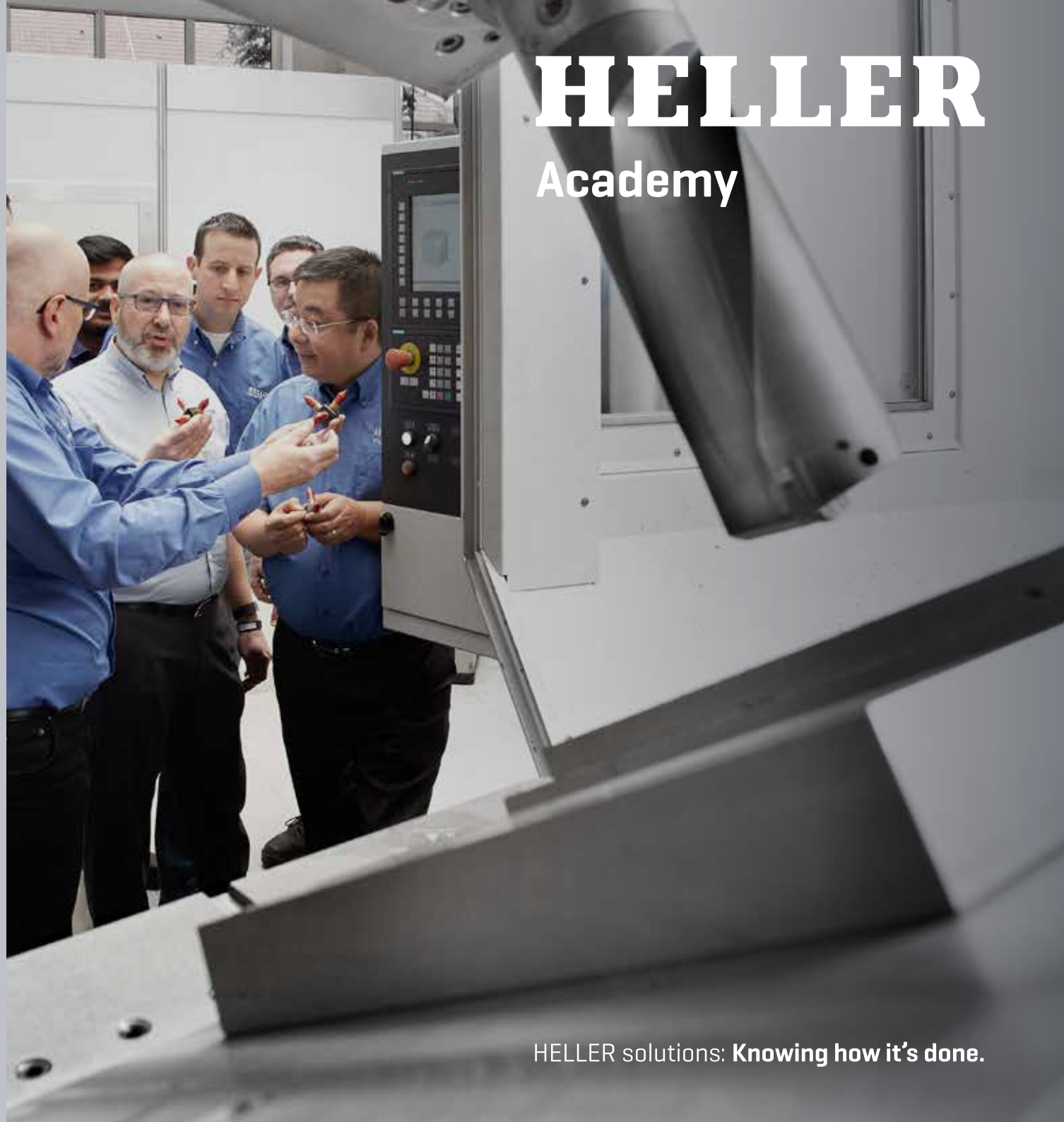


Global training programme



HELLER

Academy

HELLER solutions: **Knowing how it's done.**

Become a

HELLER Specialist

Get the best out of your machine through qualified employees

Get the best out of your machine through qualified employees. Our top priorities are to improve the efficiency and availability of your machines, minimise scrap rates and prolong their service life through professional maintenance routines. Qualified employees help you achieve peak performance while keeping costs low and revenue high! With 30 years of training experience, we know exactly what counts. Because we continuously share knowledge and experience with our customers, we can keep adapting our training programme to meet the latest challenges in machining and engineering technology. We guarantee quality and success through one-to-one training advice, ongoing advancement of our trainers and global knowledge sharing by our departments. Our HELLER Academy offers your employees a pool of expertise and an ideal learning atmosphere. In practical training sessions, they learn how to exploit the potentials of their HELLER machine and ensure its reliability in their day-to-day work. We look forward to welcoming you to the HELLER Academy!

Your Management Team at the Global HELLER Academy





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Welcome to the HELLER Academy

Our trainers are here waiting to make you and your employees HELLER specialists. Objective: effective and highly-productive work with a HELLER machine or production facility. The training expertise encompasses the current HELLER series H, F and C, as well as MC 20, MMC 15, CBC and RFK/DRZ/RFN. Our courses, customised courses and training programmes can also be flexibly combined for other machine types and machines from older model series.





Quality

- _ **Customer training "Made by HELLER"**
Optimised training quality with globally standardised contents and all-encompassing documentation.
- _ **Latest learning methodology**
Use of the latest learning support tools, including simulation software and HELLER CNC ProfiTrainer.
- _ **Latest HELLER original technology**
The HELLER Academy uses the latest machine types, mechanical components and assemblies for its customer training.



Qualification

- _ **HELLER customer trainers**
Our HELLER customer trainers have many years of professional experience and are highly qualified. We employ Train-the-Trainer initiatives to ensure continuous development and high personal performance.
- _ **Top industrial level**
By sharing knowledge and collaborating with other industrial training centres, we move in the best circles and guarantee a high level of customer training.
- _ **HELLER trains HELLER**
The HELLER Academy is also a training partner for HELLER employees and guarantees their high qualification level.



Competence

- _ **All HELLER generations**
We train your employees on both the latest HELLER series, and also on predecessor generations of our machines and control systems.
- _ **HELLER Development Partner**
Our close collaboration with HELLER Development and Design ensures a constant flow of information between the customer's practical applications and technology development.



