

UNITED FOR YOUR SUCCESS

MAN AND MACHINE

*TRAINING PROGRAM
INJECTION MOLDING TECHNOLOGY &
AUTOMATION 2024*

KraussMaffei

Pioneering Plastics

KraussMaffei
Pioneering Plastics



FACE-TO-FACE 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 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 trainings, 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 face-to-face training, visit:
[kraussmaffei.com/training/IMM](https://www.kraussmaffei.com/training/IMM)

Look out for this icon:



YOUR BENEFITS:

- Extensive hands-on training, 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

Energy efficiency

Introduction to energy and CO₂ optimization

smartOperation

Simple, fast and reliable machine operation in production

APCplus

Stability, precision and cost-efficiency in production

Core-pulling

Programming core-pulling processes

Robot core-pulling

Programming complex core-pulling processes in conjunction with robot

LRX WizardX

Using the programming wizard

LRX Safety Monitoring

Optimizing the area monitoring

YOUR BENEFITS:

- Interactive live training
- No travel costs
- 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 training for every target group.

For more information about our additional online content:

kraussmaffe.com/trainingIMM

Look out for this icon:



INDIVIDUALIZED TRAINING

With individual training, you can rely on a training measure that is precisely tailored to your company. Depending on the specific task, this may consist of individual components such as face-to-face or online training or may include a variety of components: blended training (e.g. an online training followed by face-to-face training). This ensures quick successes for your team and efficient handling of the system.

We would be happy to advise you and, together with you, find the right format, the suitable topics and thus a successful qualification for your employees.



YOUR BENEFITS:

- Individualized training sessions: topics, duration and training format adapted to your needs
- Development of expertise depending on the qualification of your employees
- Also available for existing systems with MC4 or MC5 control system, for example

Phone: + 49 89 88 99 41 50

Email: TrainingAcademy@kraussmaffei.com

[kraussmaffei.com/trainingIMM](https://www.kraussmaffei.com/trainingIMM)



DIGITAL SOLUTIONS FOR YOUR FUTURE INFORMATION. CONSULTING. TRAINING.

To make your successes as tangible as possible, you should equip your machines, systems and process technologies to be as digital as possible. The innovative solutions and worldwide service contacts of KraussMaffei pave the way to a successful, networked future for you.

socialProduction

facilitates anytime/anywhere monitoring of injection molding machines, the production process and the condition of machine components.

- productionMonitor
- processSupport
- liveCare

remoteSupport

offers comprehensive remote support through highly secure access to the machine control system and through interactive video chats between KraussMaffei experts and operators.

- remoteAccess
- smartAssist

smartMachine

determines the optimal production parameters thanks to intelligent products and assistance systems and enables one-of-a-kind insights into the injection molding process.

- APCplus
- smartOperation
- dataXplorer

smartConnect

stands for standardized and future-ready connectivity solutions from KraussMaffei.

- smartCube
- smartLink



Interested?

Get customized advice at:

Phone: + 49 89 88 99 41 50

Email: TrainingAcademy@kraussmaffei.com

kraussmaffei.com/trainingIMM

YOUR GUIDELINE TO SUCCESS MACHINE & AUTOMATION OPERATION & MAINTENANCE



COMBINED TRAINING

OPERATION / PROGRAMMING

MACHINE MC6/MC P1

KS Plastics and Injection Molding Processes 2 days <i>p. 10</i>	B1 MC6/MC P1 Operation and setup MC6 3 days <i>p. 11</i> MC P1 3 days <i>p. 16</i>	B2P MC6/MC P1 Process and product enhancement MC6 2 days <i>p. 12</i> MC P1 2 days <i>p. 17</i>
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BMP MC6/MC P1
= B1 + B2P
Combined Training

MC6 5 days *p. 14*
MC P1 5 days *p. 18*

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B2E MC6
Energy and CO₂ optimization

MC6 2 days *p. 13*

BME MC6
= B1 + B2E
Combined Training

MC6 5 days *p. 15*

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MAINTENANCE

ELECTRICAL SYSTEM MC6/MC P1

E MC6/MC P1 Electrical system MC6 3 days <i>p. 36</i> MC P1 3 days <i>p. 39</i>	LR MC6/EC Linear robots MC6 2 days <i>p. 37</i> EC 2 days <i>p. 40</i>
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PX / precisionMolding
Electrical injection molding machine

PX 2 days *p. 38*
preMo 2 days *p. 41*



HYDRAULIC SYSTEMS
CX/GX/MX/powerMolding

HM1 Components and hydraulic systems 2 days <i>p. 42</i>	HM2 CX/GX/MX/powerMolding Hydraulic system/mechanical system CX 3 days <i>p. 43</i> GX 3 days <i>p. 43</i> MX 3 days <i>p. 43</i> powMo 3 days <i>p. 46</i>	HM3 CX/GX/MX/powerMolding Calibration CX 3 days <i>p. 44</i> GX 3 days <i>p. 44</i> MX 3 days <i>p. 44</i> powMo 3 days <i>p. 47</i>
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eHM MC6 CX/GX/MX/powerMolding
= E + HM2
Combined Training

