

UNITED FOR YOUR SUCCESS

MAN AND MACHINE

*TRAINING PROGRAM
INJECTION MOLDING MACHINERY 2022*



KraussMaffei

Pioneering Plastics

IN PRESENCE TRAINING HANDS-ON. INDIVIDUALIZED. FLEXIBLE.

Practical relevance, individuality, flexibility—the training opportunities from KraussMaffei are perfectly tailored to your needs. They help you to optimize the use of your system's potential while minimizing downtime. The goal is to achieve peak productivity with your injection molding system.

The content of our training courses includes a theoretical part and intensive practical exercises right on our systems. Our training courses encompass: setup and operation, configuration of special machine functions to increase availability and product quality, maintenance of electrical and hydraulic systems, troubleshooting, as well as how to operate and program the automation unit.

Your specialist knowledge will be furthered in practical exercises. Individuality is important to us. That is why you work in small groups on a training system. This allows our trainers to address your needs on an individual basis.

For all participants in combined seminars, we offer a final exam that allows you to further expand on everything you have learned and confirm your learning achievement with a successfully completed test. Then you will be awarded our KraussMaffei Test Certificate—an industry-recognized qualification.



For detailed information about our In Presence Training, visit:
kraussmaffei.com/trainingIMM

Look out for this icon:



YOUR BENEFITS:

- Extensive hands-on training, right on the system
- Small groups and ample time for specific questions and problem-solving strategies

ONLINE TRAINING

LIVE. DIGITAL. EFFECTIVE.

Our online training takes place live and in real time for all participants. This means direct contact with the trainers is guaranteed at all times. Work through short and effective online units to further optimize your production expertise.

Take advantage of the benefits of the digital training world. You can visit our online training courses in compact modules. Here is some of what we offer:

Production Management

Documenting production for a stable production process

APC 1 and 2

Stability, precision and cost-efficiency in production

Core-pulling 1 Basic

Programming core-pulling processes

Core-pulling 2 Expert

Complex core-pulling processes and functions

Core-pulling 3 MultInject or Robot

Complex core-pulling processes in conjunction with MultInject or robot

LRX WizardX

Using the programming wizard

LRX Safety Monitoring

Optimizing the area monitoring

YOUR BENEFITS:

- Interactive live training
- No travel involved
- Talk with experienced trainers

Whether you are sampling/automation personnel, an assistant foreman, a foreman, the head of production, management or a managing director—we have a suitable seminar for every target group.

Learn about our additional online content at:
kraussmaffe.com/trainingIMM

Look out for this icon:



BLENDDED TRAINING ONLINE. IN PRESENCE. COMBINED.

With blended training you combine traditional in-person units with the new world of online training. Choose the right path to learning achievement for yourself and your employees, ensuring continuously high availability of your systems through reduced risk of operator error.

We offer two different variants here:

For example, for our "KS - Plastics and Injection Molding Processes" training you can choose the online variant, laying the foundation for later participation in the in presence training courses (such as "B1 MC6 – Operating and setting up the MC6 control system") to deepen your knowledge.

Look out for these icons:



Or, for example, choose the training called "BLR MC6 – Combined operation and programming of linear robots with the MC6 control system". The first part of this uses online training to impart the linear robot's most important functions, which you can put into practice right away on your systems. To reinforce and deepen the knowledge you gained online, you come to the training center to learn the compact and effective practical unit from us.

Look out for this icon:



YOUR BENEFITS:

- Choose the format that is right for you
- Take advantage of the benefits of both training worlds

Learn about our additional blended content at:

kraussmaffe.com/training/IMM

INDIVIDUALIZED TRAINING

Your individualized training program will be based on blended training—a continuing education concept tailored to your company. Depending on the specific task, this may consist of individual components such as In presence or online training or may include a variety of components. This ensures quick successes for your team and efficient handling of the system.



YOUR BENEFITS:

- Individualized training sessions: topics, duration (practical training) and training format adapted to your needs
- Development of expertise depending on the qualification of your employees

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[***kraussmaffe.com/trainingIMM***](https://kraussmaffe.com/trainingIMM)





DIGITAL PRODUCTS

INFORMATION. CONSULTING. TRAINING.

Cloud-based solutions. Cost-effective work. Large data memory. Perfect process analyses. Service contacts worldwide. You find all of this with our digital products.

blueBox

blueBox is a remote system solution that connects all machines to the company network and allows for remote access to these machines.

dataXplorer

Process optimization, troubleshooting and diagnostics, process transparency and seamless documentation

forensicExpert

Individualized process data analysis and consultation

smartAssist

Our global support is the basis for your local long-term success on site!

socialProduction

Production. Communication. Mobile. Intuitive. Process support and production monitoring



Interested?