From the basic course to expert training or coaching

The complete offering

The customer training programme offered by the HELLER Academy is designed for you to exploit the entire potential of your HELLER machines step-by-step:

- _ basic and advanced courses [operation, programming, repairs]
- _ themed workshops
- _ individual training sessions

A modular customer training structure achieves 100% of the machine's potential

[example of the 5-axis programming training course]

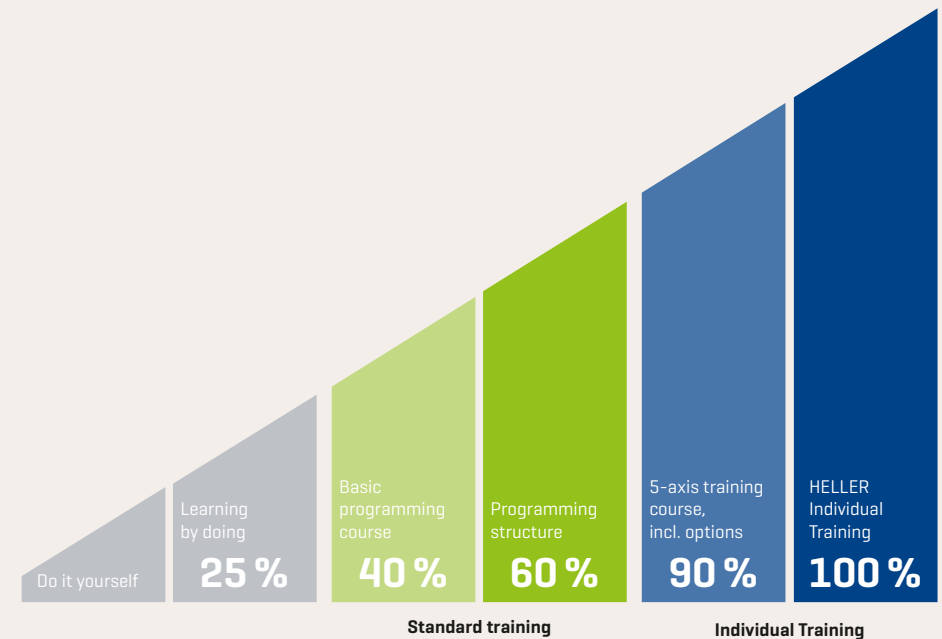
HELLER Standard Training

The standardised, diverse course programme offers fixed dates and costs. It covers all current HELLER series. The basic and advanced courses encompass all specific subjects that help you to operate a HELLER machine economically and reliably:

- _ operation
- _ programming
- _ mechanical/mechatronic repairs
- _ repairs electrics

HELLER Individual Training

In addition to our standard courses, we offer individual training for every phase of your machine and production system lifecycle. We work with you to develop a training programme that is matched specifically to your needs in terms of content and duration. The Individual Training sessions allow you exploit the entire potential of your HELLER machines for your tasks.



The course programme at a glance

	H	F	C	HF	MC 20	RFK/DRZ/RFN	MCC 15	CBC		
🔧 Operation	840D sl	Fanuc 31-iB	840D sl	iTNC530	840D sl	840D sl	840D sl	840D sl	840D sl	
Basic operating course	EU / SA / A / NA	EU / SA / A / NA	EU / SA / A / NA	EU	EU / A / NA	-	-	-	-	
Advanced operating course	EU / SA / A / NA	EU / SA / A / NA	EU / SA / A / NA	EU	EU / A / NA	-	-	-	-	
Workshop rack-type magazine	EU / A / NA	-	EU / A	-	EU / A	-	-	-	-	
Operating course for C-head operation	-	-	EU / SA / A / NA	-	EU / A / NA	-	-	-	-	
Operating course for Tilting head operation	-	-	EU / A	-	EU / A / NA	-	-	-	-	
Operating course	-	-	-	-	-	EU	EU / SA / A / NA	EU	EU	EU
📄 Programming	840D sl	Fanuc 31-iB	840D sl	iTNC530	840D sl	840D sl	840D sl	840D sl	840D sl	
Basic programming course	EU / SA / A / NA	EU / SA / A / NA	EU / SA / A / NA	EU	EU / A / NA	-	EU / A	-	-	-
Advanced programming course	EU / SA / A / NA	SA / NA	EU / SA / A / NA	-	EU / A / NA	-	EU / A	-	-	-
Measuring probe programming HELLER cycles	EU / SA / A / NA	EU / SA / NA	EU / SA / A / NA	-	EU / A / NA	EU	EU / SA / A / NA	-	-	-
Measuring probe programming Siemens cycles	EU / SA / A / NA	SA	EU / SA / A / NA	-	EU / A / NA	EU	EU / SA / A / NA	-	-	-
Measuring probe programming and kinematics	-	-	-	EU	-	-	-	-	-	-
Process monitoring programming	EU / SA / A / NA	EU / SA	EU / SA / A / NA	-	EU / A / NA	EU	EU / SA	-	-	-
Programming lateral/end surface	EU	-	EU	-	EU	EU	-	-	-	-
Adaptive control programming	EU / SA	SA	EU / SA	-	EU	EU	SA	-	-	-
HELLER Technology Cycles	EU / SA / A / NA	SA	EU / SA / A / NA	-	EU / A / NA	EU	SA / NA	-	-	-
Cycle time optimisation	EU / SA	SA	EU / SA	-	EU	EU	SA	-	-	-
Tangential turning programming	EU	-	EU	-	EU	EU	-	-	-	-
Facing head programming	EU / NA	NA	EU / SA	-	A	-	-	-	-	-
AutoCal programming	-	-	EU / SA / A / NA	-	EU / A	-	EU	-	-	-
5-axis programming	-	-	EU / SA / A / NA	-	EU / A / NA	-	-	-	-	-
Turning workshop	-	-	-	-	EU / A / NA	-	-	-	-	-
Programming course	-	-	-	-	-	EU	EU / SA / A / NA	EU	EU	-
🔧 Mechanical systems	840D sl	Fanuc 31-iB	840D sl	iTNC530	840D sl	840D sl	840D sl	840D sl	840D sl	840D sl
Initial diagnosis and mechanical system maintenance	EU / SA / A / NA	EU / SA / A / NA	EU / SA / A / NA	-	EU / A / NA	EU	EU / SA / A / NA	EU	EU	EU
Initial diagnosis and mechatronic system maintenance	EU / NA	EU / NA	EU	-	EU	-	NA	EU	-	-
⚡ Electrical system	840D sl	Fanuc 31-iB	840D sl	iTNC530	840D sl	840D sl	840D sl	840D sl	840D sl	840D sl
Initial diagnosis, electrical system	EU / SA / A / NA	EU / SA / A / NA	EU / SA / A / NA	EU	EU / A / NA	EU	EU / SA / A / NA	EU	EU	EU

Operation



Optimised use of your HELLER machine from the outset

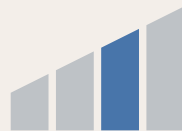
- _ Avoid damage to the machine through improper handling.
- _ Benefit from HELLER solutions and experience optimised operating convenience.



Basic course



Advanced



Options



Individual training



Basic operating course H/F/C-series



VV.0982011.900S

Siemens 840D sl control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

CNC basic knowledge acc. to DIN/ISO

Objectives:

Proper and safety-oriented programming/setup of the control using the user interface of the F-series

Targeted audience:

- _ operating personnel
- _ office programmer
- _ workshop programmers

Course contents:

- _ machine structure at a glance
- _ co-ordinate system and reference points
- _ operating and display elements
- _ programme structure and management
- _ setting and correcting zero points
- _ HELLER pallet management system
- _ applying the access level concept
- _ creating and changing tool data
- _ importing and exporting data

Advanced operating course H/F/C-series



VV.0986000.900S

Siemens 840D sl control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

Basic operating course or corresponding skill level

Objectives:

Proper and safety-oriented operation and setup of the machine using the H-/F-/C-series user interface, rectifying machine malfunctions

Targeted audience:

- _ operating personnel
- _ workshop programmers

Course contents:

- _ safety instructions
- _ max. load relay
- _ chain-type magazine operation
- _ changing and correcting tool data
- _ inserting and removing tools [chain]
- _ HELLER system cycles for tool and pallet change
- _ rectifying malfunctions in the pallet, tool and magazine management systems
- _ save traversing with open safety doors
- _ running in, modifying and correcting programmes
- _ accessing the NC programme
- _ practical exercises on training equipment and machines