CX 5 days *p. 45*
GX 5 days *p. 45*
MX 5 days *p. 45*
powMo 5 days *p. 48*






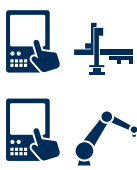


KraussMaffei
Test Certificate




Further information at:
www.kraussmaffei.com/trainingIMM

YOUR GUIDELINE TO SUCCESS AUTOMATION & SYSTEMS OPERATION & PROGRAMMING

OPERATION / PROGRAMMING

LR ROBOT MC6/EC			COMBINED TRAINING		
LR ROBOT MC6/EC	LR1 MC6/EC Operating, setting and programming MC6 3 days p. 20 EC 2 days p. 25	LR2 MC6/EC Free programming MC6 3 days p. 21 EC 2 days p. 26	LR3 MC6 Advanced programming MC6 3 days p. 22	BLR MC6/EC = LR1 + LR2 Combined Training MC6 5 days p. 23 EC 4 days p. 27	PROLR MC6 = LR2 + LR3 Combined Training MC6 5 days p. 24
					
IR ARTICULATED-ARM ROBOTS KRC4/KRC5			COMBINED TRAINING		
IR ARTICULATED-ARM ROBOTS KRC4/KRC5	IR1 KRC4/5 Basic Operation and programming KRC4 3 days p. 28 KRC5 3 days p. 30	IR2 KRC4/5 Advanced Advanced programming KRC4 4 days p. 29 KRC5 3 days p. 31	BIR KRC5 = IR1 + IR2 Combined Training KRC5 5 days p. 32		
					
SYSTEM MC6			COMBINED TRAINING		
SYSTEM MC6				BALR MC6 = B1 + LR1 Combined Training MC6 5 days p. 34	BAIR MC6-KRC4 = B1 + IR1 Combined Training MC6 5 days p. 35 KRC4
					



As alternative to face-to-face training

Effective units from the areas of machine and automation

Digital solutions

KS 6 modules p. 10	HM1 6 modules p. 42							
LRX WizardX	LRX Safety Monitoring	smart Operation	Production Management	Energy efficiency	APCplus	Core-pulling	Robot core-pulling	
socialProduction	remoteSupport							

OVERVIEW OF ONLINE TRAINING TOPICS

Details about the online training courses here:
www.kraussmaffei.com/training/IMM



YOUR GUIDELINE TO SUCCESS

TOPIC SELECTION FOR THE RIGHT TARGET GROUP



PRODUCTION Beginners

KS
B1
LR1
smartOperation



PRODUCTION Advanced

B1
B2P
B2E
BMP
BME
LR1
LR2
LR3
BLR
PROLR
BALR / BAIR
IR1
IR2
BIR
Core-pulling
Robot core-pulling
APCplus
Energy efficiency
LRX WizardX
LRX Safety Monitoring



MAINTENANCE

E
PX / precisionMolding
LR
HM1
HM2
HM3
eHM



MANAGEMENT

Production Management
smartOperation
APCplus
Energy efficiency

TRAINING

KS

PLASTICS AND INJECTION MOLDING PROCESSES



Objectives

- Basic knowledge of thermoplastics
- Basic knowledge 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 injection molding process
- Overview of special processes in injection molding

Target group

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

Duration

Practical training: 2 days, each day from 8:30 a.m. to 4:30 p.m.
Online training: 6 modules of 1.5 hours each (distributed over 2 days)

Dates

For current dates and additional information, visit here:
www.kraussmaffe.com/trainingIMM

Prerequisite

No special previous knowledge required

Valid for the following series

All series



OPERATION /
PROGRAMMING
MACHINE

PRACTICAL TRAINING

B1 MC6



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

Objectives

- 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-pulling 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.

Dates

For current dates and additional information, visit here:

www.kraussmaffei.com/trainingIMM

Prerequisite

- Participation in our practical training KS
 - Basic knowledge of the injection molding process
-

Valid for the following series

CX, PX, GX & MX series with MC6 control system

Select the
"Machine Operation"
combined training

B1 + B2P = BMP MC6
(see pages 11, 12 and 14)

Select the
"Machine Operation"
combined training

B1 + B2E = BME MC6
(see pages 11, 13 and 15)

Select the
"System Operation"
combined training

B1 + LR1 = BALR MC6
(see pages 11, 20 and 34)

Select the
"System Operation"
combined training

B1 + IR1 = BAIR MC6-KRC4
(see pages 11, 28 and 35)



OPERATION /
PROGRAMMING
MACHINE

PRACTICAL TRAINING

B2P MC6



PROCESS AND PRODUCT ENHANCEMENT ON INJECTION MOLDING MACHINES

Objectives

- 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
- APCplus 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.

