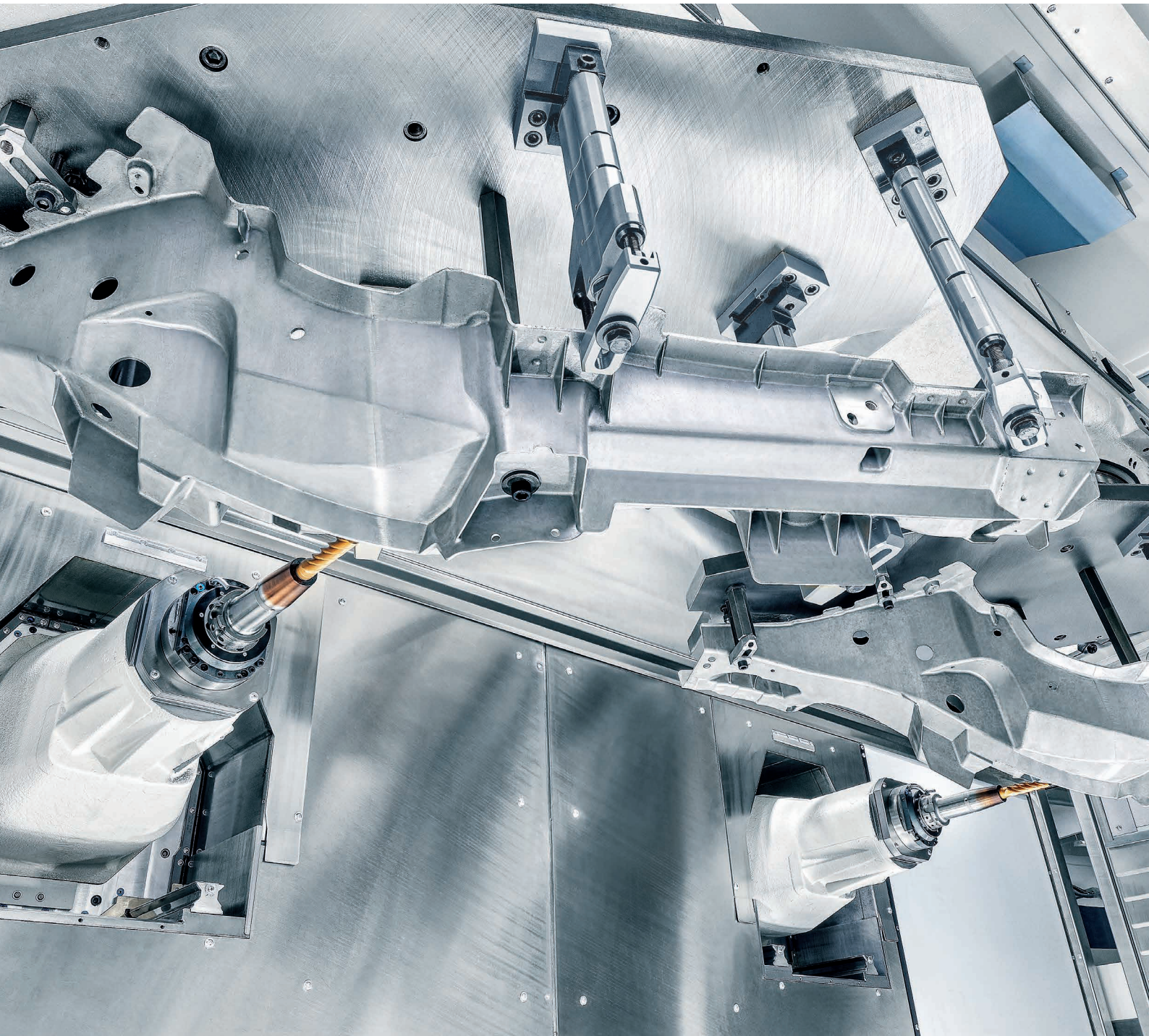


ROBOT TRAINING (BASIC COURSE)	
Target group	<ul style="list-style-type: none"> • Specifically for operators • Also recommended for maintenance personnel, depending on their area of activity
Requirement	Knowledge of the functioning of robots
Duration/venue	2 days – Mindelheim Training Center <ul style="list-style-type: none"> • Course composition: Combination of theory (20 %) and practical exercises (80 %)
Content	Prior arrangement with the robot manufacturer necessary (KUKA, ABB, or FANUC) <ul style="list-style-type: none"> • Structure of a robot • Safety and modes of operation • Coordinate systems • Base and tool measurement • Determining the load data • Robot calibration (zero points) • Selecting and running programs • "Teaching" transfer points and adjusting positions • Retracting the robot and creating/uploading backups • Backing up and reimporting programs
Learning objective	<ul style="list-style-type: none"> • Correct and safe robot operation • Minimizing downtimes through anticipatory machine operation • Expert knowledge about robots on GROB systems

GRC ROBOT TRAINING	
Target group	System supervisor
Requirement	Knowledge from the "Robot training (basic course)" training course
Duration/venue	1 day – Mindelheim Training Center or customer facility
Content	<ul style="list-style-type: none"> • Basics of the standard robot cell • Basics of teach positions using the GROB workbook • Operating a GROB robot cell (GROB⁴Automation production control software) • Retracting robots • Individual content (Vision)
Learning objective	<ul style="list-style-type: none"> • Correct and safe GRC operation • Minimizing downtimes through anticipatory machine operation • Expert knowledge about robot cells

SYSTEM SOLUTIONS

TRAINING MODULES



Equipped for the future

GROB's specific machine concepts let you live up to e-mobility and automotive industry requirements.





GROB's system machines are modular machining centers in various sizes. These can be connected via automation solutions. Their field of use lies in series production – in the automotive industry, among others.