Get customized advice at:









Phone: +49 89 88 99 41 50

Email: Schulung.SGM@kraussmaffei.com

kraussmaffei.com/trainingIMM

YOUR GUIDE TO SUCCESS MACHINE AND SYSTEM: OPERATION & MAINTENANCE

COMBINED TRAINING










OPERATION / PROGRAMMING	MACHINE	<p>KS Plastics and Injection Molding Processes</p> <p>2 days <i>Page 10</i></p> 	<p>B1 MC5/MC6 Operation and setup</p> <p>3 days <i>Page 11</i></p>	<p>B2 MC5/MC6 Process and product enhancement</p> <p>2 days <i>Page 12</i></p>	<p>B3 MC5/MC6 Stable processes and quality assurance</p> <p>2 days <i>Page 13</i></p>	<p>BM MC6 = B1 + B2 Combined Training 5 days <i>Page 14</i></p> 
	SYSTEM	 				<p>BA LR MC6 = B1 + LR1 Combined Training 5 days <i>Page 20</i></p> 
MAINTENANCE	HYDRAULIC SYSTEM	<p>HM1 Components and Hydraulic Systems</p> <p>2 days <i>Page 30</i></p> 	<p>HM2 CX/GX/MX Hydraulic system/mechanical system</p> <p>3 days <i>Page 31</i></p>	<p>HM3 CX/GX/MX Calibration</p> <p>2 days <i>Page 32</i></p>		<p>eHM MC6 CX/GX/MX = E + HM2 Combined Training 5 days <i>Page 33</i></p> 
	ELECTRICAL SYSTEM	<p>E MC5/MC6 Electrical system</p> <p>3 days <i>Page 27</i></p> 	<p>LR MC5/MC6 Linear robots</p> <p>2 days <i>Page 28</i></p>	<p>PX Electrical injection molding machine</p> <p>2 days <i>Page 29</i></p>		



Seminars available as In Presence Training, Online Training or Blended Training.
For more information, visit: www.kraussmaffei.com/training/imm

YOUR GUIDE TO SUCCESS AUTOMATION: OPERATION & PROGRAMMING

COMBINED TRAINING

	OPERATION / PROGRAMMING			COMBINED TRAINING			
OPERATION / PROGRAMMING	LR ROBOTS	LR1 MC5/MC6/EC Operation, setup and programming* 2/3* days Page 15  <small>*only applicable to MC6</small>	LR2 MC5/MC6/EC Free programming 2*/3 days Page 16 <small>*Only applies to EC</small>	LR3 MC5/MC6 Advanced free programming 3 days Page 17	BLR MC6/EC = LR1 + LR2 Combined Training 4*/5 days Page 18 <small>*Only applies to EC</small> 	PROLR MC6 = LR2 + LR3 Combined Training 5 days Page 19 	
		OPERATION / PROGRAMMING	IR ARTICULATED-ARM ROBOTS	IR1 Basic Operation and programming 3 days Page 22 	IR2 Advance Advanced programming  4 days Page 23 	BA IR MC6 = B1 + IR1 Combined Training 5 days Page 21 	
				INTENSIVE TRAINING	IR ARTICULATED-ARM ROBOTS	IR Intensive Training Parallel processes 2 days Page 26 	IR Intensive Training Palletizing 2 days Page 25 



PRACTICAL TRAINING KS

PLASTICS AND INJECTION MOLDING PROCESSES

Target

- Basics of thermoplastics
- Basics of the injection molding process

Subjects

- Basics of plastics (thermoplastics)
- Basics of injection molding machines
- Basics of injection molds
- Design of an injection molding machine
- Basics of the injection molding process
- Overview of special processes in injection molding

Target group

Beginners in injection molding
(operating personnel, project members,
procurement department, management)

Duration (Practical Training)

2 days, each day from 8:30 a.m. to 4:30 p.m.

Other variants

Online Training

Dates

For current dates, Online Training or Blended Training and additional information, visit:

www.kraussmaffe.com/training/IMM

Prerequisite

No special previous knowledge required



OPERATION /
PROGRAMMING
MACHINE

PRACTICAL TRAINING B1

OPERATION, SETUP AND PROGRAMMING OF INJECTION MOLDING MACHINES INCLUDING CORE-PULLING



Target

- Effective setup of injection molding machines
- Quick and safe operation of injection molding machines
- Quick and reliable programming of core-pulling processes
- Recognition and independent handling of error messages

Subjects

- Safety devices on the injection molding machine
- Configuration of the machine control unit and core puller program
- Procedure for setting up the machine
- Setting up the clamping unit and programming core-pulling processes
- Setting up the injection unit and determining the basic settings, mold filling study
- Optimization of machine settings
- Monitoring options
- Error messages and event log
- Practical exercises on simulators and machines

Target group

Foremen, applications engineers, toolsetters, operating personnel, beginners

Duration (Practical Training)

3 days, each day from 8:30 a.m. to 4:30 p.m.