Dates

For current dates and additional information, visit here:

www.kraussmaffe.com/trainingIMM

Prerequisite

Participation in practical training B1 MC6

Valid for the following series

CX, PX, GX & MX series with MC6 control system

Select the
"Machine Operation"
combined training

B1 + B2P = BMP MC6
(see pages 11, 12 and 14)



OPERATION /
PROGRAMMING
MACHINE



PRACTICAL TRAINING

B2E MC6

ENERGY AND CO₂ OPTIMIZATION ON INJECTION MOLDING MACHINES

Objectives

- Recognition and effective use of energy savings potential
- Energy- and CO₂-efficient machine setting

Subjects

- Using and understanding the integrated energy analysis
- Analyzing the energy consumption and optimizing the machine setting
- Process parameters: relationship between energy efficiency and product quality
- Functions of the KraussMaffei ECO assistant
- KraussMaffei dataXplorer, representing energy and process transparency
- Practical exercises on simulators and machines

Target group

Foremen, applications engineers, toolsetters

Duration (practical training)

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

Dates

For current dates and additional information, visit here:

www.kraussmaffei.com/trainingIMM

Prerequisite

Participation in practical training B1 MC6

Valid for the following series

CX, PX, GX & MX series with MC6 control system

Select the
"Machine Operation"
combined training

B1 + B2E = BME MC6
(see pages 11, 13 and 15)



OPERATION /
PROGRAMMING
MACHINE

PRACTICAL TRAINING

BMP MC6 = B1 + B2P

COMBINED OPERATION AND PROCESS OPTIMIZATION OF INJECTION MOLDING MACHINES



PRACTICAL TRAINING B1 MC6

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

Objectives

- 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-pulling 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.

PRACTICAL TRAINING B2P MC6

Process and product enhancement on injection molding machines

Objectives

- 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
- APCplus 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

Valid for the following series

CX, PX, GX & MX series with MC6 control system

Dates

For current dates and additional information, visit here:

www.kraussmaffei.com/trainingIMM



OPERATION /
PROGRAMMING
MACHINE

PRACTICAL TRAINING

BME MC6 = B1 + B2E

COMBINED OPERATION AND ENERGY OPTIMIZATION OF INJECTION MOLDING MACHINES



PRACTICAL TRAINING B1 MC6

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

Objectives

- 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-pulling 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.

PRACTICAL TRAINING B2E MC6

Energy and CO₂ optimization on injection molding machines

Objectives

- Recognition and effective use of energy savings potential
- Energy- and CO₂-efficient machine setting

Subjects

- Using and understanding the integrated energy analysis
- Analyzing the energy consumption and optimizing the machine setting
- Process parameters: relationship between energy efficiency and product quality
- Functions of the KraussMaffei ECO assistant
- KraussMaffei dataXplorer, representing energy and process transparency
- Practical exercises on simulators and machines



YOUR ADVANTAGE

Compact, in-depth practical training with KraussMaffei certification

Prerequisite

- Participation in our practical training KS
- Basic knowledge of the injection molding process

Valid for the following series

CX, PX, GX & MX series with MC6 control system

Dates

For current dates and additional information, visit here:

www.kraussmaffei.com/trainingIMM



OPERATION /
PROGRAMMING
MACHINE

PRACTICAL TRAINING

B1 MC P1



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

Objectives

- 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-pulling 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.

Dates

For current dates and additional information, visit here:

www.kraussmaffe.com/trainingIMM

Prerequisite

- Participation in our practical training KS
 - Basic knowledge of the injection molding process
-

Valid for the following series

precision- & powerMolding with MC P1 control system

Select the
"Machine Operation"
combined training

B1 + B2P = BMP MC P1
(see pages 16, 17 and 18)



OPERATION /
PROGRAMMING
MACHINE

PRACTICAL TRAINING

B2P MC P1



PROCESS AND PRODUCT ENHANCEMENT ON INJECTION MOLDING MACHINES

Objectives

- 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
- APCplus 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.

Dates

For current dates and additional information, visit here:

www.kraussmaffe.com/trainingIMM

Prerequisite

Participation in practical training B1 MC P1

Valid for the following series

precision- & powerMolding with
MC P1 control system

Select the
"Machine Operation"
combined training

B1 + B2P = BMP MC P1
(see pages 16, 17 and 18)



OPERATION /
PROGRAMMING
MACHINE

PRACTICAL TRAINING

BMP MC P1 = B1 + B2P

COMBINED OPERATION AND PROCESS OPTIMIZATION OF INJECTION MOLDING MACHINES



PRACTICAL TRAINING B1 MC P1

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

Objectives

- 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-pulling 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.