Workshop rack-type magazine H/F/C-series



VV.0980901.900S

Siemens 840D sl control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

Advanced operating course or corresponding skill level

Objectives:

Learning how to operate a rack-type tool magazine and deal with typical malfunctions

Targeted audience:

- _ operating personnel
- _ machine operators

Course contents:

- _ specifics of rack-type magazine operation
- _ creating specific tool data
- _ loading parallel to machining [specifics]
- _ architecture of tool storage
- _ new functions in the tool management system
- _ rectifying malfunctions during a tool change
- _ rectifying malfunctions in the magazine management system
- _ practical exercises/examples on the machine



C-head operation F/C-series



VV.0981000.900S

Siemens 840D sl control

Course duration: 0.5 days, 5 teaching units of 45 min

Preconditions:

Advanced operating course or corresponding skill level

Objectives:

Learning about special features operating a machine with C-head

Targeted audience:

- _ operating personnel
- _ machine operators

Course contents:

- _ machine structure and functions
- _ safety instructions
- _ swivel head functionality with CYCLE800 and TRAORI
- _ retraction options after a break and power failure
- _ practical exercises/examples on the machine

Tilting head operation F series



VV.0981010.900S

Siemens 840D sl control

Course duration: 0.5 days, 5 teaching units of 45 min

Preconditions:

Advanced operating course or corresponding skill level

Objectives:

Learning the specifics of a machine with C-head

Targeted audience:

- _ operating personnel
- _ machine operators

Course contents:

- _ machine structure and functions
- _ safety instructions
- _ swivel head functionality
- _ retraction options after a break and power failure
- _ practical exercises/examples on the machine

Operating course HF series



VV.0986010.900S

Siemens 840D sl control

Course duration: 4 days, 40 teaching units of 45 min

Preconditions:

CNC basic knowledge acc. to DIN/ISO

Objectives:

Proper and safety-oriented programming/setup of the control using the HF-series user interface

Targeted audience:

- _ operators
- _ workshop programmers

Course contents:

- _ machine structure at a glance
- _ operating and display elements and buttons
- _ defining and changing zero points
- _ programme manager and data management
- _ modifying and correcting programmes/cycles
- _ HELLER operating panel and Xtends
- _ tool/pallet management
- _ malfunction rectification on the tool/pallet changer
- _ safe traversing in operating modes 2/3
- _ block search and re-entry
- _ practical exercises on training equipment and machines
- _ overview of maintenance activities and test instructions



Operating course MC 20-series



VS.9000050.900Z

Siemens 840D sl control

Course duration: 4.5 days, 45 teaching units of 45 min

Preconditions:

CNC basic knowledge acc. to DIN/ISO

Objectives:

Proper and safety-oriented programming/setup of the control using the MC 20 series user interface

Targeted audience:

- _ operators
- _ office programmers
- _ workshop programmers

Course contents:

- _ machine structure at a glance
- _ co-ordinate system and reference points
- _ operating and display elements
- _ programme structure and management
- _ importing and exporting data
- _ setting and correcting zero points
- _ hands-on exercises on training equipment and the machine
- _ tool management



Operating course RFK/DRZ/RFN-series



VS.9000050.900Z

Siemens 840D sl control

Course duration: 3 days, 30 teaching units on RFK/RFN and DRZ
5 days, 50 teaching units combined

Preconditions:

CNC basic knowledge acc. to DIN/ISO

Objectives:

Proper and safety-oriented programming/setup of the control using the RF-series user interface

Targeted audience:

- _ operating personnel
- _ office programmer
- _ workshop programmers

Course contents:

- _ machine structure and functions
- _ safety instructions
- _ co-ordinate system and reference points
- _ basic operating steps on the 840D sl
- _ operating and display elements (HMI)
- _ programme and tool selection, tool management
- _ changing tools/cutting edge measurement (DRZ)
- _ replacing interchangeable parts (changeover)
- _ operating the correction system PCS
- _ rectifying malfunctions
- _ automatic mode
- _ operator-specific machine maintenance



Operating course MCC 15



VS.9000050.900Z

Siemens 840D sl control

Course duration: 4.5 days, 45 teaching units of 45 min

Preconditions:

The participants must possess a good level of experience in the operation of CNC machine tools.

Objectives:

Machine operation without assistance, entering workpiece corrections, tool changes, changeovers, performing basic maintenance tasks

Targeted audience:

- _ setter
- _ machine supervisors
- _ machine operators

Course contents:

- _ overview of machine structure, coordinate system and reference points
- _ setting and correcting zero points
- _ operating and display elements
- _ programme structure and management
- _ importing and exporting data
- _ tool management
- _ workpiece handling
- _ rectifying malfunctions
- _ running in, modifying and correcting programmes



Operation CBC



VS.9000050.900Z

Siemens 840D sl

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

CNC basic knowledge acc. to DIN/ISO

Objectives:

Proper and safety-oriented programming/setup of the control using the user interface

Targeted audience:

- _ setter
- _ operating personnel
- _ office programmer
- _ workshop programmers

Course contents:

- _ SIEMENS basic principles [operating modes]
- _ Heller setup functions and screen overview
- _ maintenance topics for operators
- _ setup functions:
 - _ wire change
 - _ workpiece change
 - _ tool change
 - _ Cleaning [tool screen gripper adapter]
 - _ parameters [process]
 - _ explanation of the NC programme/programme structure
 - _ M-functions
 - _ G-Functions

Basic operating course H series



VV.0982011.900F

Fanuc 31i-B control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

CNC basic knowledge acc. to DIN/ISO

Objectives:

Proper and safety-oriented programming/setup of the control using the user interface of the H-series

Targeted audience:

- _ setter
- _ operating personnel
- _ office programmer
- _ workshop programmers

Course contents:

- _ machine structure at a glance
- _ co-ordinate system and reference points
- _ operating and display elements
- _ programme structure and management
- _ setting and correcting zero points
- _ HELLER pallet management system
- _ creating and changing tool data
- _ importing and exporting data

Advanced operating course H series



VV.0986000.900F

Fanuc 31i-B control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

Basic operating course or corresponding skill level

Objectives:

Proper and safety-oriented operation of the machine using the F/H-series user interface. Machine fault elimination

Targeted audience:

- _ operating personnel
- _ workshop programmers

Course contents:

- _ safety instructions
- _ max. load relay
- _ chain-type magazine operation
- _ changing and correcting tool data
- _ inserting and removing tools [chain]
- _ HELLER system cycles for tool and pallet change
- _ rectifying malfunctions in the pallet, tool and magazine management systems
- _ save traversing with open safety doors
- _ running in, modifying and correcting programmes
- _ accessing the NC programme
- _ warm-up
- _ hands-on exercises on training equipment and machines



Workshop rack-type magazine H series



VV.0980901.900F

Fanuc 31i-B control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

Advanced operating course or corresponding skill level

Objectives:

Learning how to operate a rack-type tool magazine and deal with malfunctions

Targeted audience:

- _ operating personnel
- _ setter
- _ machine operators

Course contents:

- _ specifics of rack-type magazine operation
- _ creating specific tool data
- _ loading parallel to machining [specifics]
- _ architecture of tool storage
- _ new functions in the tool management system
- _ rectifying malfunctions during a tool change
- _ rectifying malfunctions in the magazine management system
- _ practical exercises/examples on the machine