OVERVIEW OF SYSTEM MACHINES
SIEMENS NC programming (GROB-specific programming)
Operation
Electrical maintenance G-module
Electrical maintenance – Advanced
Mechanical maintenance G-module
Touch probe
GROB spindle diagnostics (GSD), electrical systems
Motorized spindle, mechanical systems (installation and removal)
RENISHAW Ballbar mechanical systems
Crash management (main machining axes)
Assembly replacement
Tool change, mechanical systems
Motorized spindle, mechanical systems (with cross-feed type 22)
Part changer
Linear gantry
Special-purpose machines maintenance
Special-purpose machines operation
Robot training basic course
Robot training advanced course

SYSTEM SOLUTIONS

TRAINING MODULES

SIEMENS NC PROGRAMMING (GROB-SPECIFIC PROGRAMMING)	
Target group	<ul style="list-style-type: none"> • Specifically for NC programmers • Also recommended for persons optimizing process quality through program modifications
Requirement	<ul style="list-style-type: none"> • NC basic course or equivalent knowledge • Knowledge of the functioning of automated machine tools • Knowledge of handling production documents, such as drawings, parts lists, tool layouts
Duration/venue	2 days – Mindelheim Training Center, customer facility, or online training via MS Teams <ul style="list-style-type: none"> • Course composition: Theory (100%)
Content	<ul style="list-style-type: none"> • Introduction to the coordinate systems used by GROB • Program management • Structure of machining programs • Machining sub-programs • Quality optimization/offset parameters • Tool correction and monitoring • Speed, feed, and position parameters
Learning objective	<ul style="list-style-type: none"> • Autonomous modification to machining programs (without touch probe) • Quality optimization • Understanding the machine, its functions, and machining programs • Localizing sources of faults • Proficiency with the GROB-specific NC program

OPERATION	
Target group	<ul style="list-style-type: none"> • Specifically for operators • Also recommended for maintenance personnel, depending on their tasks
Requirement	<ul style="list-style-type: none"> • Knowledge of the functioning of automated machine tools • Basic course of the control system manufacturer
Duration/venue	2 days – Mindelheim Training Center or customer facility <ul style="list-style-type: none"> • Course composition: Combination of theory (10%) and practical exercises (90%)
Content	<ul style="list-style-type: none"> • Safety instruction • Introduction to safety technology • Structure of the machine • Basic knowledge of machine operation • Operating modes and how they are used • Tool management system and how it is used • Detecting faults (troubleshooting) • Seating check
Learning objective	<ul style="list-style-type: none"> • Correct and safe machine operation • Minimizing machine downtimes through anticipatory machine operation • Sufficient knowledge of GROB system solutions



ELECTRICAL MAINTENANCE (G-MODULE)	
Target group	Specifically for electrical maintenance technicians
Requirement	<ul style="list-style-type: none"> • Training on electrical or electronic systems • Basic knowledge of drive and control technology, as well as the control system used
Duration/venue	3 days – Mindelheim Training Center or customer facility <ul style="list-style-type: none"> • Course composition: Combination of theory (50 %) and practical exercises (50 %)
Content	<ul style="list-style-type: none"> • Safety instruction • Functional description of electrical components • Data backup • Data recovery • Hardware replacement • Hardware settings • Diagnostic options • Error analysis and the correct approach to machine malfunctions
Learning objective	<ul style="list-style-type: none"> • Minimizing machine downtimes through preventive maintenance activities • Repair of electrical components • Localizing and rectifying electrical faults • Creation and use of data backups as a frame of reference

ELECTRICAL MAINTENANCE (ADVANCED)	
Target group	Specifically for electrical maintenance technicians
Requirement	Knowledge from electrical maintenance standard course
Duration/venue	2 days – Mindelheim Training Center or customer facility <ul style="list-style-type: none"> • Course composition: Combination of theory (80 %) and practical exercises (20 %)
Content	<ul style="list-style-type: none"> • Basic knowledge of editing GROB diagnostic diagrams • Evaluating alarms and messages • Communication between G-module and LIP • General PLC program overview • Position corrections on the LIP • Customer-specific functions
Learning objective	<ul style="list-style-type: none"> • Minimizing machine downtimes following malfunctions Adjustments, e.g., adjusting positions on the linear gantry (LIP)

SYSTEM SOLUTIONS

TRAINING MODULES

MECHANICAL MAINTENANCE (G-MODULE)	
Target group	Specifically for mechanical maintenance technicians
Requirement	<ul style="list-style-type: none"> • Comprehensive training on mechanical systems • Fundamental principles of hydraulic, pneumatic, and lubrication systems (lubricants, lubrication schedules) • Experience in the preventive maintenance of automated machine tools • Experience in diagnosing faults and their causes
Duration/venue	3 days – Mindelheim Training Center or customer facility <ul style="list-style-type: none"> • Course composition: Combination of theory (30 %) and practical exercises (70 %)
Content	<ul style="list-style-type: none"> • Introduction to safety technology • Structure of the machine (assemblies, guides, drives, measuring systems, tool magazine) • Introduction to machine documentation • Service and preventive maintenance measures • Introduction to special equipment • Motorized spindle (inspection) • Machine zero points • Fluid technology
Learning objective	<ul style="list-style-type: none"> • Using the technical documentation as a frame of reference • Correcting reference setting points • Analyzing and rectifying mechanical faults • Replacing spare and wear parts • Service and inspection tasks • Localizing sources of faults • Carrying out repair activities

TOUCH PROBE	
Target group	<ul style="list-style-type: none"> • Specifically for NC programmers • Also recommended for persons optimizing process quality through program modifications
Requirement	<ul style="list-style-type: none"> • NC basic course or equivalent knowledge • Knowledge of the functioning of automated machine tools • Knowledge of handling production documents, such as drawings, parts lists, tool layouts
Duration/venue	1 day or ½ day in connection with the “NC programming (GROB-specific programming)” course <ul style="list-style-type: none"> • Course composition: Combination of theory (50 %) and practical exercises (50 %)
Content	<ul style="list-style-type: none"> • Basic knowledge of the different manufacturers of touch probes • Calibration of the touch probe • Replacement of the battery and touch probe • Internal function settings • Replacement and initial operation of a touch probe • Programming in main and sub-programs • Customer-specific functions
Learning objective	<ul style="list-style-type: none"> • Autonomous modification of the touch probe programming • Quality optimization • Understanding touch probe functions and their NC programming • Localizing sources of faults • In-depth knowledge of the GROB-specific use of the touch probe