PRACTICAL TRAINING B2P MC P1

Process and product enhancement on injection molding machines

Objectives

- 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
- APCplus functions (Adaptive Process Control)
- Identifying sources of interference
- Practical exercises on simulators and machine



YOUR ADVANTAGE

Compact, in-depth practical training with KraussMaffei certification

Prerequisite

- Participation in our practical training KS
- Basic knowledge of the injection molding process

Valid for the following series

precision- & powerMolding with MC P1 control system

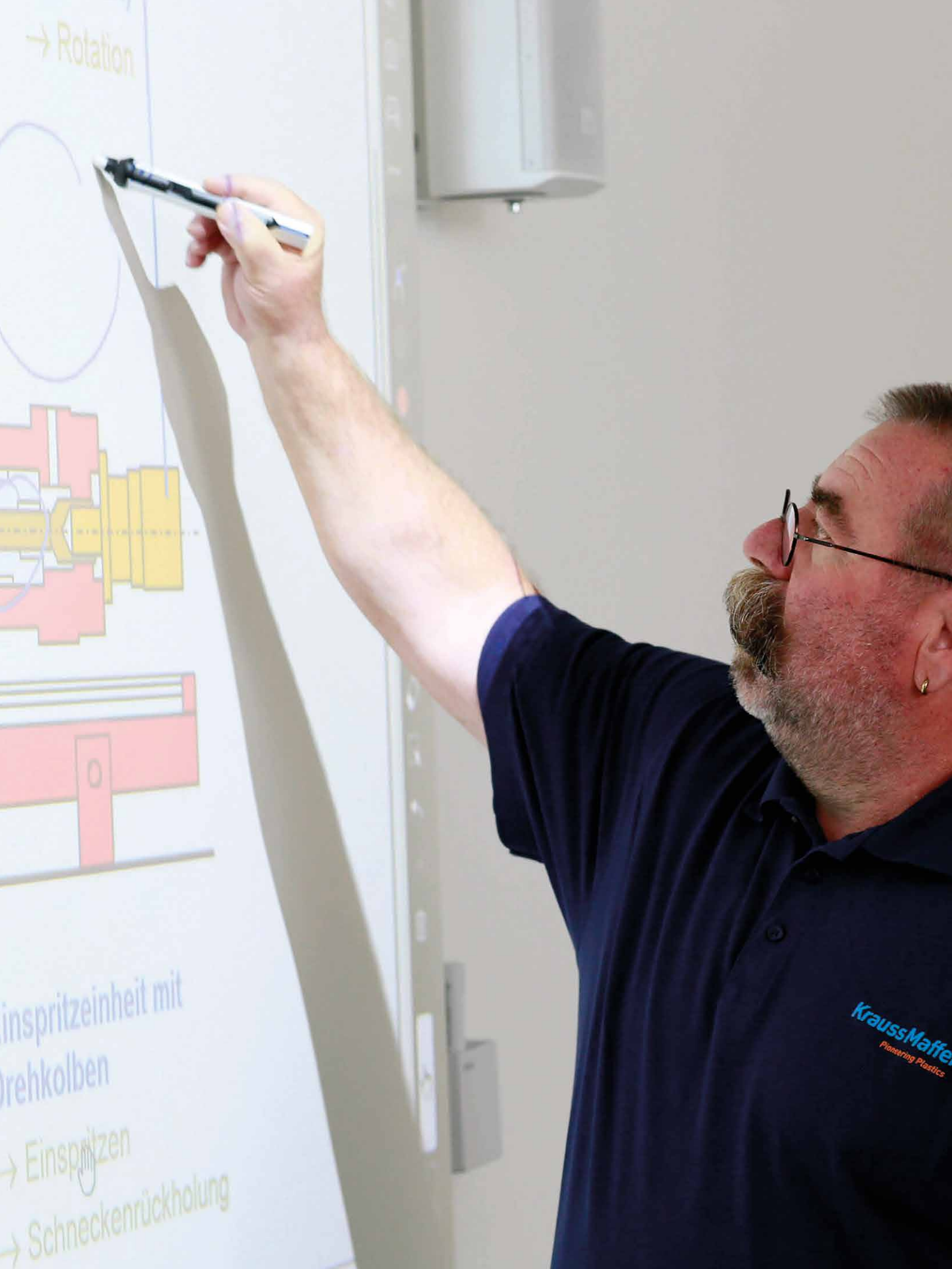
Dates

For current dates and additional information, visit here:

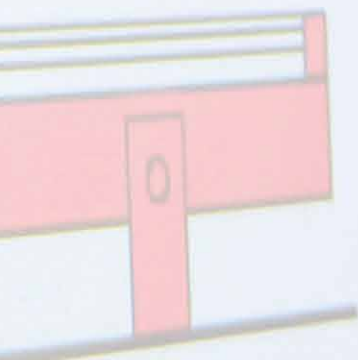
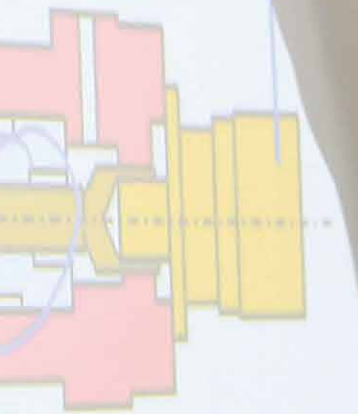
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**OPERATION /
PROGRAMMING
MACHINE**