Basic operating course F series



VV.0982010.900H

Heidenhain iTNC 530 control

Course duration: 1 days, 10 teaching units of 45 min

Preconditions:

CNC basic knowledge acc. to DIN/ISO

Objectives:

Proper and safety-oriented programming/setup of the control using the user interface of the F-series

Targeted audience:

- _ operating personnel
- _ office programmer
- _ workshop programmers

Course contents:

- _ operating panel
- _ HELLER OEM interface
- _ tool handling
- _ place table
- _ pallet management
- _ softkey bars

Advanced operating course F series



VV.0986000.900H

Heidenhain iTNC 530 control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

Basic operating course or corresponding skill level

Objectives:

Proper and safety-oriented operation and setup of the machine using the user interface of the F-series. Rectification of machine malfunctions

Targeted audience:

- _ operating personnel
- _ workshop programmers

Course contents:

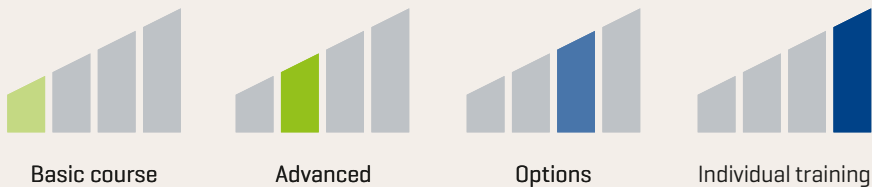
- _ configuration
- _ integrate proprietary comparison programme
- _ debug
- _ comparison options
- _ generate setup file
- _ programming station
- _ TNCRemoNT
- _ special operating modes
- _ diagnostics area
- _ programme administration
- _ machine options [handwheel operation, AFC, ACC]
- _ remote diagnostics

Programming

Correct programming of your HELLER machine for high-performance, economic machining



- _ Experience intelligent HELLER solutions and benefit from correct programming.
- _ Use our comprehensive support, from the basic course through to cycle time optimisation on your workpiece





Basic programming course H/F/C-series



VV.0982012.900S

Siemens 840D sl control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

CNC basic knowledge acc. to DIN/ISO

Objectives:

Proper and safety-oriented programming/setup of the control using the H-/F-/C-user interface.

Targeted audience:

- _ operating personnel
- _ office programmer
- _ workshop programmers

Course contents:

- _ machine structure at a glance
- _ co-ordinate system and reference points
- _ operating and display elements
- _ programme structure and management
- _ setting and correcting zero points
- _ HELLER pallet management system
- _ applying the access level concept
- _ creating and changing tool data
- _ importing and exporting data

Advanced programming course H/F/C-series



VV.0986100.900S

Siemens 840D sl control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

Basic programming course or corresponding skill level

Objectives:

Consolidate knowledge on how to create NC programmes independently without programming system

Targeted audience:

- _ office programmer
- _ workshop programmers

Course contents:

- _ programme structure and management with the directory instruction
- _ preparatory conditions and information beyond the DIN standards
- _ adjustable and programmable zero point offset
- _ coordinate rotation in the main plane
- _ transfer parameters for Siemens cycles
[typical programme examples]

5-axis programming F/C-series



VV.0982900.900S

Siemens 840D sl control

Course duration: 3 days, 30 teaching units of 45 min

Preconditions:

Advanced programming course or corresponding skill level

Objectives:

Learning how to create machining programmes for 5-axis machines

Targeted audience:

- _ programmers
- _ setter
- _ machine operators

Course contents:

- _ addressing the 5-axis problem
- _ language commands of the Sinumerik 840D
- _ creating programme examples



Measuring probe programming HELLER cycles



VV.0982300.900S

Siemens 840D sl control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

Advanced programming course or corresponding skill level

Objectives:

Safe handling of HELLER measuring probe cycles and the measuring probe on the machine

Targeted audience:

- _ office programmer
- _ workshop programmers

Course contents:

- _ structure and function of the measuring probe
- _ field of application and achievable accuracy
- _ introduction: HELLER cycles for measuring and calibration
- _ using measuring cycles in the NC programme
- _ handling the measuring probe
- _ practical exercises with measuring probes on the machine



Measuring probe programming Siemens cycles



VV.0986900.900S

Siemens 840D sl control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

Advanced programming course or corresponding skill level

Objectives:

Safe handling of the Siemens measuring cycles and the measuring probe on the machine and using measuring cycle "CYCLE996"

Targeted audience:

- _ office programmer
- _ workshop programmers

Course contents:

- _ structure and function of the measuring probe
- _ field of application and achievable accuracy
- _ Siemens cycles for measuring and calibration
- _ using measuring cycles in the NC programme and in JOG mode
- _ handling the measuring probe
- _ practical exercises with measuring probes on the machine



AutoCal programming F/C-series



VV.0986901.900S

Siemens 840D sl control

Course duration: 1 days, 10 teaching units of 45 min

Preconditions:

Advanced programming course or corresponding skill level and Siemens measuring cycles

Objectives:

Safe handling of the Siemens measuring cycles and the measuring probe on the machine and using measuring cycle "CYCLE996"

Targeted audience:

- _ office programmer
- _ workshop programmers

Course contents:

- _ probe calibration with Siemens cycles
- _ programming the "Cycle 996"
- _ use of "Cycle996"
- _ measuring kinematics



Process monitoring programming H/F/C-series



VV.0986300.900S

Siemens 840D sl control

Course duration: 3 days, 30 teaching units of 45 min

Preconditions:

Advanced programming course or corresponding skill level

Objectives:

Learning about opportunities for tool monitoring with focus on power monitoring

Targeted audience:

- _ office programmer
- _ workshop programmers

Course contents:

- _ tool life counter and quantity counter
- _ in-process Tool Breakage Monitoring
- _ power monitoring [IPM]
- _ replacement tool strategy
- _ alternative strategy
- _ using IPM in operation



Facing head programming H series



VV.0982910.900S

Siemens 840D sl control

Course duration: 1.5 days, 15 teaching units of 45 min

Preconditions:

Advanced programming course or corresponding skill level

Objectives:

Learning how to create programmes with integrated HELLER facing slide

Targeted audience:

- _ programmers
- _ setter
- _ machine operators

Course contents:

- _ learning the specifics of the HELLER facing slide
- _ safety information
- _ language commands of the Sinumerik 840D
- _ creating programme examples



HELLER Technology Cycles H/F/C-series



VV.0986400.900S

Siemens 840D sl control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

Advanced programming course or corresponding skill level

Objectives:

Using HELLER Technology Cycles

Targeted audience:

- _ office programmer
- _ workshop programmers

Course contents:

- _ HELLER technology cycles at a glance
- _ differences from standard cycles
- _ programming examples with HELLER technology cycles



Tangential turning programming H series



VV.0987000.900S

Siemens 840D sl control

Course duration: 1.5 days, 15 teaching units of 45 min

Preconditions:

Advanced programming course or corresponding skill level

Objectives:

Learning how to create programmes with tangential turning

Targeted audience:

- _ office programmer
- _ workshop programmers

Course contents:

- _ Siemens tangential control
- _ using HELLER cycles for tangential turning
- _ creating programme examples