GROB SPINDLE DIAGNOSTICS (GSD), ELECTRICAL SYSTEMS

Target group	Specifically for electrical maintenance technicians
Requirement	<ul style="list-style-type: none"> • Comprehensive training on electrical systems • Basic knowledge of drive and control technology, as well as the control system used
Duration/venue	1 day – Mindelheim Training Center or customer facility <ul style="list-style-type: none"> • Course composition: Combination of theory (30 %) and practical exercises (70 %)
Content	<ul style="list-style-type: none"> • Structure and function of GROB spindle diagnostics • Fundamental principles of the software used (IFM Octavis) • Troubleshooting on the machine • Maintenance, commissioning, and hardware replacement
Learning objective	<ul style="list-style-type: none"> • Minimizing machine downtimes following malfunctions • Proper handling of the software

MOTORIZED SPINDLE, MECHANICAL SYSTEMS (INSTALLATION AND REMOVAL)

Target group	<ul style="list-style-type: none"> • Specifically for mechanical maintenance technicians
Requirement	<ul style="list-style-type: none"> • Comprehensive training on mechanical systems • Fundamental principles of machine operation and geometry • Experience with machine tools
Duration/venue	2 days – Mindelheim Training Center <ul style="list-style-type: none"> • Course composition: Combination of theory (10 %) and practical exercises (90 %)
Content	<ul style="list-style-type: none"> • Introduction to safety technology • Service and preventive maintenance measures • Introduction to special equipment • Installation and removal of a motorized spindle using the special equipment provided • Checking perpendicularity, correcting as necessary • Spindle 0° setting • Setting the machine zero point (Z-axis)
Learning objective	<ul style="list-style-type: none"> • Using the technical documentation as a frame of reference • Service and inspection tasks • Correcting reference setting points • Localizing and rectifying mechanical faults • Replacing spare and wear parts • Localizing sources of faults • Carrying out repair activities

SYSTEM SOLUTIONS

TRAINING MODULES

RENISHAW BALLBAR MECHANICAL SYSTEMS	
Target group	Specifically for mechanical maintenance technicians
Requirement	<ul style="list-style-type: none"> • Comprehensive training on mechanical systems • Fundamental principles of machine operation and geometry • Experience with machine tools
Duration/venue	3 days – Mindelheim Training Center <ul style="list-style-type: none"> • Course composition: Combination of theory (10 %) and practical exercises (90 %)
Content	<ul style="list-style-type: none"> • Introduction to safety technology • Basic knowledge of machine operation • Operating modes and how they are used • Structure and function of RENISHAW applications • Introduction to fault overviews • Evaluation of diagnostic routines and graphics • Restoring perpendicularity
Learning objective	<ul style="list-style-type: none"> • Using the technical documentation as a frame of reference • Correcting reference setting points • Localizing and rectifying mechanical faults • Service and inspection tasks • Carrying out repair activities

CRASH MANAGEMENT (MAIN MACHINING AXES)	
Target group	Specifically for mechanical maintenance technicians
Requirement	<ul style="list-style-type: none"> • Comprehensive training on mechanical systems • Fundamental principles of machine operation and geometry • Experience with machine tools
Duration/venue	5 days – Mindelheim Training Center <ul style="list-style-type: none"> • Course composition: Combination of theory (10 %) and practical exercises (90 %)
Content	<ul style="list-style-type: none"> • Introduction to safety technology • Identification of geometry errors • RENISHAW Ballbar measurement and associated machine settings • Restoring machine geometry • Setting machine zero points
Learning objective	<ul style="list-style-type: none"> • Using the technical documentation as a frame of reference • Localizing sources of faults • Localizing and rectifying mechanical faults • Service and inspection tasks • Carrying out repair activities

ASSEMBLY REPLACEMENT

Target group	Specifically for experienced mechanical maintenance technicians
Requirement	<ul style="list-style-type: none"> • Comprehensive training on mechanical systems • Fundamental principles of machine operation and geometry • Experience with machine tools
Duration/venue	1-5 days – Mindelheim Training Center (prior arrangement required) <ul style="list-style-type: none"> • Course composition: Combination of theory (10 %) and practical exercises (90 %)
Content	<ul style="list-style-type: none"> • Introduction to safety technology • Identification of geometry errors • Replacement of an assembly (prior arrangement required) • Restoring machine geometry • Commissioning the assembly • Setting machine zero points
Learning objective	<ul style="list-style-type: none"> • Using the technical documentation as a frame of reference • Correcting reference setting points • Localizing and rectifying mechanical faults • Service and inspection tasks • Carrying out repair activities

TOOL CHANGE, MECHANICAL SYSTEMS

Target group	Specifically for mechanical maintenance technicians
Requirement	<ul style="list-style-type: none"> • Comprehensive training on mechanical systems • Fundamental principles of machine operation and geometry • Experience with machine tools
Duration/venue	3 days – Mindelheim Training Center <ul style="list-style-type: none"> • Course composition: Combination of theory (10 %) and practical exercises (90 %)
Content	<ul style="list-style-type: none"> • Introduction to safety technology • Tool magazine (structure) • Configuration and installation using special equipment (positioner) • Checking and setting up the transfer position • Setting the software cams • Checking the tool change operation in automatic mode
Learning objective	<ul style="list-style-type: none"> • Using the technical documentation as a frame of reference • Correcting reference setting points • Localizing and rectifying mechanical faults • Service and inspection tasks • Carrying out repair activities

SYSTEM SOLUTIONS

TRAINING MODULES



MOTORIZED SPINDLE, MECHANICAL SYSTEMS (WITH CROSS-FEED TYPE 22)	
Target group	Mechanical maintenance technicians or machine operators (prior arrangement required)
Requirement	<ul style="list-style-type: none"> • Comprehensive training on mechanical systems • Fundamental principles of machine operation, NC programming, and geometry • Experience with machine tools
Duration/venue	1 or 2 days (prior arrangement required) – Mindelheim Training Center or customer facility <ul style="list-style-type: none"> • Course composition: Combination of theory (10 %) and practical exercises (90 %)
Content	<ul style="list-style-type: none"> • Introduction to safety technology • Structure, function, service, and preventive maintenance activities for the motorized spindle with cross-feed (clamping set maintenance) • Introduction to special equipment and standard parts (sealing elements) • Removal and installation of a motorized spindle with cross-feed using the special equipment provided (prior arrangement required) • Checking and adjusting the motorized spindle position • Spindle 0° setting with special equipment • Configuration of the feed-out tool in tool management • NC programs and associated connections
Learning objective	<ul style="list-style-type: none"> • Using the technical documentation as a frame of reference • Presentation of specific knowledge used across all relevant technical departments • Service and inspection tasks • Carrying out repair activities