→ Rotation



inspritzeinheit mit
Drehkolben

→ Einspritzen

→ Schneckenrückholung

KraussMaffei
Pioneering Plastics

PRACTICAL TRAINING

LR1 MC6



OPERATION, SETUP AND PROGRAMMING OF LINEAR ROBOTS WITH WIZARDX

Objectives

- 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 the LRX-ON-PC PC software
- Practical exercises on simulators and robots

Target group

Machine operators, toolsetters, sampling personnel, automation personnel

Duration (practical training)

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

Dates

For current dates and additional information, visit here:

www.kraussmaffei.com/training/IMM

Prerequisite

No special previous knowledge required

Valid for the following series

LRX series with MC6 control system

Select the
"System Operation"
combined training

B1 + LR1 = BALR MC6
(see pages 11, 20 and 34)

Select the
"Linear Robot Operation"
combined training

LR1 + LR2 = BLR MC6
(see pages 20, 21 and 23)



OPERATION /
PROGRAMMING
LR ROBOTS



PRACTICAL TRAINING

LR2 MC6

FREE PROGRAMMING OF LINEAR ROBOTS

Objectives

- 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 the LRX-ON-PC PC software
- Practical exercises on simulators and robots

Target group

Advanced toolsetters, 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 and additional information, visit here:

www.kraussmaffe.com/trainingIMM

Prerequisite

Participation in practical training LR1 MC6

Valid for the following series

LRX series with MC6 control system

Select the
"Linear Robot Operation"
combined training

LR1 + LR2 = BLR MC6
(see pages 20, 21 and 23)

Select the
"Linear Robot Program-
ming" combined training

LR2 + LR3 = PROLR MC6
(see pages 21, 22 and 24)





PRACTICAL TRAINING

LR3 MC6

ADVANCED PROGRAMMING OF LINEAR ROBOTS

Objectives

- 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 adapting 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 and additional information, visit here:

www.kraussmaffei.com/trainingIMM

Prerequisite

Participation in practical training LR2 MC6

Valid for the following series

LRX series with MC6 control system

Select the
"Linear Robot Program-
ming" combined training

LR2 + LR3 = PROLR MC6
(see pages 21, 22 and 24)



OPERATION /
PROGRAMMING
LR ROBOTS



PRACTICAL TRAINING

BLR MC6 = LR1 + LR2

COMBINED OPERATION AND PROGRAMMING OF LINEAR ROBOTS

PRACTICAL TRAINING LR1 MC6

Operation, setup and programming of linear robots with WizardX

Objectives

- 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 the LRX-ON-PC PC software
- Practical exercises on simulators and robots

PRACTICAL TRAINING LR2 MC6

Free programming of linear robots

Objectives

- 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 the LRX-ON-PC PC software
- Practical exercises on simulators and robots

KraussMaffei
Test Certificate

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.

YOUR ADVANTAGE

Compact, in-depth practical training with KraussMaffei certification

Prerequisite

No special previous knowledge required

Valid for the following series

LRX series with MC6 control system

Dates

For current dates and additional information, visit here:

www.kraussmaffei.com/trainingIMM





PRACTICAL TRAINING

PROLR MC6 = LR2 + LR3

COMBINED EXPERT PROGRAMMING OF LINEAR ROBOTS

PRACTICAL TRAINING LR2 MC6

Free programming of linear robots

Objectives

- 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 the LRX-ON-PC PC software
- Practical exercises on simulators and robots

PRACTICAL TRAINING LR3 MC6

Advanced programming of linear robots

Objectives

- 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 adapting created program parts
- Identifying and correcting program errors
- Practical exercises on simulators and robots

KraussMaffei
Test Certificate

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 and additional information, visit here:

www.kraussmaffei.com/training/IMM

YOUR ADVANTAGE

Compact, in-depth practical training with KraussMaffei certification

Prerequisite

Participation in practical training LR1 MC6

Valid for the following series

LRX series with MC6 control system



OPERATION /
PROGRAMMING
LR ROBOTS

PRACTICAL TRAINING LR1 EC (EASYCONTROL)



OPERATION, SETUP AND PROGRAMMING OF LINEAR ROBOTS WITH WIZARDX

Objectives

- 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 the EasyControl-ON-PC software
- Practical exercises on simulators and robots

Target group

Machine operators, toolsetters, sampling personnel, automation personnel

Duration (practical training)

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

Dates

For current dates and additional information, visit here:

www.kraussmaffe.com/trainingIMM

Prerequisite

No special previous knowledge required

Valid for the following series

LRX series with EasyControl system

Select the
"Linear Robot Operation"
combined training

LR1 + LR2 =
BLR EC (EasyControl)
(see pages 25, 26 and 27)



OPERATION /
PROGRAMMING
LR ROBOTS



PRACTICAL TRAINING

LR2 EC (EASYCONTROL)