Other variants

Blended Training

Dates

For current dates, Online Training or Blended Training and additional information, visit:

www.kraussmaffei.com/training/IMM

Prerequisite

- Participation in our Practical Training KS
- Basic knowledge of the injection molding process

Select the "Machine Operation" combined training

B1 + B2 = BM
(see pages 11, 12 and 14)

Select the "System Operation" combined training

B1 + LR1 = BA LR
(see pages 11, 15 and 18)

Select the "System Operation" combined training

B1 + IR1 = BA IR
(see pages 11, 21 and 22)



OPERATION /
PROGRAMMING
MACHINE

PRACTICAL TRAINING B2

PROCESS AND PRODUCT ENHANCEMENT ON INJECTION MOLDING MACHINES



Target

- Efficient process and product enhancement
- Continuous monitoring of product quality
- Clearly and graphically represented processes

Subjects

- Profiles for injection/holding pressure/plasticizing
- Identification and rectification of surface and injection defects
- Quality monitoring
- Design and functional principle of the curve calculator
- Use of the curve calculator for process and product enhancement
- Use of the curve calculator for quality monitoring
- APC and APC+ functions (Adaptive Process Control)
- Identifying sources of interference
- Practical exercises on simulators and machine

Target group

Foremen, applications engineers, assistant foremen, toolsetters

Duration (Practical Training)

2 days, each day from 8:30 a.m. to 4:30 p.m.

Other variants

Blended Training

Dates

For current dates, Online Training or Blended Training and additional information, visit:
www.kraussmaffe.com/training/IMM

Prerequisite

Participation in Practical Training B1

Select the "Machine
Operation" combined
training

B1 + B2 = BM
(see pages 11, 12 and 14)



OPERATION /
PROGRAMMING
MACHINE



PRACTICAL TRAINING B3

STABLE PROCESSES AND QUALITY ASSURANCE ON INJECTION MOLDING MACHINES

Target

- Long-term product quality assurance and documentation
- Recognition and effective exploitation of potential savings
- Energy-conscious machine setup
- Greater process stability, shot weight consistency

Subjects

- ECO assistant function*
- APC and APC+ functions (Adaptive Process Control)*
- Application of the energy analysis
- Energy consumption, energy-conscious machine setup
- Process parameters, impacts on product quality and energy consumption
- SPC functions (quality statistics)
- Quality assurance and application of quality statistics
- Hands-on exercises on simulators and machine

**Only applies to MC6 control system*

Target group

Foremen, applications engineers, assistant foremen, toolsetters

Duration (Practical Training)

2 days, each day from 8:30 a.m. to 4:30 p.m.

Dates

For current dates, Online Training or Blended Training and additional information, visit:

www.kraussmaffei.com/training/IMM

Prerequisite

Participation in Practical Training B2



PRACTICAL TRAINING

BM = B1 + B2

COMBINED OPERATION AND PROCESS OPTIMIZATION OF INJECTION MOLDING MACHINES



PRACTICAL TRAINING B1

Operation, setup and programming of injection molding machines incl. core-pulling

Target

- Effective setup of injection molding machines
- Quick and safe operation of injection molding machines
- Quick and reliable programming of core-pulling processes
- Recognition and independent handling of error messages

Subjects

- Safety devices on the injection molding machine
- Configuration of the machine control unit and core puller program
- Procedure for setting up the machine
- Setting up the clamping unit and programming core-pulling processes
- Setting up the injection unit and determining the basic settings, mold filling study
- Optimization of machine settings
- Monitoring options
- Error messages and event log
- Practical exercises on simulators and machines

Target group

Foremen, applications engineers, toolsetters, operating personnel, beginners

Duration (Practical Training)

5 days, each day from 8:30 a.m. to 4:30 p.m.

Other variants

Blended Training

PRACTICAL TRAINING B2

Process and product enhancement on injection molding machines

Target

- Efficient process and product enhancement
- Continuous monitoring of product quality
- Clearly and graphically represented processes

Subjects

- Profiles for injection/holding pressure/plasticizing
- Identification and rectification of surface and injection defects
- Quality monitoring
- Design and functional principle of the curve calculator
- Use of the curve calculator for process and product enhancement
- Use of the curve calculator for quality monitoring
- APC and APC+ functions (Adaptive Process Control)
- Identifying sources of interference
- Practical exercises on simulators and machine

KraussMaffei
Test Certificate

YOUR ADVANTAGE

Compact, in-depth practical training with KraussMaffei certification

Prerequisite

- Participation in our Practical Training KS
- Basic knowledge of the injection molding process

Dates

For current dates, Online Training or Blended Training and additional information, visit:
www.kraussmaffei.com/training/IMM



PRACTICAL TRAINING LR1

OPERATION, SETUP AND PROGRAMMING OF LINEAR ROBOTS WITH WIZARDX*



Target

- Quick and safe operation and setup of linear robots
- Effective setup of grippers
- Independent recognition and handling of error messages
- Simple creation of programs using the WizardX* programming assistant

Subjects

- Safety devices on the robot
- Data and parameter management
- Procedure for operating the robot
- "Teach-in" and adaptation of point coordinates
- Setting up the area monitoring
- Creating basic programs using WizardX*
- Application of basic programs
- Starting up and optimizing the production system
- Error messages and event log
- Presentation of computer software:
LR-ON-PC/LRX-ON-PC/EasyControl-ON-PC
- Hands-on exercises on simulators and robots

**Only applies to MC6 and EasyControl control systems*

Target group

Machine operators, toolsetters, sampling personnel, automation personnel

Duration (Practical Training)

LR1 MC5 – 2 days, each day from 8:30 a.m. to 4:30 p.m.
LR1 MC6 – 3 days, each day from 8:30 a.m. to 4:30 p.m.
LR1 EC – 2 days, each day from 8:30 a.m. to 4:30 p.m.