Programming lateral/ end surfaces H/F/C-series



VV.0987100.900S

Siemens 840D sl control

Course duration: 1.5 days, 15 teaching units of 45 min

Preconditions:

Advanced programming course or corresponding skill level

Objectives:

Learning how to create programmes with lateral surface/front face milling

Targeted audience:

- _ office programmer
- _ workshop programmers

Course contents:

- _ milling of lateral surface TRACYL
- _ milling of front face TRANSMIT
- _ creating programme examples

Turning workshop C series



VV.0987200.900S

Siemens 840D sl control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

Advanced course on programming and 5-axis programming or corresponding skill level

Objectives:

Learning about the turning functionality and how to use and programme HELLER and Siemens turning cycles

Targeted audience:

- _ office programmer
- _ workshop programmers

Course contents:

- _ conditions for turning
- _ tool compensations
- _ setting turning tool with CYCLE800
- _ Siemens turning cycles
- _ programming and practical exercises



Adaptive control programming H/F/C-series



VV.0987300.900S

Siemens 840D sl control

Course duration: 1.5 days, 15 teaching units of 45 min

Preconditions:

Advanced programming course or corresponding skill level

Objectives:

Learning how to create programmes with adaptive control

Targeted audience:

- _ office programmer
- _ workshop programmers

Course contents:

- _ functionality of adaptive control
- _ programming synchronous actions
- _ creating programme examples

Cycle time optimisation H/F/C-series



VV.0987400.900S

Siemens 840D sl control

Course duration: 1.5 days, 15 teaching units of 45 min

Preconditions:

Advanced programming course or corresponding skill level

Objectives:

Learning the options for cycle time optimisation

Targeted audience:

- _ office programmer
- _ workshop programmers

Course contents:

- _ idle time optimisation
- _ reducing chip-to-chip time (GV variables)
- _ path characteristics (exact positioning/path control mode)
- _ optimising the machining data
- _ dynamic spindle speed change
- _ adaptive control
- _ IPM: OVR control

Programming course MC 20-series



VS.9000051.900Z

Siemens 840D sl control

Course duration: 4.5 days, 45 teaching units of 45 min

Preconditions:

CNC basic knowledge acc. to DIN/ISO

Objectives:

Proper and safety-oriented programming/setup of the control using the user interface of the MC 20 series

Targeted audience:

- _ operating personnel
- _ office programmer
- _ workshop programmers

Course contents:

- _ co-ordinate system and reference points
- _ programme structure and management with the directory instruction
- _ preparatory conditions and information beyond the DIN standards
- _ adjustable and programmable zero point offset
- _ coordinate rotation in the main plane
- _ transfer parameters for Siemens cycles
- _ exemplary programme examples
- _ HELLER-specific cycles
- _ explanation of customer programmes



Programming course HF series



VV.0986120.900S

Siemens 840D sl control

Course duration: 4.5 days, 45 teaching units of 45 min

Preconditions:

CNC basic knowledge acc. to DIN/ISO

Objectives:

Proper and safety-oriented external programming without programming system

Targeted audience:

- _ NC programmer
- _ setter

Course contents:

- _ machine structure at a glance
- _ co-ordinate system and reference points
- _ programme structure/management
- _ HELLER programming commands/parameters
- _ 3+2 programming CYCLE800

Programming course RFK/DRZ/RFN-series



VS.9000051.900Z

Siemens 840D sl control

Course duration: 4.5 days, 45 TU of 45 min with RFK/RFN
3.5 days, 35 TU of 45 min with DRZ
7 days, 70 TU of 45 min combined

Preconditions:

CNC basic knowledge acc. to DIN/ISO

Objectives:

Proper and safety-oriented programming/setup of the control using the RFK/DRZ/RFN-series

Targeted audience:

- _ operating personnel
- _ office programmer
- _ workshop programmers

Course contents:

- _ introduction to the structure and functions of the machine
- _ work area, axes, coordinate system and reference points
- _ introduction to milling technology
- _ introduction to the programming language APRAM [RFK]
- _ programming in DIN [DRZ]
- _ programming the PCS correction system
- _ programming the main programme
- _ defining the tools
- _ important HELLER cycles
- _ reviewing the customer programme

Basic programming course MCC 15



VS.9000051.900Z

Siemens 840D sl control

Course duration: 4.5 days, 45 teaching units of 45 min

Preconditions:

The participants should already have good basic knowledge of CNC technology. Most importantly, they should already have experience in the programming of numerically-controlled machine tools.

Objectives:

Acquiring the relevant skills for external, manual creation of NC programmes for machining crankshafts

Targeted audience:

- _ programmers
- _ work planner
- _ setter

Course contents:

- _ machine structure at a glance
- _ co-ordinate system and reference points
- _ programme structure/management
- _ HELLER programming commands/parameters
- _ tool management/place assignment
- _ 3+2 programming CYCLE800
- _ re-entry parameters [STEP management]



Basic programming course H series



VV.0982012.900F

Fanuc 31i-B control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

CNC basic knowledge acc. to DIN/ISO

Objectives:

Proper and safety-oriented programming/operation of the control using the user interface of the H-series

Targeted audience:

- _ operating personnel
- _ workshop programmers

Course contents:

- _ machine structure at a glance
- _ co-ordinate system and reference points
- _ operating and display elements
- _ programme structure and management
- _ setting and correcting zero points
- _ HELLER pallet management system
- _ creating and changing tool data
- _ importing and exporting data

Advanced programming course H series



VV.0986100.900F

Fanuc 31i-B control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

Basic programming course or corresponding skill level

Objectives:

Consolidate knowledge on how to create NC programmes independently without programming system

Targeted audience:

- _ operating personnel
- _ office programmer
- _ workshop programmers

Course contents:

- _ control overview
- _ programme structure and management
- _ adjustable and programmable zero point offset
- _ coordinate rotation in the main plane
- _ introduction to the subroutine technology
- _ G/M-functions
- _ machine-specific parameters

Measuring probe programming H series



VV.0982300.900F

Fanuc 31i-B control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

Advanced programming course or corresponding skill level

Objectives:

Safe handling of HELLER measuring probe cycles and the measuring probe on the machine

Targeted audience:

- _ office programmer
- _ workshop programmers

Course contents:

- _ creating tool data
- _ using the calibration and measuring cycles



Process monitoring programming H series



VV.0986300.900F

Fanuc 31i-B control

Course duration: 2 days, 20 teaching units of 45 min

Preconditions:

Advanced programming course or corresponding skill level

Objectives:

Learning about opportunities for tool monitoring with focus on power monitoring

Targeted audience:

_ setter
_ programmers

Course contents:

_ various methods for process monitoring
_ SBBK [fast tool break monitoring]
_ IPM
_ measuring probe

Basic programming course F series



VV.0982012.900H

Heidenhain iTNC 530 control

Course duration: 2 days, 40 teaching units of 45 min

Preconditions:

CNC basic knowledge acc. to DIN/ISO

Objectives:

Proper and safety-oriented programming/setup of the control using the user interface of the F-series

Targeted audience:

_ office programmer
_ workshop programmers

Course contents:

_ programme administration
_ create programmes
_ simulation
_ DIN ISO programming
_ programming cycle
_ programme application
_ pallet management
_ tool handling
_ place table
_ M commands
_ Plane functions [swivelling]
_ AFC programming