FREE PROGRAMMING

OF LINEAR ROBOTS

Objectives

- 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 their program structure
- Modifying basic programs (e.g. using WizardX)
- Procedure for testing program modifications
- Adapting program add-ons quickly and safely
- Working with the EasyControl-ON-PC software
- Practical exercises on simulators and robots

Target group

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

Duration (practical training)

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

Dates

For current dates and additional information, visit here:

www.kraussmaffe.com/trainingIMM

Prerequisite

Participation in practical training LR1 EC

Valid for the following series

LRX series with EasyControl system

Select the
"Linear Robot Operation"
combined training

LR1 + LR2 =
BLR EC (EasyControl)
(see pages 25, 26 and 27)



OPERATION /
PROGRAMMING
LR ROBOTS

PRACTICAL TRAINING BLR EC (EASYCONTROL)



= LR1 EC + LR2 EC

COMBINED OPERATION AND PROGRAMMING OF LINEAR ROBOTS

PRACTICAL TRAINING LR1 EC

Operation, setup and programming of linear robots with WizardX

Objectives

- 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 the EasyControl-ON-PC software
- Practical exercises on simulators and robots

PRACTICAL TRAINING LR2 EC

Free programming of linear robots

Objectives

- 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 the EasyControl-ON-PC software
- Practical exercises on simulators and robots

Target group

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

Duration (practical training)

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

YOUR ADVANTAGE

Compact, in-depth practical training with KraussMaffei certification

Prerequisite

No special previous knowledge required

Valid for the following series

LRX series with EasyControl system

Dates

For current dates and additional information, visit here:

www.kraussmaffei.com/trainingIMM

KraussMaffei
Test Certificate



OPERATION /
PROGRAMMING
LR ROBOTS



PRACTICAL TRAINING

IR1 KRC4 BASIC

OPERATION & SETUP OF ARTICULATED-ARM ROBOTS

Objectives

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

Subjects

- Setup and operation of a KraussMaffei robot system (KUKA)
- 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, each day from 8:30 a.m. to 4:30 p.m.

Dates

For current dates and additional information, visit here:

www.kraussmaffei.com/training/IMM

Prerequisite

No special previous knowledge required

Valid for the following series

IR series with KRC4 control system

Select the
"System Operation"
combined training

B1 + IR1 = BAIR MC6-KRC4
(see pages 11, 28 and 35)

KraussMaffei
Test Certificate



OPERATION /
PROGRAMMING
IR ROBOTS



PRACTICAL TRAINING

IR2 KRC4 ADVANCED

ADVANCED PROGRAMMING OF ARTICULATED-ARM ROBOTS

Objectives

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

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

Operators and toolsetters, maintenance personnel and programmers

Remarks

The training ends with a final test. A KM/KUKA certificate is awarded on successful completion of the course. Participants who successfully complete this training 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, each day from 8:30 a.m. to 4:30 p.m.

Dates

For current dates and additional information, visit here:

www.kraussmaffe.com/trainingIMM

Prerequisite

- Participation in our practical training IR1 KRC4
 - Basic knowledge of programming
 - Experience with automation systems
-

Valid for the following series

IR series with KRC4 control system





PRACTICAL TRAINING

IR1 KRC5 BASIC

OPERATION & SETUP OF ARTICULATED-ARM ROBOTS

Objectives

The objective of the training is to gain basic skills required to safely and reliably operate the KraussMaffei robot system (KUKA).

Subjects

- Safe and reliable use of KraussMaffei robot systems (KUKA)
- Basic knowledge of the structure of a KraussMaffei robot system (KUKA)
- Manual movement of the robot
- Starting robot programs and letting them run manually and in automatic operation
- Selecting and configuring a suitable operating mode
- Performing an initialization run
- Using robot programs
- Carrying out preparations for starting the robot program
- Move robot program back to home position after interruption
- Reading and interpreting messages from the robot control system
- Correcting and adapting positions
- Query of current robot position
- Gripper operation
- Setting various parameters on the KraussMaffei robot system (KUKA)

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

Dates

For current dates and additional information, visit here:

www.kraussmaffei.com/trainingIMM

Prerequisite

No special previous knowledge required

Valid for the following series

IR series with KRC5 control system

Select the
"System Operation"
combined training

IR1 + IR2 = BIR KRC5
(see pages 30, 31 and 32)

KraussMaffei
Test Certificate



OPERATION /
PROGRAMMING
IR ROBOTS



PRACTICAL TRAINING

IR2 KRC5 ADVANCED

ADVANCED PROGRAMMING OF ARTICULATED-ARM ROBOTS

Objectives

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

Subjects

- Adjustment on the robot
- Tool calibration
- Base calibration
- Creating and adapting movements
- Expanding the home traverse
- Query of current robot position
- Using logical functions in the program
- Setting various parameters on KraussMaffei robot systems (KUKA)
- Handling program files
- Handling variables
- Programming in KRL structure
- Benefits of program sequence controls

Target group

Operators, toolsetters and programmers

Remarks

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

Duration (practical training)