Other variants

Blended Training

Dates

For current dates, Online Training or Blended Training and additional information, visit:
www.kraussmaffei.com/training/IMM

Prerequisite

No special previous knowledge required

Select the
"System Operation"
combined training

B1 + LR1 = BA LR
(see pages 11, 15 and 20)

Select the
"Linear Robot Operation"
combined training

LR1 + LR2 = BLR
(see pages 15, 16 and 18)



PRACTICAL TRAINING LR2

FREE PROGRAMMING OF LINEAR ROBOTS

Target

- Master the free programming interface
- Modifying programs quickly and safely
- Creating new program parts effectively

Subjects

- Free programming interface and command structure
 - Explanation of the basic programs and basic program structure
 - Modifying basic programs (e.g. using WizardX*)
 - Procedure for testing program modifications
 - Adapting program add-ons quickly and safely
 - Working with computer software:
 - LR-ON-PC/LRX-ON-PC/EasyControl-ON-PC
 - Hands-on exercises on simulators and robots
- *Only applies to MC6 and EasyControl control systems*

Target group

Advanced toolsetters, sampling personnel with advanced automation tasks, automation personnel

Duration (Practical Training)

LR2 MC5 – 3 days, each day from 8:30 a.m. to 4:30 p.m.
LR2 MC6 – 3 days, each day from 8:30 a.m. to 4:30 p.m.
LR2 EC – 2 days, each day from 8:30 a.m. to 4:30 p.m.

Other variants

Blended Training

Dates

For current dates, Online Training or Blended Training and additional information, visit:
www.kraussmaffei.com/training/IMM

Prerequisite

Participation in Practical Training LR1

Select the
"Linear Robot Operation"
combined training

LR1 + LR2 = BLR
(see pages 15, 16 and 18)

Select the "Linear Robot
Programming" combined
training

LR2 + LR3 = PROLR
(see pages 16, 17 and 19)



OPERATION /
PROGRAMMING
LR ROBOT



PRACTICAL TRAINING LR3

ADVANCED PROGRAMMING OF LINEAR ROBOTS

Target

- Expert knowledge of the free programming interface
- Recognition and utilization of enhancement options
- Programming complex automation processes and applications with multiple kinematics

Subjects

- Free programming interface with advanced command structure
- Efficient enhancement of predefined program flows
- Independent development and programming of complex program parts
- Integration of peripheral systems (freely programmable I/Os)
- Special features of applications with multiple kinematics
- Testing and adapted created program parts
- Identifying and correcting program errors
- Practical exercises on simulators and robots

Target group

Sampling personnel with advanced automation tasks, automation personnel

Duration (Practical Training)

3 days, each day from 8:30 a.m. to 4:30 p.m.

Dates

For current dates, Online Training or Blended Training and additional information, visit: www.kraussmaffei.com/training/IMM

Prerequisite

Participation in Practical Training LR2

Select the "Linear Robot Programming" combined training

LR2 + LR3 = PROLR
(see pages 16, 17 and 19)



OPERATION /
PROGRAMMING
LR ROBOT

PRACTICAL TRAINING

BLR = LR1 + LR2

COMBINED OPERATION AND PROGRAMMING OF LINEAR ROBOTS



PRACTICAL TRAINING LR1

Operation, setup and programming of linear robots with WizardX*

Target

- Quick and safe operation and setup of linear robots
- Effective setup of grippers
- Independent recognition and handling of error messages
- Simple creation of programs using the WizardX* programming assistant

Subjects

- Safety devices on the robot
- Data and parameter management
- Procedure for operating the robot
- "Teach-in" and adaptation of point coordinates
- Setting up the area monitoring
- Creating basic programs using WizardX*
- Application of basic programs
- Starting up and optimizing the production system
- Error messages and event log
- Presentation of computer software:
LR-ON-PC/LRX-ON-PC/EasyControl-ON-PC
- Practical exercises on simulators and robots

PRACTICAL TRAINING LR2

Free programming of linear robots

Target

- Master the free programming interface
- Modifying programs quickly and safely
- Creating new program parts effectively

Subjects

- Free programming interface and command structure
- Explanation of the basic programs and basic program structure
- Modifying basic programs (e.g. using WizardX*)
- Procedure for testing program modifications
- Adapting program add-ons quickly and safely
- Working with computer software:
LR-ON-PC/LRX-ON-PC/EasyControl-ON-PC
- Practical exercises on simulators and robots

**Only applies to MC6 and EasyControl control system*



Target group

Advanced toolsetters, sampling personnel with advanced automation tasks, automation personnel

Duration (Practical Training)

BLR MC6 – 5 days, each day from 8:30 a.m. to 4:30 p.m.
BLR EC – 4 days, each day from 8:30 a.m. to 4:30 p.m.