PART CHANGER	
Target group	Mechanical maintenance technicians or machine operators (prior arrangement required)
Requirement	<ul style="list-style-type: none"> • Comprehensive training on mechanical systems • Fundamental principles of machine operation and geometry • Experience with machine tools
Duration/venue	1 day – customer facility <ul style="list-style-type: none"> • Course composition: Combination of theory (10 %) and practical exercises (90 %)
Content	<ul style="list-style-type: none"> • Introduction to safety technology • Operating modes and how they are used • Part changer (structure) • Installation and setup of the axes and grippers • Checking and setting up the transfer position • Setting the GUDs, software cams, and part change program • Automatic mode and operation
Learning objective	<ul style="list-style-type: none"> • Using the technical documentation as a frame of reference • Correcting reference setting points • Localizing and rectifying mechanical faults • Service and inspection tasks • Correct and safe machine operation • Minimizing machine downtimes through anticipatory machine operation

LINEAR GANTRY	
Target group	Mechanical maintenance technicians, electrical maintenance technicians, or machine operators (prior arrangement required)
Requirement	<ul style="list-style-type: none"> • Comprehensive training on mechanical/electrical systems • Fundamental principles of machine operation • Experience with machine tools
Duration/venue	1 day – customer facility <ul style="list-style-type: none"> • Course composition: Combination of theory (10 %) and practical exercises (90 %)
Content	<ul style="list-style-type: none"> • Introduction to safety technology • Operating modes and how they are used • Linear gantry (structure) • Installation and setup of the axes and grippers • Checking and setting up the transfer position • Setting the GUDs, software cams, and part change program • Automatic mode and operation
Learning objective	<ul style="list-style-type: none"> • Using the technical documentation as a frame of reference • Correcting reference setting points • Localizing and rectifying mechanical/electrical faults • Service and inspection tasks • Correct and safe machine operation • Minimizing machine downtimes through anticipatory machine operation

SYSTEM SOLUTIONS

TRAINING MODULES

SPECIAL-PURPOSE MACHINES (MAINTENANCE)	
Target group	Mechanical maintenance technicians or electrical maintenance technicians (prior arrangement required)
Requirement	<ul style="list-style-type: none"> • Comprehensive training on mechanical/electrical systems • Fundamental principles of machine operation and geometry • Experience with machine tools
Duration/venue	1 day – customer facility (prior arrangement required) <ul style="list-style-type: none"> • Course composition: Combination of theory (10 %) and practical exercises (90 %)
Content	<ul style="list-style-type: none"> • Introduction to safety technology • Structure of the machine (assemblies, guides, drives, measuring systems, tool magazine) • Introduction to machine documentation • Service and preventive maintenance measures • Introduction to special equipment • Motorized spindle (inspection) • Machine zero points • Fluid technology
Learning objective	<ul style="list-style-type: none"> • Using the technical documentation as a frame of reference • Correcting reference setting points • Analyzing and rectifying mechanical faults • Replacing spare and wear parts • Service and inspection tasks • Localizing sources of faults • Carrying out repair activities

SPECIAL-PURPOSE MACHINES (OPERATION)	
Target group	<ul style="list-style-type: none"> • Specifically for operators • Also recommended for maintenance personnel, depending on their tasks
Requirement	<ul style="list-style-type: none"> • Knowledge of the functioning of automated machine tools • Basic course of the control system manufacturer • Training immediately follows process commissioning
Duration/venue	1 day – customer facility (prior arrangement required) <ul style="list-style-type: none"> • Course composition: Combination of theory (10 %) and practical exercises (90 %)
Content	<ul style="list-style-type: none"> • Safety instruction • Introduction to safety technology • Structure of the machine • Basic knowledge of machine operation • Operating modes and how they are used • Tool management system and how it is used • Detecting faults (troubleshooting) • Seating check
Learning objective	<ul style="list-style-type: none"> • Correct and safe machine operation • Minimizing machine downtimes through anticipatory machine operation • Sufficient knowledge of GROB system solutions

ROBOT TRAINING (BASIC COURSE)

Target group	<ul style="list-style-type: none"> • Specifically for operators • Also recommended for maintenance personnel, depending on their area of activity
Requirement	Knowledge of the functioning of robots
Duration/venue	1 day – customer facility <ul style="list-style-type: none"> • Course composition: Combination of theory (30 %) and practical exercises (70 %)
Content	Prior arrangement with the robot manufacturer necessary (KUKA, ABB, or FANUC) <ul style="list-style-type: none"> • Structure of a robot • Safety and modes of operation • Coordinate systems • Base and tool measurement • Determining the load data • Discussion of zero points • Selecting and running programs • Moving to transfer points and positions • Retracting the robot and creating/uploading backups • Backing up and reimporting programs
Learning objective	<ul style="list-style-type: none"> • Correct and safe robot operation • Minimizing downtimes through anticipatory machine operation • Expert knowledge about robots in GROB system solutions

ROBOT TRAINING (ADVANCED COURSE)

Target group	<ul style="list-style-type: none"> • Specifically for operators • Also recommended for maintenance personnel, depending on their area of activity
Requirement	Knowledge from the "Robot training (basic course)" training course
Duration/venue	1 day – customer facility <ul style="list-style-type: none"> • Course composition: Combination of theory (30 %) and practical exercises (70 %)
Content	Prior arrangement with the robot manufacturer necessary (KUKA, ABB, or FANUC) <ul style="list-style-type: none"> • Structure of a robot and the connected stations • Safe operation and system setup • Correct use of the operating modes • Handling individual work steps • Interface between robot and GROB system • Retracting the robot if faults occur • "Teaching" positions • Adjusting the program structure
Learning objective	<ul style="list-style-type: none"> • Correct and safe robot operation • Minimizing downtimes through anticipatory machine operation • Expert knowledge about robots in GROB system solutions

ASSEMBLY & E-MOBILITY

TRAINING MODULES



Our product range in the field of assembly & e-mobility

GROB offers its customers a broad spectrum of state-of-the-art training courses. With all expertise and core processes in-house, we can elaborate on your individual systems.