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

Dates

For current dates and additional information, visit here:

www.kraussmaffei.com/trainingIMM

Prerequisite

- Participation in our practical training IR1 KRC5
 - Basic knowledge of programming
 - Experience with automation systems
-

Valid for the following series

IR series with KRC5 control system

Select the
"System Operation"
combined training

IR1 + IR2 = BIR KRC5
[see pages 30, 31 and 32]



OPERATION /
PROGRAMMING
IR ROBOTS



PRACTICAL TRAINING

BIR KRC5 = IR1 + IR2

COMBINED OPERATION AND PROGRAMMING OF ARTICULATED-ARM ROBOTS

PRACTICAL TRAINING IR1 KRC5

Operation & setup
of articulated-arm robots

Objectives

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

Subjects

- Safe and reliable use of KraussMaffei robot systems (KUKA)
- Basic knowledge of the structure of a KraussMaffei robot system (KUKA)
- Manual movement of the robot
- Starting robot programs and letting them run manually and in automatic operation
- Selecting and configuring a suitable operating mode
- Performing an initialization run
- Using robot programs
- Carrying out preparations for starting the robot program
- Move robot program back to home position after interruption
- Reading and interpreting messages from the robot control system
- Correcting and adapting positions
- Query of current robot position
- Gripper operation
- Setting various parameters on the KraussMaffei robot system (KUKA)

Target group

Operators, toolsetters and programmers

Duration (practical training)

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

PRACTICAL TRAINING IR2 KRC5

Advanced programming
of articulated-arm robots

Objectives

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

Subjects

- Adjustment on the robot
- Tool calibration
- Base calibration
- Creating and adapting movements
- Expanding the home traverse
- Query of current robot position
- Using logical functions in the program
- Setting various parameters on KraussMaffei robot systems (KUKA)
- Handling program files
- Handling variables
- Programming in KRL structure
- Benefits of program sequence controls

KraussMaffei
Test Certificate

YOUR ADVANTAGE

Compact, in-depth practical training
with KraussMaffei certification

Prerequisite

- No special previous knowledge required

Valid for the following series

KRC5 control system

Dates

For current dates and additional
information, visit here:

www.kraussmaffei.com/trainingIMM



OPERATION /
PROGRAMMING
IR ROBOTS



Maffei

#opusMaffei

PRACTICAL TRAINING

BALR MC6 = B1 + LR1



COMBINED OPERATION AND PROGRAMMING OF INJECTION MOLDING MACHINES AND LINEAR ROBOTS

PRACTICAL TRAINING B1 MC6

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

Objectives

- 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-pulling 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

Machine operators, toolsetters, foremen, sampling personnel, automation personnel

Duration (practical training)

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

PRACTICAL TRAINING LR1 MC6

Operation, setup and programming of linear robots with WizardX

Objectives

- 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 the LRX-ON-PC PC software
- Practical exercises on simulators and robots

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

Valid for the following series

CX, PX, GX & MX series incl. LRX series with MC6 control system

Dates

For current dates and additional information, visit here:

www.kraussmaffei.com/trainingIMM



OPERATION /
PROGRAMMING
SYSTEM

PRACTICAL TRAINING

BAIR MC6-KRC4 = B1 + IR1

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



PRACTICAL TRAINING B1 MC6

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

Objectives

- 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-pulling 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 KRC4

Operation & setup of articulated-arm robots

Objectives

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

Subjects

- Setup and operation of a KraussMaffei robot system (KUKA)
- 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

Machine operators, toolsetters, foremen, 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.

YOUR ADVANTAGE

Compact, in-depth practical training with KraussMaffei certification

Prerequisite

- Participation in our practical training KS
- Basic knowledge of the injection molding process

Valid for the following series

CX, PX, GX & MX series with MC6 control system incl. IR series with KRC4 control system

Dates

For current dates and additional information, visit here:

www.kraussmaffei.com/trainingIMM



OPERATION /
PROGRAMMING
SYSTEM

PRACTICAL TRAINING

E MC6



TROUBLESHOOTING OF ELECTRICAL SYSTEM ON INJECTION MOLDING MACHINES

Objectives

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

Subjects

- Machine operation for maintenance personnel
- Error messages, event log and status displays on the screen
- Design and functional principle of the control unit
- 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 and additional information, visit here:

www.kraussmaffei.com/trainingIMM

Prerequisite

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

Valid for the following series

CX, PX, GX & MX series with MC6 control system

Select the
"Machine Maintenance"
combined training

e MC6 + HM2 CX/GX/MX
= eHM MC6 CX/GX/MX
(see pages 36, 43 and 45)



MAINTENANCE
ELECTRICAL SYSTEM



PRACTICAL TRAINING

LR MC6

MAINTENANCE AND TROUBLE-SHOOTING OF LINEAR ROBOTS

Objectives

- 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 and additional information, visit here:

www.kraussmaffe.com/trainingIMM

Prerequisite

- Electrically skilled person
 - Basic knowledge of how to operate KraussMaffei linear robots recommended
-