Other variants

Blended Training

YOUR ADVANTAGE

Compact, in-depth practical training with KraussMaffei certification

Prerequisite

No special previous knowledge required

Dates

For current dates, Online Training or Blended Training and additional information, visit:
www.kraussmaffei.com/training/IMM



OPERATION /
PROGRAMMING
LR ROBOT



PRACTICAL TRAINING

PROLR = LR2 + LR3

COMBINED EXPERT PROGRAMMING OF LINEAR ROBOTS

PRACTICAL TRAINING LR2

Free programming of linear robots

Target

- Master the free programming interface
- Modifying programs quickly and safely
- Creating new program parts effectively

Subjects

- Free programming interface and command structure
- Explanation of the basic programs and basic program structure
- Modifying basic programs (e.g. using WizardX*)
- Procedure for testing program modifications
- Adapting program add-ons quickly and safely
- Working with computer software:
LR-ON-PC/LRX-ON-PC/ EasyControl-ON-PC
- Practical exercises on simulators and robots

**Only applies to MC6 and EasyControl control system*

PRACTICAL TRAINING LR3

Advanced programming of linear robots

Target

- Expert knowledge of the free programming interface
- Recognition and utilization of enhancement options
- Programming complex automation processes and applications with multiple kinematics

Subjects

- Free programming interface with advanced command structure
- Efficient enhancement of predefined program flows
- Independent development and programming of complex program parts
- Integration of peripheral systems (freely programmable I/Os)
- Special features of applications with multiple kinematics
- Testing and adapted created program parts
- Identifying and correcting program errors
- Practical exercises on simulators and robots



Target group

Advanced toolsetters, sampling personnel with advanced automation tasks, automation personnel

Duration (Practical Training)

5 days, each day from 8:30 a.m. to 4:30 p.m.

Dates

For current dates, Online Training or Blended Training and additional information, visit:

www.kraussmaffe.com/training/IMM

YOUR ADVANTAGE

Compact, in-depth practical training with KraussMaffei certification

Prerequisite

Participation in Practical Training LR1



OPERATION /
PROGRAMMING
LR ROBOT

PRACTICAL TRAINING

BA LR = B1 + LR1



COMBINED OPERATION AND PROGRAMMING OF INJECTION MOLDING MACHINES AND LINEAR ROBOTS

PRACTICAL TRAINING B1

Operation, setup and programming of injection molding machines incl. core-pulling

Target

- Effective setup of injection molding machines
- Quick and safe operation of injection molding machines
- Quick and reliable programming of core-pulling processes
- Recognition and independent handling of error messages

Subjects

- Safety devices on the injection molding machine
- Configuration of the machine control unit and core puller program
- Procedure for setting up the machine
- Setting up the clamping unit and programming core-pulling processes
- Setting up the injection unit and determining the basic settings, mold filling study
- Optimization of machine settings
- Monitoring options
- Error messages and event log
- Practical exercises on simulators and machines

**Only applies to MC6 and EasyControl control system*

PRACTICAL TRAINING LR1

Operation, setup and programming of linear robots with WizardX*

Target

- Quick and safe operation and setup of linear robots
- Effective setup of grippers
- Independent recognition and handling of error messages
- Simple creation of programs using the WizardX* programming assistant

Subjects

- Safety devices on the robot
- Data and parameter management
- Procedure for operating the robot
- "Teach-in" and adaptation of point coordinates
- Setting up the area monitoring
- Creating basic programs using WizardX*
- Application of basic programs
- Starting up and optimizing the production system
- Error messages and event log
- Presentation of computer software: LR-ON-PC/LRX-ON-PC/EasyControl-ON-PC
- Practical exercises on simulators and robots

KraussMaffei
Test Certificate

Target group

Machine operators, toolsetters, sampling personnel, automation personnel

Duration (Practical Training)

5 days, each day from 8:30 a.m. to 4:30 p.m.

Other variants

Blended Training

YOUR ADVANTAGE

Compact, in-depth practical training with KraussMaffei certification

Prerequisite

- Participation in our Practical Training KS
- Basic knowledge of the injection molding process

Dates

For current dates, Online Training or Blended Training and additional information, visit:
www.kraussmaffei.com/training/IMM



OPERATION /
PROGRAMMING
SYSTEM

PRACTICAL TRAINING

BA IR = B1 + IR1



COMBINED OPERATION AND PROGRAMMING OF INJECTION MOLDING MACHINES AND ARTICULATED-ARM ROBOTS

PRACTICAL TRAINING B1

Operation, setup and programming of injection molding machines incl. core-pulling

Target

- Effective setup of injection molding machines
- Quick and safe operation of injection molding machines
- Quick and reliable programming of core-pulling processes
- Recognition and independent handling of error messages

Subjects

- Safety devices on the injection molding machine
- Configuration of the machine control unit and core puller program
- Procedure for setting up the machine
- Setting up the clamping unit and programming core-pulling processes
- Setting up the injection unit and determining the basic settings, mold filling study
- Optimization of machine settings
- Monitoring options
- Error messages and event log
- Practical exercises on simulators and machines

PRACTICAL TRAINING IR1 BASIC

Operation and programming of articulated-arm robots

Target

The objective of the training is to gain all the essential skills required to operate and create simple handling tasks for the KM robot system.