GROB offers diverse and customer-specific concepts for tomorrow's components through its **modular, flexible, and scalable solutions** for electric powertrains. Our broad range of training courses includes courses on stator technologies, rotor technologies, as well as battery cells and modules.

Must be
INDIVIDUALLY
customized

ASSEMBLY & E-MOBILITY OVERVIEW
Operation
Transport systems
Linear gantry
Mechanical maintenance
Electrical maintenance
Basics of camera systems (KEYENCE, BAUMER, COGNEX, etc.)
SIEMENS TIA – basic course on the GROB structure
BECKHOFF – basic course on the GROB structure
Laser basics based on TRUMPF
Robot training basic course
Robot training advanced course
Kistler spindle training

INDIVIDUAL TRAINING OPPORTUNITIES WITH GROB

It would be our pleasure to prepare a training concept to meet your specific needs. We do this by analyzing your needs and requirements to develop a tailored course that meets your personal demands.

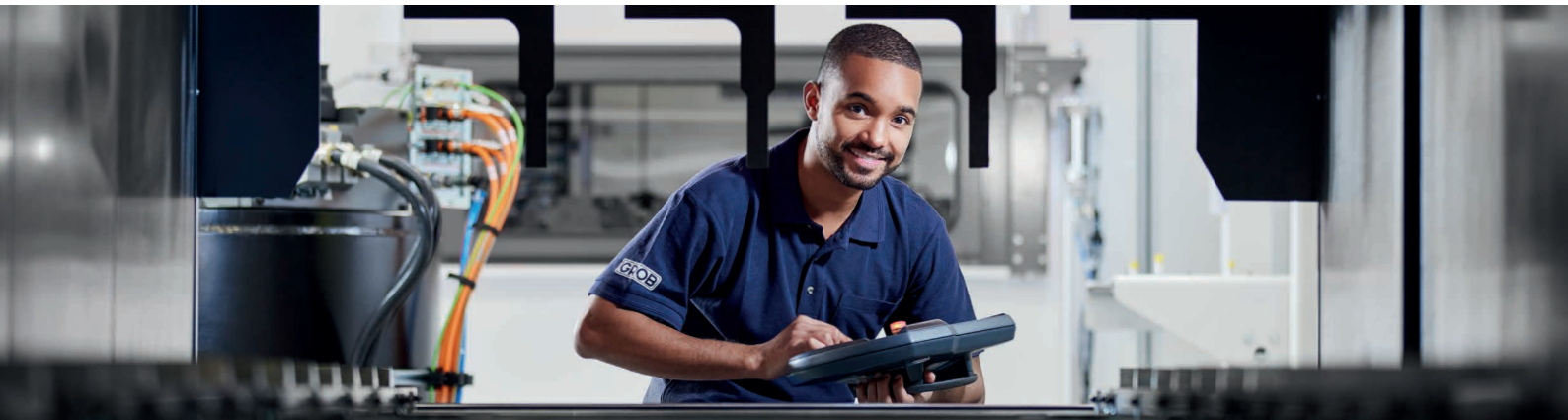
Please submit your written training inquiry/booking to:
 E-mail: training@grob.de
 Phone: +49 (8261) 996-7488



Further information on your training is available at:
www.grobgroup.com/service-schulungen/grob-servicespektrum

ASSEMBLY & E-MOBILITY

TRAINING MODULES



OPERATION	
Target group	Machine operators, mechanical and electrical maintenance technicians
Requirement	Basic knowledge of the assembly system
Duration	0.5 days per station (project-specific adaptation required) <ul style="list-style-type: none"> Course composition: Combination of theory (10 %) and practical exercises (90 %)
Content	<ul style="list-style-type: none"> Introduction to safety technology Structure of the machine Basic knowledge of machine operation Operating modes and how they are used Detecting faults (troubleshooting) Additional training course content must be adapted individually for the system.
Learning objective	<ul style="list-style-type: none"> Correct and safe machine operation Fast elimination and analysis of malfunctions Minimizing machine downtimes

TRANSPORT SYSTEMS	
Target group	Mechanical maintenance technicians
Requirement	Training on mechanical systems
Duration	1 day per station (project-specific adaptation required) <ul style="list-style-type: none"> Course composition: Combination of theory (10 %) and practical exercises (90 %)
Content	<ul style="list-style-type: none"> Structure and function Inspection Service and preventive maintenance measures Replacing wear parts Additional training course content must be adapted individually for the system.
Learning objective	<ul style="list-style-type: none"> Localizing and rectifying mechanical faults Replacing spare and wear parts Minimizing machine downtimes Carrying out inspection and service tasks

LINEAR GANTRY	
Target group	Mechanical maintenance technicians, electrical maintenance technicians, or machine operators (prior arrangement required)
Requirement	<ul style="list-style-type: none"> • Comprehensive training on mechanical/electrical systems • Fundamental principles of machine operation • Experience with assembly systems
Duration	1 day – customer facility <ul style="list-style-type: none"> • Course composition: Combination of theory (10 %) and practical exercises (90 %)
Content	<ul style="list-style-type: none"> • Introduction to safety technology • Operating modes and how they are used • Linear gantry (structure) • Installation and setup of the axes and grippers • Checking and setting up the transfer position • Setting the required parameters • Automatic mode and operation
Learning objective	<ul style="list-style-type: none"> • Using the technical documentation as a frame of reference • Correcting reference setting points • Localizing and rectifying mechanical/electrical faults • Service and inspection tasks • Correct and safe machine operation • Minimizing machine downtimes through anticipatory machine operation

MECHANICAL MAINTENANCE	
Target group	Mechanical maintenance technicians
Requirement	<ul style="list-style-type: none"> • Training on mechanical systems • Basic knowledge of hydraulic and pneumatic systems • Knowledge of preventive maintenance for assembly systems
Duration	0.5 days per station (project-specific adaptation required) <ul style="list-style-type: none"> • Course composition: Combination of theory (20 %) and practical exercises (80 %)
Content	<ul style="list-style-type: none"> • Introduction to safety technology • Structure of the machine (assemblies, guides, drives, measuring systems, etc.) • Service and preventive maintenance measures • Replacing wear parts Additional training course content must be adapted individually for the system.
Learning objective	<ul style="list-style-type: none"> • Localizing and rectifying mechanical faults • Replacing spare and wear parts • Minimizing machine downtimes • Carrying out inspection and service tasks