Measuring probe programming and kinematics F-series



VV.0982300.900H

Heidenhain iTNC 530 control

Course duration: 1.5 days, 20 teaching units of 45 min

Preconditions:

Basic programming course or corresponding skill level

Objectives:

Safe handling of HELLER measuring cycles and the measuring probe on the machine

Targeted audience:

_ office programmer
_ workshop programmers

Course contents:

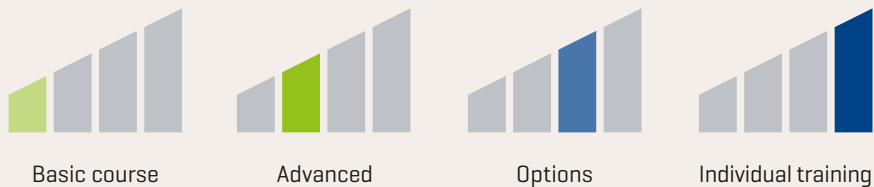
_ measuring probe structure
_ measuring probe cycles
_ application and programming
_ machine kinematics
_ KinematikOpt. application Cycle

Mechanical and mechatronic systems



Mechanical repairs to your HELLER machine to ensure reliable function

- _ Avoid unscheduled downtimes.
- _ Minimise downtimes through trained repair personnel.





Initial diagnosis and mechanical system maintenance H series



VV.0986603.900Z

Siemens 840D sl control

Course duration: 4.5 days, 45 teaching units of 45 min

Preconditions:

Mechanical training

Objectives:

Learning about the initial diagnosis and maintenance of certain assemblies in accordance with the repair instructions

Targeted audience:

_ maintenance engineers mechanics

Course contents:

- _ machine overview
- _ media
- _ feed drives
- _ calibrating measuring systems
- _ machining unit
- _ tool handling
- _ workpiece handling
- _ maintenance-specific operation



Initial diagnosis and mechanical system maintenance F/C-series



VV.0986604.900Z

Siemens 840D sl control

Course duration: 4.5 days, 45 teaching units of 45 min

Preconditions:

Mechanical training

Objectives:

Learning about the initial diagnosis and maintenance of certain assemblies in accordance with the repair instructions

Targeted audience:

_ maintenance engineers mechanics

Course contents:

- _ machine overview
- _ media
- _ feed drives
- _ calibrating measuring systems
- _ machining unit
- _ tool handling
- _ workpiece handling
- _ maintenance-specific operation



Initial diagnosis and mechanical system maintenance HF series



VV.0986605.900Z

Siemens 840D sl control

Course duration: 3 days, 30 teaching units of 45 min

Preconditions:

Mechanical training

Objectives:

Learning about the initial diagnosis and maintenance of certain assemblies in accordance with the repair instructions

Targeted audience:

_ maintenance engineers mechanics

Course contents:

- _ overview of machine
- _ basic functions of operation
- _ hydraulic, pneumatics and lubrication diagrams
- _ diagnostics
- _ maintenance



Initial diagnosis and mechanical system maintenance MC 20-series



VS.9000052.900Z

Siemens 840D sl control

Course duration: 4.5 days, 45 teaching units of 45 min

Preconditions:

Mechanical training

Objectives:

Learning about the initial diagnosis and maintenance of certain assemblies in accordance with the repair instructions

Targeted audience:

_ maintenance engineers mechanics

Course contents:

- _ machine overview
- _ media
- _ feed drives
- _ calibrating measuring systems
- _ machining unit
- _ tool handling
- _ workpiece handling
- _ maintenance-specific operation



Initial diagnosis and mechanical system maintenance RFK/DRZ/RFN-series



VS.9000052.900Z

Siemens 840D sl control

Course duration: 3 days, 30 teaching units on RFK/RFN and DRZ
5 days, 50 teaching units combined

Preconditions:

Mechanical training

Objectives:

Learning about the initial diagnosis and maintenance of certain assemblies in accordance with the repair instructions

Targeted audience:

_ maintenance engineers mechanics

Course contents:

- _ machine structure and functions
- _ safety instructions
- _ machine documentation [hydraulic, pneumatic and lubrication systems]
- _ operating the CNC control for troubleshooting and maintenance [operating mode 2]
- _ data backup
- _ measuring systems and NC-axes
- _ replacement of motors, measuring systems, chucks and interchangeable parts
- _ working with parts lists and spare parts
- _ exercises: Error simulation
- _ machine-specific maintenance and repair work
- _ tool measurement, measuring probe setup [DRZ]



Initial diagnosis and mechanical system maintenance MCC 15



VS.9000052.900Z

Siemens 840D sl control

Course duration: 4.5 days, 45 teaching units of 45 min

Preconditions:

The participants should already have good basic knowledge of CNC technology.

Objectives:

Performing maintenance and servicing tasks without assistance, error identification, determining further actions required

Targeted audience:

_ maintenance engineer, mechanical systems

Course contents:

- _ machine overview
- _ media
- _ feed drives
- _ calibrating measuring systems
- _ machining unit
- _ tool handling
- _ workpiece handling
- _ maintenance-specific operation



Initial diagnosis and mechanical system maintenance CBC



VS.9000052.900Z

Siemens 840D sl control

Course duration: 3 days, 30 teaching units of 45 min

Preconditions:

Hybrid training [mechanical/electrical]

Objectives:

Performing maintenance and servicing tasks without assistance, error identification, determining further actions required

Targeted audience:

_ maintenance engineer, mechatronic systems

Course contents:

- _ replacement of ball screw and motor
- _ media [lubrication; gases]
- _ explaining and setting reference points of all NC-axes
- _ maintenance points, based on maintenance instructions [IA]
- _ CBC-specific topics:
 - _ exhaust air system
 - _ Nitrogen [N] supply/regulation
 - _ adapter changer
 - _ wire/magazine changer
 - _ tool clamping device
 - _ replacement and cleaning/tool maintenance



Initial diagnosis mechatronic systems H series



VV.0986802.900S

Siemens 840D sl control

Course duration: 4.5 days, 45 TU of 45 min

Preconditions:

Hybrid training [mechanical/electrical]

Objectives:

Learning the basics of the machine, control and safe handling of data, as well as maintenance of certain assemblies

Targeted audience:

_ Hybrid maintenance engineers

Course contents:

- _ structure of the machine and important main assemblies
- _ overview of machine function and control components
- _ maintenance-specific operation
- _ NCU backup data
- _ practical exercises on assemblies
- _ calibrating measuring systems
- _ diagnostics options
- _ troubleshooting



Initial diagnosis mechatronic systems F/C-series



VV.0986803.900S

Siemens 840D sl control

Course duration: 4.5 days, 45 teaching units of 45 min

Preconditions:

Hybrid training [mechanical/electrical]

Objectives:

Learning the basics of the machine, control and safe handling of data, as well as maintenance of certain assemblies

Targeted audience:

_ Hybrid maintenance engineers

Course contents:

- _ structure of the machine and important main assemblies
- _ overview of machine and control components
- _ maintenance-specific operation
- _ NCU backup data
- _ practical exercises on assemblies
- _ calibrating measuring systems
- _ diagnostics options
- _ troubleshooting



Initial diagnosis and mechatronic system maintenance MCC 15



VS.9000052.900Z

Siemens 840D sl control

Course duration: 4.5 days, when combined with RFK/DRZ training [otherwise 4.5 d electrics, 4.5 d mechanics]

Preconditions:

The participants should already have good basic knowledge of CNC technology & Siemens 840D sl.