Subjects

- Safety instructions for articulated-arm robots and the automation cell
- Operation of the robot system
- Knowledge and application of coordinate systems
- Inserting, deleting and correcting points
- Working in automatic mode
- Starting and stopping production
- Teach-in/adaptation of existing article programs
- Operating the KMA user interface
- Functions of the KMA inline forms

Target group

Toolsetters, machine operators, sampling personnel with advanced automation tasks, automation personnel

Duration (Practical Training)

5 days, each day from 8:30 a.m. to 4:30 p.m.

Dates

For current dates, Online Training or Blended Training and additional information, visit:

www.kraussmaffe.com/training/IMM

YOUR ADVANTAGE

Compact, in-depth practical training with KraussMaffei certification

Prerequisite

- Participation in our Practical Training KS
- Basic knowledge of the injection molding process



OPERATION /
PROGRAMMING
SYSTEM



PRACTICAL TRAINING IR1 BASIC OPERATION AND PROGRAMMING OF ARTICULATED-ARM ROBOTS

Target

The objective of the training is to gain all the essential skills required to operate and create simple handling tasks for the KM robot system.

Subjects

- Setup and operation of a KUKA robot system
- Moving robots, reading and interpreting messages from the robot control system
- Operation with VisuX
- Programming with ProgTechX
- Using robot programs
- Handling program files, creating program modules
- Creating and changing programmed movements, generating new movement commands

Target group

Operators and toolsetters

Remarks

The course ends with a final test. A KraussMaffei certificate is awarded on successful completion of the course.

Duration (Practical Training)

3 days, starting at 9:00 a.m. on the first day and otherwise from 8:00 a.m. to 4:00 p.m.

Dates

For current dates, Online Training or Blended Training and additional information, visit:
www.kraussmaffei.com/training/IMM

Prerequisite

No special previous knowledge required



Select the
"System Operation"
combined training

B1 + IR1 = BA IR
(see pages 11, 21 and 22)



OPERATION /
PROGRAMMING
IR ROBOTS



PRACTICAL TRAINING IR2 ADVANCE OPERATION, SETUP AND PROGRAMMING OF ARTICULATED-ARM ROBOTS

Target

The objective of the training is to gain the additional skills required to set up and create complex handling tasks for the KM robot system.

Subjects

- Operation with VisuX
- Commissioning activities at the robot:
 - principle of adjustment
- Programming collision detection
- Using logic functions in the robot program, introduction to logic programming
- Variables and agreements
- Successful programming in KRL structure and configuration of robot programs
- Use of program sequence controls, programming requests or branchings
- Programming with ProgTechX
- Parallel processes

Target group

Toolsetters, maintenance personnel and programmers

Remarks

The course ends with a final test. A KM/KUKA certificate is awarded on successful completion of the course. Participants who successfully complete this course will be eligible to attend continuation courses at the KUKA College. For example: advanced robot programming, electrical service, mechanical service.

Duration (Practical Training)

4 days, starting at 9:00 a.m. on the first day and otherwise from 8:00 a.m. to 4:00 p.m.

Dates

For current dates, Online Training or Blended Training and additional information, visit: www.kraussmaffe.com/training/IMM

Prerequisite

- Participation in our Practical Training IR1
 - Basic knowledge of programming
 - Experience with automation systems
-





PRACTICAL TRAINING IR INTENSIVE HOMING (HOME POSITION)

Target

- Safe creation of retraction programs

Subjects

- Backward movement to the home position
- Forward movement to the home position
- Special movement to the home position
- Conditional home traverse

Target group

Operators and toolsetters

Remarks

The course ends with a final test. The KraussMaffei certificate is awarded on successful completion of the course.

Duration (Practical Training)

2 days, starting at 9:00 am on the first day, otherwise from 8:00 am to 4:00 pm

Dates

For current dates, Online Training or Blended Training and additional information, visit:
www.kraussmaffei.com/training/IMM

Prerequisite

- Participation in Practical Training IR1
 - Knowledge of VisuX and ProgTechX
-





PRACTICAL TRAINING IR INTENSIVE PALLETIZING

Target

- Mastery and efficient creation of palletizing tasks
- Working with StackingX

Subjects

- Simple palletizing
- Nested palletizing
- Staggered palletizing
- Palletizing with intermediate storage
- Special palletizing methods

Target group

Operators and toolsetters

Remarks

The course ends with a final test. The KraussMaffei certificate is awarded on successful completion of the course.