ASSEMBLY & E-MOBILITY TRAINING MODULES



ELECTRICAL MAINTENANCE

Target group	Maintenance technicians, electronics technicians
Requirement	<ul style="list-style-type: none"> • Training on electrical or electronic systems • Basic knowledge of drive and control technology, as well as the control system used
Duration	0.5 days per station (project-specific adaptation required) <ul style="list-style-type: none"> • Course composition: Combination of theory (50 %) and practical exercises (50 %)
Content	<ul style="list-style-type: none"> • Safety instruction • Functional description of electrical components • Data backup • Data recovery • Hardware replacement • Hardware settings • Diagnostic options • Error analysis and the correct approach to machine malfunctions
Learning objective	<ul style="list-style-type: none"> • Minimizing machine downtimes through preventive maintenance activities • Repair of electrical components • Localizing and rectifying electrical faults • Creation and use of data backups as a frame of reference

BASICS OF CAMERA SYSTEMS (KEYENCE, BAUMER, COGNEX, ETC.)

Target group	Maintenance technicians, electronics technicians
Requirement	Training on electrical or electronic systems
Duration	1 day (project-specific adaptation required) <ul style="list-style-type: none"> • Course composition: Combination of theory (60 %) and practical exercises (40 %)
Content	<ul style="list-style-type: none"> • Structure of a camera system • Functional description of electrical components • Hardware replacement • Hardware settings • Diagnostic options • Fault analysis
Learning objective	<ul style="list-style-type: none"> • Quality improvement through better understanding • Safe replacement of components • Localizing and rectifying faults • Creation and use of data backups

SIEMENS TIA – BASIC COURSE ON THE GROB STRUCTURE

Target group	Maintenance technicians, electronics technicians
Requirement	<ul style="list-style-type: none"> • Training on electronic systems • Basic knowledge of the control system used
Duration	3 days (project-specific adaptation possible) <ul style="list-style-type: none"> • Course composition: combination of theory (70 %) and practical exercises (30 %)
Content	<ul style="list-style-type: none"> • Introduction to the hardware • Introduction to the GROB structures • Basic knowledge of programming • Data backup • Diagnostic options • Data handling • Interface description • Sequences • Visualization
Learning objective	<ul style="list-style-type: none"> • Correct and safe machine operation • Knowledge of the GROB structures • Tracking data communication • Understanding the interfaces of sub-components

BECKHOFF – BASIC COURSE ON THE GROB STRUCTURE

Target group	Maintenance technicians, electronics technicians
Requirement	<ul style="list-style-type: none"> • Training on electronic systems • Basic knowledge of the control system used
Duration	2 days (project-specific adaptation possible) <ul style="list-style-type: none"> • Course composition: Combination of theory (70 %) and practical exercises (30 %)
Content	<ul style="list-style-type: none"> • Introduction to the hardware • Introduction to the GROB structures • Basic knowledge of programming • Data backup • Diagnostic options • Data handling • Interface description • Sequences • Visualization
Learning objective	<ul style="list-style-type: none"> • Correct and safe machine operation • Knowledge of the GROB structures • Tracking data communication • Understanding the interfaces of sub-components

ASSEMBLY & E-MOBILITY TRAINING MODULES



LASER BASICS BASED ON TRUMPF

Target group	Application technicians, operators
Requirement	Technical training
Duration	2 days – Mindelheim Training Center or customer facility <ul style="list-style-type: none"> • Course composition: Combination of theory (40 %) and practical exercises (60 %)
Content	<ul style="list-style-type: none"> • Safety instruction • Introduction to safety technology • Basics/structure of the various laser systems • Basic knowledge of machine operation • Detecting faults (troubleshooting)
Learning objective	<ul style="list-style-type: none"> • Correct and safe machine operation • Basic understanding of laser systems

ROBOT TRAINING (BASIC COURSE)

Target group	Machine operators, maintenance technicians
Requirement	Basic knowledge of automated systems
Duration	2 days <ul style="list-style-type: none"> • Course composition: Combination of theory (20 %) and practical exercises (80 %)
Content	<ul style="list-style-type: none"> • Safety during robot operation • Types of movement • Base and tool measurement • Selecting and running programs • "Teaching" points/correcting positions • Retracting robots • Creating and importing backups • Practical exercises
Learning objective	Safe operation of a robot

ROBOT TRAINING (ADVANCED COURSE)

Target group	<ul style="list-style-type: none"> • Specifically for operators • Also recommended for maintenance personnel, depending on their area of activity
Requirement	Knowledge from the "Robot training (basic course)" training course
Duration/venue	1 day – customer facility <ul style="list-style-type: none"> • Course composition: Combination of theory (30 %) and practical exercises (70 %)
Content	Prior arrangement with the robot manufacturer necessary (KUKA, ABB, or FANUC) <ul style="list-style-type: none"> • Structure of a robot and the connected stations • Safe operation and system setup • Correct use of the operating modes • Handling individual work steps • Interface between robot and GROB system • Retracting the robot if faults occur • "Teaching" positions • Adjusting the program structure
Learning objective	<ul style="list-style-type: none"> • Correct and safe robot operation • Minimizing downtimes through anticipatory machine operation • Expert knowledge about robots in GROB system solutions

KISTLER SPINDLE TRAINING

Target group	Mechanical maintenance technicians, machine operators, quality assurance personnel
Requirement	<ul style="list-style-type: none"> • Training on mechanical systems • Fundamental principles of machine operation
Duration/venue	1 day – Mindelheim Training Center or customer facility <ul style="list-style-type: none"> • Course composition: Combination of theory (10 %) and practical exercises (90 %)
Content	<ul style="list-style-type: none"> • Introduction to safety technology • Structure, function, service, and preventive maintenance activities for spindles • Spindle removal and installation, incl. referencing • Basic spindle settings • Operation of the maXYmos HMI (control system) • Basic structure of the programs • Evaluation of press-fitting programs • Calibration of press-fitting spindles
Learning objective	<ul style="list-style-type: none"> • Understanding the maXYmos control system • Service and inspection tasks • Carrying out repair activities • Correct and safe machine operation