Objectives:

Performing maintenance and servicing tasks without assistance, error identification, determining further actions required

Targeted audience:

_ maintenance engineer, mechatronic systems

Course contents:

_ overview of machine and control components
_ media
_ feed drives
_ calibrating measuring systems
_ machining unit
_ tool handling
_ workpiece handling
_ maintenance-specific operation
_ troubleshooting

Initial diagnosis mechatronic systems H series



VV.0986802.900F

Fanuc 31i-B control

Course duration: 4.5 days, 45 teaching units of 45 min

Preconditions:

Hybrid training [mechanical/electrical]

Objectives:

Learning the basics of the machine, control and safe handling of data, as well as maintenance of certain assemblies

Targeted audience:

_ Hybrid maintenance engineers

Course contents:

_ structure of the machine and important main assemblies
_ overview of machine function and control components
_ maintenance-specific operation
_ NCU backup data
_ practical exercises on assemblies
_ calibrating measuring systems
_ diagnostics features
_ troubleshooting

Initial diagnosis and mechanical system maintenance F series



VV.0986604.900Z

Heidenhain iTNC 530 control

Course duration: 4.5 days, 45 teaching units of 45 min

Preconditions:

Mechanical training

Objectives:

Learning about the initial diagnosis and maintenance of certain assemblies in accordance with the repair instructions

Targeted audience:

_ maintenance engineers mechanics

Course contents:

_ machine overview
_ media
_ feed drives
_ calibrating measuring systems
_ machining unit
_ tool handling
_ workpiece handling
_ maintenance-specific operation

Electrics

Ensuring the faultless and reliable electrical function of your HELLER machine

- _ Safeguard your system data and hence your complete know-how.
- _ Repair-based instructions enable you to carry out work on even complex assemblies.



Basic course



Advanced



Options



Individual training





Initial diagnosis, electrical system H/F/C-series



VV.0986703.900S

Siemens 840D sl control

Course duration: 3 days, 30 teaching units of 45 min

Preconditions:

Basic knowledge of the Siemens 840D pl CNC control advantageous

Objectives:

The participants will learn how to localise and limit malfunctions. Furthermore, knowledge of operation in malfunction situations and understanding of electromechanical sequences will be consolidated.

Targeted audience:

_ maintenance engineers electricians

Course contents:

- _ machine structure and overview of control components
- _ safety instructions
- _ interfaces
- _ software tools
- _ software data backup
- _ topology
- _ replacing hardware components
- _ calibrating measuring systems
- _ PLC and cycle diagnostics
- _ troubleshooting
- _ machine-specific components and settings



Initial diagnosis, electrical system HF series



VV.0986704.900S

Siemens 840D sl control

Course duration: 3 days, 30 teaching units of 45 min

Preconditions:

Basic knowledge of the Siemens 840D pl CNC control advantageous

Objectives:

The participants will learn how to localise and limit malfunctions. Furthermore, knowledge of operation in malfunction situations and understanding of electromechanical sequences will be consolidated.

Targeted audience:

_ maintenance engineers electricians

Course contents:

- _ machine structure and overview of control components
- _ electrical documentation and safety precautions
- _ software data backup
- _ topology
- _ structure & functionality of the control interface
- _ operating principle of measuring systems
- _ machine-specific components and settings
- _ troubleshooting



Initial diagnosis, electrical system MC 20-series



VV.9000053.900Z

Siemens 840D sl control

Course duration: 3 days, 30 teaching units of 45 min

Preconditions:

Basic knowledge of the Siemens 840D pl CNC control advantageous

Objectives:

The participants will learn how to localise and limit malfunctions. Furthermore, knowledge of operation in malfunction situations and understanding of electromechanical sequences will be consolidated.

Targeted audience:

_ maintenance engineers electricians

Course contents:

- _ machine structure and overview of control components
- _ safety instructions
- _ interfaces
- _ software tools
- _ software data backup
- _ topology
- _ replacing hardware components
- _ calibrating measuring systems
- _ PLC and cycle diagnostics
- _ troubleshooting
- _ machine-specific components and settings



Initial diagnosis, electrical system RFK/DRZ/RFN-series



VV.9000053.900Z

Siemens 840D sl control

Course duration: 4.5 days, 45 teaching units of 45 min

Preconditions:

Basic knowledge of the Siemens 840D pl CNC control advantageous.

Objectives:

The participants will learn how to localise and limit malfunctions. Furthermore, knowledge of operation in malfunction situations and understanding of electromechanical sequences will be consolidated.

Targeted audience:

_ maintenance engineers electricians

Course contents:

- _ machine structure and functions
- _ electrical documentation and safety precautions
- _ electrical assemblies and control components
- _ interfaces and function of the measuring probe [DRZ]
- _ software tools
- _ data backup and backup of the CF-card
- _ replacing hardware components
- _ PLC programme structure, machine-specific cycles and S7 communication
- _ topology and DriveCLiQ
- _ calibrating measuring systems
- _ troubleshooting, diagnosis



Initial diagnosis, electrical system MCC 15



VV.9000053.900Z

Siemens 840D sl control

Course duration: 4.5 days, 45 teaching units of 45 min

Preconditions:

Basic knowledge of Siemens 840D sl and/or other control systems advantageous.

Objectives:

The participants will learn how to localise and limit malfunctions. Furthermore, knowledge of operation in malfunction situations and understanding of electromechanical sequences will be consolidated.

Targeted audience:

_ maintenance engineers electricians

Course contents:

- _ machine structure and overview of control components
- _ electrical documentation and safety precautions
- _ interfaces
- _ software tools
- _ software data backup
- _ topology
- _ replacing hardware components
- _ calibrating measuring systems
- _ PLC and cycle diagnostics
- _ troubleshooting
- _ machine-specific components and settings



Initial diagnosis, electrical system CBC



VV.9000053.900Z

Siemens 840D sl control

Course duration: 3 days, 30 teaching units of 45 min

Preconditions:

Basic knowledge of Siemens 840D sl and/or other control systems advantageous.

Objectives:

The participants will learn how to localise and limit malfunctions. Furthermore, knowledge of operation in malfunction situations and understanding of electromechanical sequences will be consolidated.

Targeted audience:

_ maintenance engineers electricians

Course contents:

- _ data backup, series commissioning, CF-card
- _ user data, frequency converter
- _ control cabinet/component replacement of Siemens components
- _ DriveCLiQ, settings, topology, parameters
- _ safety Integrated, F-module, checksums, servo motor exchange
- _ Elmatech setup and parameters
- _ Bronkhorst nitrogen volumetric flow control
- _ Optris temperature sensor
- _ Belimo overview [exhaust air regulation]
- _ measuring the wire speed
- _ measuring the nitrogen volumetric flow
- _ measuring the exhaust air
- _ Trace Analyse [process]
- _ troubleshooting, error messages, diagnosis, alarm log



Initial diagnosis, electrical system H-series



VV.0986703.900F

Fanuc 31i-B control

Course duration: 4.5 days, 45 teaching units of 45 min

Preconditions:

Basic knowledge of the Fanuc 160i or 18i CNC control advantageous

Objectives:

The participants will learn how to localise and limit malfunctions. Furthermore, knowledge of operation in malfunction situations and understanding of electromechanical sequences will be consolidated.