Duration (Practical Training)

2 days, starting at 9:00 am on the first day, otherwise from 8:00 am to 4:00 pm

Dates

For current dates, Online Training or Blended Training and additional information, visit:

www.kraussmaffei.com/training/IMM

Prerequisite

- Participation in Practical Training IR1
 - Knowledge of VisuX and ProgTechX
-





PRACTICAL TRAINING IR INTENSIVE PARALLEL PROCESSES

Target

- Mastery of writing parallel processes and functions
- Working with ParallelX

Subjects

- Kuka Submit interpreter
- KRL (Kuka Robot Language)
- Parallel processes in KRL
- Parallel processes with ParallelX

Target group

Operators and toolsetters

Remarks

The course ends with a final test. The KraussMaffei certificate is awarded on successful completion of the course.

Duration (Practical Training)

2 days, starting at 9:00 am on the first day, otherwise from 8:00 am to 4:00 pm

Dates

For current dates, Online Training or Blended Training and additional information, visit:
www.kraussmaffei.com/training/IMM

Prerequisite

- Participation in Practical Training IR1
 - Knowledge of VisuX and ProgTechX
-





PRACTICAL TRAINING E

TROUBLESHOOTING OF ELECTRICAL SYSTEM ON INJECTION MOLDING MACHINES

Target

- Rapid detection and clearance of faults
- Systematic troubleshooting in electrical systems

Subjects

- Machine operation for maintenance personnel
- Error messages and event log
- Design and functional principle of the control unit
- Cycle flow chart and on-screen step display
- Expert use of electric circuit diagrams
- Diagnosis functions
- Systematic approach to troubleshooting
- Procedure for hardware component replacement
- Preventive maintenance
- Practical exercises on simulators and machine

Target group

Maintenance and servicing personnel for electrical systems/electronics

Duration (Practical Training)

3 days, each day from 8:30 a.m. to 4:30 p.m.

Dates

For current dates, Online Training or Blended Training and additional information, visit:
www.kraussmaffei.com/training/IMM

Prerequisite

- Electrically skilled person
 - Basic knowledge of how to operate KraussMaffei injection molding machines (recommended)
-

Select the
"Machine Maintenance"
combined training

E + HM2 = eHM
(see pages 27, 31 and 33)





PRACTICAL TRAINING LR

MAINTENANCE AND TROUBLESHOOTING OF LINEAR ROBOTS

Target

- Optimal maintenance of linear robots
- Rapid detection and clearance of faults

Subjects

- Robot operation for maintenance personnel
- System configuration of linear robots
- Diagnosis functions
- Systematic approach to troubleshooting
- Calibrating robot axes
- Preventive maintenance
- Practical exercises on simulators and robots

Target group

Maintenance and servicing personnel for electrical systems/electronics and/or automation

Duration (Practical Training)

2 days, each day from 8:30 a.m. to 4:30 p.m.

Dates

For current dates, Online Training or Blended Training and additional information, visit:
www.kraussmaffe.com/training/IMM

Prerequisite

Electrically skilled person





PRACTICAL TRAINING PX

MAINTENANCE AND TROUBLESHOOTING OF PX ELECTRICAL INJECTION MOLDING MACHINES

Target

- Know differences in relation to hydraulic machines
- Perform optimal maintenance on the PX electric injection molding machine
- Rapid detection and clearance of faults

Subjects

- Special features of operation (zero points, mold area protection, clamping force measurement)
- Mechanical design of the locking and injection unit
- Knowledge of electrical drive systems
- Preventive maintenance
- Expert use of electric circuit diagrams
- MC6 control concept with S-DIAS module
- Modules in the converter network
- Bus connections
- Diagnosis functions
- Troubleshooting in the control system
- Configuring displacement/force transducers

Target group

Maintenance and servicing personnel
for electrical systems/electronics

Duration (Practical Training)

2 days, each day from 8:30 a.m. to 4:30 p.m.

Dates

For current dates, Online Training or Blended Training and additional information, visit:
www.kraussmaffei.com/training/IMM

Prerequisite

- Electrically skilled person
 - Participation in Practical Training E MC6
 - Basic knowledge of how to operate KraussMaffei injection molding machines (recommended)
-





PRACTICAL TRAINING HM1

COMPONENTS AND HYDRAULIC SYSTEMS

Target

- Basics of hydraulic systems
- Design and handling of the hydraulic diagram

Subjects

- The hydraulic system's physical principles and interconnections
- Hydraulic components
- Design and functional principle of the hydraulic system
- Function and properties of the hydraulic components being used
- Practical exercises on the machine

Target group

Maintenance and servicing personnel for electrical systems/electronics

Duration (Practical Training)

2 days, each day from 8:30 a.m. to 4:30 p.m.

Other variants

Online Training

Dates

For current dates, Online Training or Blended Training and additional information, visit:
www.kraussmaffei.com/training/IMM

Prerequisite

No special previous knowledge required



MAINTENANCE
HYDRAULIC SYSTEM/
MECHANICAL SYSTEM



PRACTICAL TRAINING HM2

TROUBLESHOOTING OF THE HYDRAULIC/MECHANICAL SYSTEM ON INJECTION MOLDING MACHINES

Target

- Rapid detection and clearance of faults
- Professional, systematic troubleshooting in hydraulic/mechanical systems

Subjects

- Machine operation for maintenance personnel
- Error messages and event log
- Hydraulic components and their mode of operation in the machine hydraulic system
- Diagnosis functions
- Systematic approach to hydraulic troubleshooting
- Design and handling of the hydraulic diagram
- Mechanical design of the locking and injection unit
- Practical exercises on simulators and machine

Target group

Maintenance and servicing personnel

Duration (Practical Training)

3 days, each day from 8:30 a.m. to 4:30 p.m.