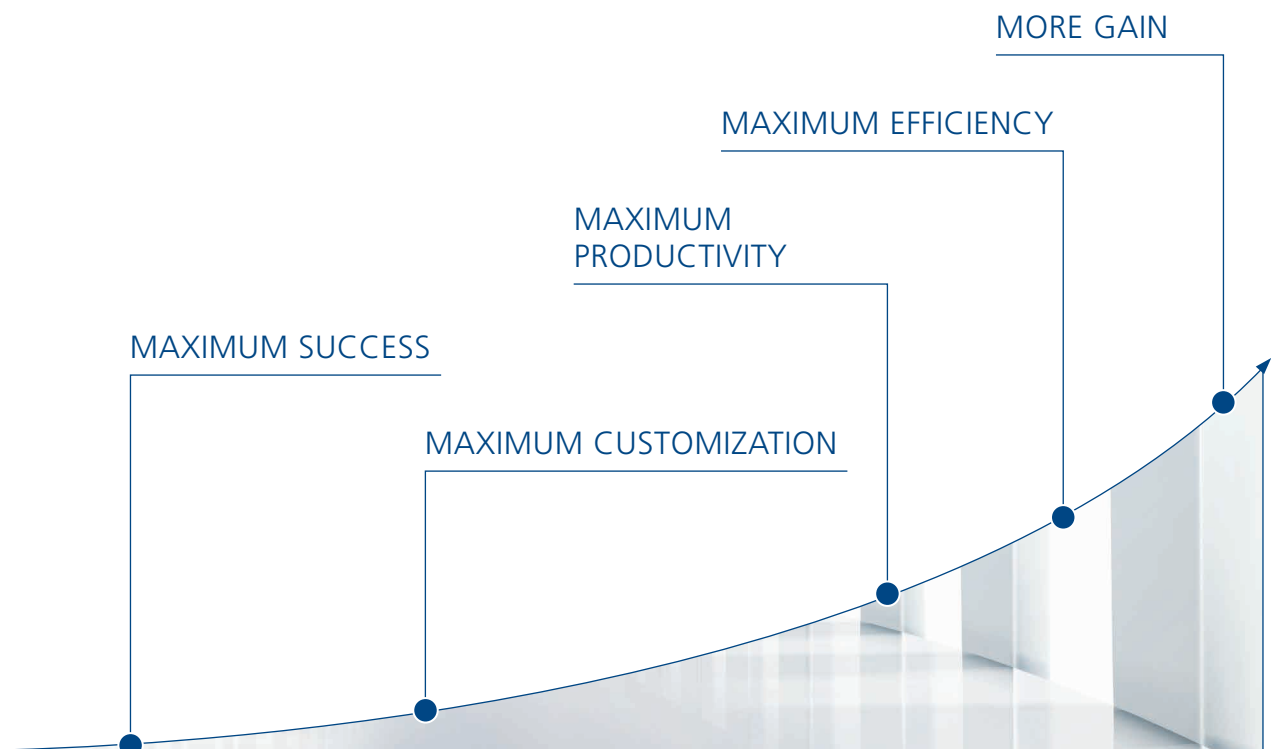
GENERAL CONDITIONS

GENERAL INFORMATION	
Registration	<p>Please provide the following information when you submit your training inquiry/application:</p> <ul style="list-style-type: none"> • Relevant training module • Number of participants, along with their first names and surnames (the maximum number of participants per course is limited to four, no minimum number of participants). • Your complete contact data (company name, address, phone number and e-mail address, as well as a contact for queries) <p>The training application is binding only after our e-mail confirmation!</p>
Training duration	<p>The training time is indicated to the customer in days, where one day lasts from 7 a.m. – 2 p.m. unless otherwise agreed. The total break time is 45 minutes, usually divided as follows: 15-minute morning break, 30-minute afternoon break.</p>
Language of the training	<p>German or English – if interpreters are required, these must be provided by the customer. We will of course assist you with your search for an adequate interpreter.</p>
Cancellation	<p>Cancellation of the training course is free of charge, provided that the written cancellation notice arrives at GROB no later than 14 days before the start of the course. Cancellations received after this time will incur a charge of 30 % of the course fees. If a participant fails to show up or leaves the course prematurely, the full fee will be charged.</p>
Agreed performance period	<p>The ordered training course(s) must be completed within three years from the date of order confirmation, otherwise the customer's claim to fulfillment expires and the service is considered to have been rendered.</p>
Course procedure	<p>All courses are held at GROB in professionally-equipped training rooms.</p>
Course materials	<p>Training materials are provided in German or the language of the supplied technical documentation. Please do not hesitate to contact us if other languages are required. The course materials are protected by copyright. They must not be copied or otherwise reproduced, either in whole or in part, without the trainer's prior consent. Use of online content: For training measures and content made available online by GROB (e.g., webinars, online courses, etc.), the customer receives a temporary, non-transferable right of use depending on the contract.</p>
Disclaimer	<p>The information provided in the courses and related documents is always given to the best of our knowledge and ability. GROB does not accept any liability for discrepancies or errors. The written information in particular does not constitute any assurance of quality or the equipment versions of the machines sold.</p>
Accommodation during the courses	<p>The participants must arrange their own accommodation. We will of course assist you with your search for overnight accommodation.</p>
Safety	<p>The training participants are obliged to observe and comply with all applicable safety regulations on GROB company premises. Specifically, the participants are obliged to wear safety footwear. Please bring safety footwear with you to the training.</p>
Costs	<p>We would be glad to inform you of all costs on request. Generally speaking, the costs are calculated per training day and participant.</p>
Meals	<p>On each training day, each participant receives drinks, snacks, and one lunch free of charge in the GROB company restaurant.</p>



Individual training concepts with GROB

If you are not sure which is the best course for you, we would be happy to create an individual training concept. We will work with you to analyze your needs and requirements to develop a tailored course that fulfills your personal expectations.