Targeted audience:

_ maintenance engineers electricians

Course contents:

_ structure of the machine and important main assemblies
_ overview of machine function and control components
_ maintenance-specific operation
_ interfaces
_ software tools
_ software data backup
_ replacing hardware components
_ calibrating measuring systems
_ troubleshooting



Initial diagnosis, electrical system H-series



VV.0986703.900H

Heidenhain iTNC 530 control

Course duration: 4.5 days, 45 teaching units of 45 min

Preconditions:

_ knowledge of NC machine tools
_ basics of electrical/electronic systems
_ basic knowledge of PC and Windows operation

Objectives:

Participants will understand the functional principles of the HEIDENHAIN control, drives, position and speed measuring devices, the machine tool and the interaction of these components. They will learn and use diagnostics options on the control and routines for troubleshooting. They will learn to localise malfunctions by means of error messages or error patterns and restore the functionality of the machine by replacing devices or components.

Targeted audience:

_ service specialists
_ maintenance specialists
_ commissioning specialists

Course contents:

_ knowledge of NC machine tools
_ basics of electrical/electronic systems
_ basic knowledge of PC and Windows operation
_ introduction to display and operation
_ notes on installing and wiring
_ hard drive
_ data interfaces and data backup
_ PLC diagnostics
_ HSCI bus diagnostics
_ integrated monitoring system
_ measuring device interface
_ reference fixture
_ interface to the drives
_ diagnostics options and troubleshooting
_ notes on replacements
_ checking the screen display, keyboard, handwheel, keys, machine operating panel



Last Minute training

You too can benefit from our last minute offers. Due to the high demand and the difficulties this causes for finding individual dates, we wish to make you a special offer. If there are still places left on our courses, you can book a top quality HELLER training course at a preferential rate. Find out more here:



www.heller.biz/en/services/customer-training/last-minute



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HELLER Academy Shop

Supporting products and services can be obtained from our shop.



ProfiTrainer

HELLER ProfiTrainer Siemens 840D sl

This small pendant of a large CNC-controlled HELLER machine tool offers the same functionalities, and also offers further benefits for the training of your skilled personnel for 3-, 4- and 5-axis operation. Details can be found at:

www.heller.biz/en/profitrainer



If you are interested, please contact the organisation for your country in writing or by telephone, see next page.



SinuTrain operating and programming software

SinuTrain, the NC-programming station identical to the control system, brings SINUMERIK Operate, including animated machine operating panel to the PC in the most realistic way. SinuTrain is available with a single or classroom license [18 workstations].

SinuTrain – import commissioning archive option

You need the Import commissioning archive option and the associated licence in order to replicate it in SinuTrain via the series commissioning of your machine.

Installation and instruction

The custom modification to the real machine is implemented by the HELLER Trainer during the installation and instruction phase. HELLER uses the "Import commissioning archive option" to help you replicate and selectively use your machine in SinuTrain.



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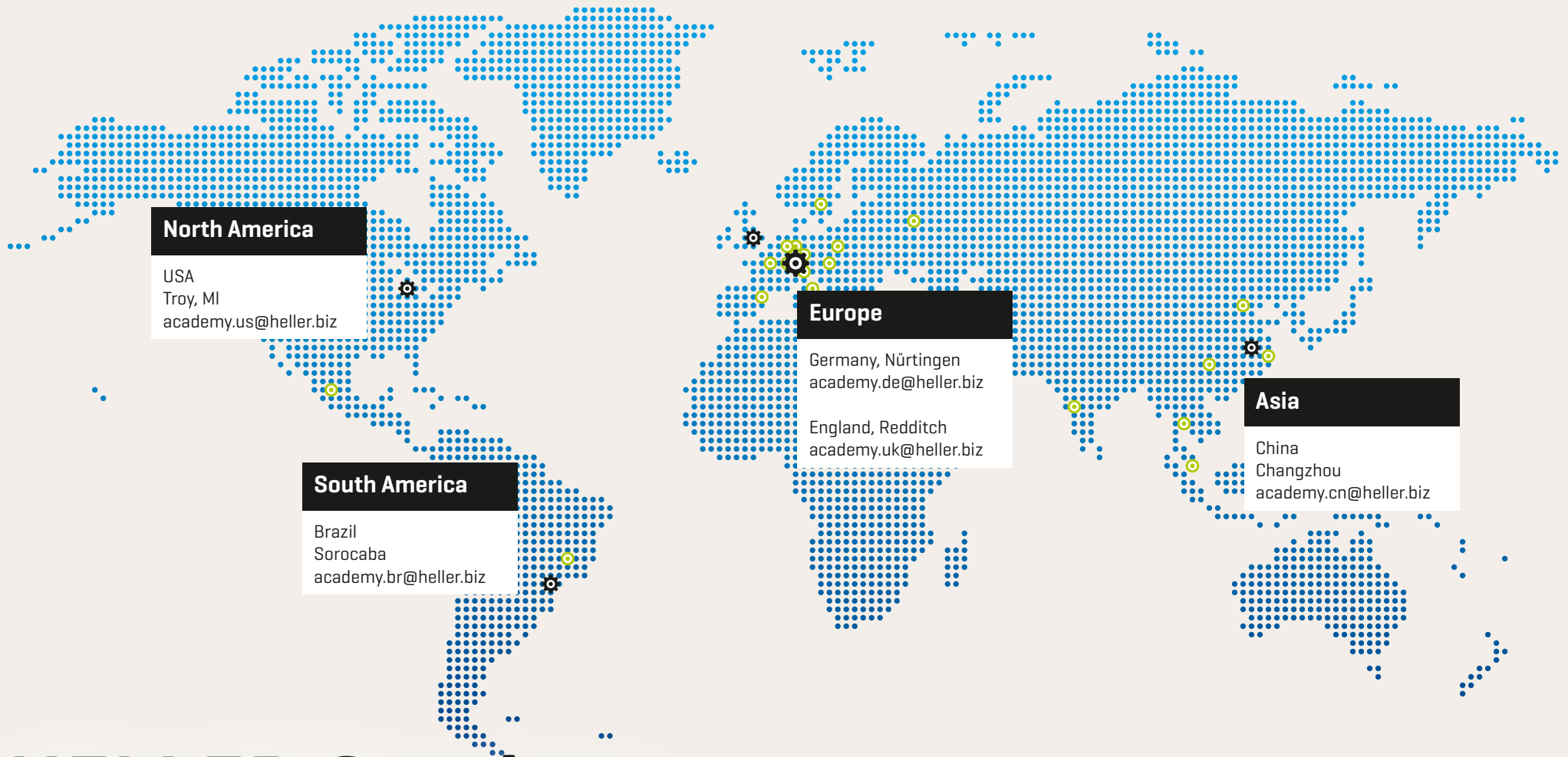


Course timings

Our courses normally start at 9.00 hrs.
We will notify you if the times change.

Miscellaneous

Dates, availability and customer-specific
training on request. Please also refer to
our separate conditions of enrolment,
which you will receive with the training
offer. To participate on our courses, you
are required to wear safety shoes.



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HELLER Services – Global Training

We offer made by HELLER knowledge transfer in partnership worldwide at our sites in the metalworking centres. A practical-based training programme throughout the entire process: from machine operation and programming to servicing and repairs to the electrical, mechatronic and mechanical systems. Upon request, we can also provide training sessions matching your needs in-situ on your own machines.

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