Dates

For current dates, Online Training or Blended Training and additional information, visit:

www.kraussmaffe.com/training/IMM

Prerequisite

- Basic knowledge of hydraulic/mechanical systems
 - Participation in Practical Training HM1
-

Select the
"Machine Maintenance"
combined training

E + HM2 = eHM
(see pages 27, 31 and 33)



MAINTENANCE
HYDRAULIC SYSTEM/
MECHANICAL SYSTEM



PRACTICAL TRAINING HM3

CALIBRATING INJECTION MOLDING MACHINES

Target

- Independent calibration and adjustment
- Increasing process and machine capability

Subjects

- Calibration procedures following module replacement
- Functional principle of the controller
- Calibrating pressure and displacement transducers
- Calibrating proportional valves and variable delivery pumps
- Practical exercises on simulators and machine

Target group

Maintenance and servicing personnel

Duration (Practical Training)

2 days, each day from 8:30 a.m. to 4:30 p.m.

Dates

For current dates, Online Training or Blended Training and additional information, visit:
www.kraussmaffei.com/training/IMM

Prerequisite

Participation in Practical Training E or HM2



MAINTENANCE
HYDRAULIC SYSTEM/
MECHANICAL SYSTEM

PRACTICAL TRAINING

eHM = E + HM2

COMBINED TROUBLESHOOTING OF INJECTION MOLDING MACHINES (ELECTRICAL/HYDRAULIC/MECHANICAL SYSTEMS)



PRACTICAL TRAINING E

Troubleshooting of electrical system on injection molding machines

Target

- Rapid detection and clearance of faults
- Systematic troubleshooting in control technology

Topics (adaptation to combined training)

- Machine operation for maintenance personnel
- Error messages and event log
- Design and functional principle of the control unit
- Cycle flow chart and on-screen step display
- Expert use of electric circuit diagrams
- Diagnosis functions
- Systematic approach to troubleshooting
- Practical exercises on simulators and machine

PRACTICAL TRAINING HM2

Troubleshooting of the hydraulic/mechanical system on injection molding machines

Target

- Rapid detection and clearance of faults
- Professional, systematic troubleshooting in hydraulic/mechanical systems

Subjects

- Machine operation for maintenance personnel
- Error messages and event log
- Hydraulic components and their mode of operation in the machine hydraulic system
- Diagnosis functions
- Systematic approach to hydraulic troubleshooting
- Design and handling of the hydraulic diagram
- Mechanical design of the locking and injection unit
- Practical exercises on simulators and machine

KraussMaffei
Test Certificate

Target group

Maintenance and servicing personnel

Duration (Practical Training)

5 days, each day from 8:30 a.m. to 4:30 p.m.

Dates

For current dates, Online Training or Blended Training and additional information, visit:

www.kraussmaffei.com/training/IMM

YOUR ADVANTAGE

Compact, in-depth practical training with KraussMaffei certification

Prerequisite

- Electrically skilled person (recommended)
- Basic knowledge of hydraulic/mechanical systems
- Participation in Practical Training HM1
- Basic knowledge of how to operate KraussMaffei injection molding machines (recommended)



MAINTENANCE / SERVICING
ELECTRICAL/HYDRAULIC/MECHANICAL
SYSTEMS

YOUR ROUTE TO KRAUSSMAFFEI MUNICH-ALLACH AND SURROUNDING AREA



Travel to city center by train or plane

From Munich Airport, you can reach the main train station by local train (S-Bahn line S1) or with the S8 in the direction of the city center.

You can reach KraussMaffei from the main train station in Munich within 15 minutes by taking the local train (S-Bahn) route S2 toward Dachau/Petershausen and exiting at "Allach" station. Allach is directly in front of our company premises.

Arrival by car

Visitor parking is available if you are traveling by car. The optimal route uses the KraussMaffei private road that branches off from Ludwigsfelder Strasse.

Navigation system:
Ludwigsfelder Straße 60,
80997 München-Allach or
48°11' 38» N /11°28' 31» E

CONTACT INFO – INJECTION MOLDING TECHNOLOGY TRAINING REGISTRATION

Call: +49 (0)89 8899 4150

E-mail: Schulung.SGM@kraussmaffei.com

Write to: Training Academy
Team Training IMM
KraussMaffei Technologies GmbH
Krauss-Maffei-Strasse 2
80997 Munich

Internet: www.kraussmaffei.com/trainingIMM

You will find our conditions for participation here:

<https://km.kraussmaffei.com/de/teilnahmebedingungen.html>

**UNITED FOR YOUR
SUCCESS.**

TRAINING
INJECTION MOLDING
MACHINERY 2022.



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