Analysis of

- ⊕ your needs and requirements

Design of

- ⊕ customized trainings courses

Training

- ⊕ tailored to your requirements



Already familiar with GROB e-learning?

If you are not sure which is the best course for you, we would be happy to create an individual training concept. We will work with you to analyze your needs and requirements to develop a tailored course that meets your personal expectations.



LEARN WHEN AND WHERE YOU WANT!



Digital training concepts with GROB

The e-learning offering is being continuously expanded to provide learning close to the workplace in a wide variety of areas at the "moment of need". The aim of digital training is to convey complex content to learners as interactively as possible.

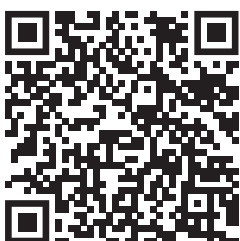
EXPAND AND DEEPEN YOUR KNOWLEDGE WITH DIGITAL TRAINING!

YOUR BENEFITS

- + Flexibility thanks to time- and place-independent learning
- + Individual topics
- + Ideal preparation for on-site training courses
- + Interactive modules
- + Adjustable learning speed for more efficient work
- + Central access to e-learning via the GROB campus

Multimedia learning is possible with e-learning on a wide variety of electronic devices, such as tablets, PCs and laptops.

AND WHAT IS BEST? LEARN WHEN AND WHERE YOU WANT!



Would you like to know more?

Contact us now – our **E-LEARNING TEAM** is always available for you!

Phone: +49 8261 996-2413

E-mail: info@campus.grobgroup.com

SPECIAL EQUIPMENT BOX

As versatile as our customers' demands

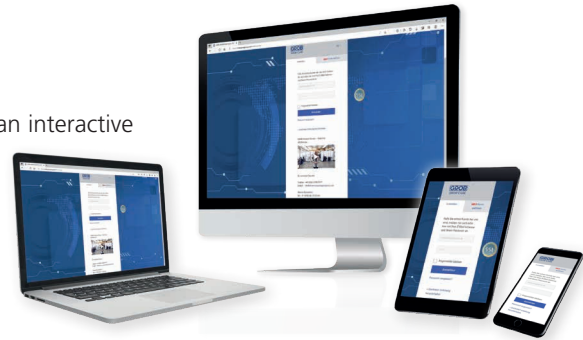
The box and its contents can be requested and ordered individually, specific to the machine type.



* The operating equipment displayed are examples. You can find the entire product range for the box in our equipment catalog.

GROB⁴Care webshop

Our service and maintenance portal not only gives you access to an interactive spare parts catalog including parts lists and technical drawings, but you can also order spare parts conveniently online: worldwide, at any time. GROB⁴Care is the platform for maintenance, scheduling, and purchasing.



- + Order spare parts online conveniently 24/7
- + Process reliability thanks to the highest degree of customization



Spare parts storage

We store spare parts for you at nine different locations worldwide. A high level of vertical integration, a good degree of standardization, and customer-oriented supply concepts guarantee that you receive the spare and wear parts you need on time.

Service and inspection

As part of the annual inspection, our experts determine the actual condition of your machine and check the assemblies relevant for safety and function using our machine-specific checklists. Possible sources of error can be detected and eliminated in advance before they ever become a problem.

- + Provision of the necessary inspection equipment by GROB
- + Regular monitoring and calibration of the inspection equipment
- + Meaningful and highly accurate results



Good service knows no bounds

From our 24-hour service and comprehensive range of spare parts and training courses to professional machine maintenance: the GROB service spectrum offers you a comprehensive range of services and is available to you worldwide thanks to our global production facilities and service branches.



GROB SERVICE



For all who care about their production!

As a constant and reliable partner, our top priority is maximum productivity of your machine:
WORLDWIDE, A MACHINE LIFE LONG!

PRODUCTION SAFETY

- ⊕ Worry-free production and avoiding losses of production
 - Service Level Agreement
 - Express service
 - Spare parts supply
 - Motorized spindle service
 - Preventive maintenance & inspection



QUALITY & OUTPUT

- ⊕ Quantity in optimized quality and in the shortest time
 - Condition analysis
 - Cycle time optimization
 - GROB Technical Academy
 - Mechanical & electrical repairs

ECONOMIC VIABILITY & SUSTAINABILITY

- ⊕ Cost reduction due to long and efficient machine running time
 - Overhaul
 - PCU/NCU retrofit
 - Retrofittings
 - Digitalization GROB-NET⁴Industry



WANT TO KNOW MORE?

A detailed description of the individual GROB service products can be found in our **BROCHURE** on the **GROB AFTER SALES SERVICE** in our GROB download center.



GROB product range

UNIVERSAL MACHINING CENTERS

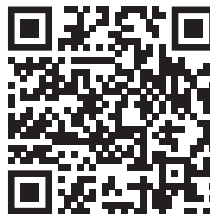
- ⊕ 4-axis universal milling machining centers, 5-axis universal milling machining centers, 5-axis universal mill-turn machining centers, additional tool magazines, pallet changer

SYSTEM MACHINES

- ⊕ One- and two-spindle G-modules, large machining centers, modular special-purpose machines, machining centers for frame structure parts

E-MOBILITY

- ⊕ Production systems for electric motors, Assembly systems for battery cells and fuel cells



SOFTWARE

- ⊕ Modular web applications by GROB-NET⁴Industry

AUTOMATION

- ⊕ PSS-R, PSS-T, PSS-L, flexible manufacturing systems, GRC, turn-key manufacturing lines

ASSEMBLY LINES

- ⊕ Individual assembly units, customer-specific assembly systems, motor assembly and gear assembly

Our promise to you:

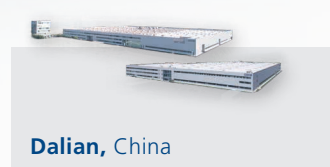
- ⊕ All core expertise (sales, project management, engineering, production, assembly, commissioning and customer service) is concentrated under one roof
- ⊕ Permanent contact person throughout the entire project cycle, if required
- ⊕ Our production facility offers you optimized vertical integration, and enables us to dynamically control capacities and respond to bottle neck situations in a flexible manner



GROB WORLDWIDE



PRODUCTION PLANTS



Would you like to contact us?

The teams at our sites will be pleased to assist you further.



www.grobgroup.com