Valid for the following series

LRX series with MC6 control system



PRACTICAL TRAINING

PX



MAINTENANCE AND TROUBLESHOOTING OF ELECTRIC INJECTION MOLDING MACHINES

Objectives

- 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 and additional information, visit here:

www.kraussmaffei.com/trainingIMM

Prerequisite

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

Valid for the following series

PX series with MC6 control system



PRACTICAL TRAINING

E MC P1



TROUBLESHOOTING OF ELECTRICAL SYSTEM ON INJECTION MOLDING MACHINES

Objectives

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

Subjects

- Machine operation for maintenance personnel
- Error messages, event log and status displays on the screen
- Design and functional principle of the control unit
- 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

Duration (practical training)

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

Dates

For current dates and additional information, visit here:

www.kraussmaffe.com/trainingIMM

Prerequisite

- Electrically skilled person
 - Basic knowledge of how to operate KraussMaffei injection molding machines with MC P1 control system recommended
-

Valid for the following series

precision- & powerMolding with MC P1 control system

Select the
"Machine Maintenance"
combined training

e MC P1 + HM2 power-
Molding = eHM MC P1 pMX
(see pages 39, 46 and 48)





PRACTICAL TRAINING

LR EC (EASYCONTROL)

MAINTENANCE AND TROUBLE-SHOOTING OF LINEAR ROBOTS

Objectives

- 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)

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

Dates

For current dates and additional information, visit here:

www.kraussmaffe.com/trainingIMM

Prerequisite

- Electrically skilled person
 - Basic knowledge of how to operate KraussMaffei linear robots with EasyControl system recommended
-

Valid for the following series

LRX series with EasyControl system



PRACTICAL TRAINING

precisionMolding

MAINTENANCE AND

TROUBLESHOOTING OF ELECTRIC

INJECTION MOLDING MACHINES



Objectives

- Know differences in relation to hydraulic machines
- Perform optimal maintenance on the precisionMolding 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
- MC P1 control concept
- Converter systems
- 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 and additional information, visit here:

www.kraussmaffe.com/trainingIMM

Prerequisite

- Electrically skilled person
- Participation in practical training E MC P1
- Basic knowledge of how to operate KraussMaffei injection molding machines with MC P1 control system recommended

Valid for the following series

precisionMolding with MC P1 control system



PRACTICAL TRAINING

HM1

COMPONENTS AND HYDRAULIC SYSTEMS



Objectives

- 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.

Online training: 6 modules of 1.5 hours each (distributed over 2 days)

Dates

For current dates and additional information, visit here:

www.kraussmaffe.com/training/IMM

Prerequisite

No special previous knowledge required

Valid for the following series

All hydraulic series

PRACTICAL TRAINING

HM2 CX/GX/MX



TROUBLESHOOTING OF THE HYDRAULIC/MECHANICAL SYSTEM ON INJECTION MOLDING MACHINES

Objectives

- 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 and additional information, visit here:

www.kraussmaffe.com/trainingIMM

Prerequisite

- Basic knowledge of hydraulic/mechanical systems
 - Participation in practical training HM1
 - Basic knowledge of how to operate KraussMaffei injection molding machines recommended
-

Valid for the following series

CX, GX & MX series

Select the
"Machine Maintenance"
combined training

e MC6 + HM2 CX/GX/MX
= eHM MC6 CX/GX/MX
(see pages 36, 43 and 45)



MAINTENANCE
HYDRAULIC SYSTEM/
MECHANICAL SYSTEM



PRACTICAL TRAINING

HM3 CX/GX/MX

CALIBRATING INJECTION MOLDING MACHINES

Objectives

- 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 and additional information, visit here:

www.kraussmaffe.com/trainingIMM

Prerequisite

Participation in practical training HM2 CX/GX/MX

Valid for the following series

CX, GX & MX series with MC6 control system



MAINTENANCE
HYDRAULIC SYSTEM/
MECHANICAL SYSTEM

PRACTICAL TRAINING

eHM MC6 CX/GX/MX = e MC6 + HM2 CX/GX/MX



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

PRACTICAL TRAINING E MC6

Troubleshooting of electrical system on injection molding machines

Objectives

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

Subjects

- Machine operation for maintenance personnel
- Electrical safety rules and what they mean
- General hazards of electric current
- Working area for electricians and non-electricians
- Concept and electrical diagrams of the various control system variants
- Symbols and location identifiers in the electrical diagram
- Control system components in the low-voltage range
- Diagnostics on the screen and electrical diagram
- Systematic approach to troubleshooting
- Practical exercises on simulators and machine

PRACTICAL TRAINING HM2

Troubleshooting of the hydraulic/mechanical system on injection molding machines

Objectives

- 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)

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

Dates

For current dates and additional information, visit here:

www.kraussmaffei.com/training/IMM

KraussMaffei
Test Certificate

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)

Valid for the following series

CX, GX & MX series with MC6 control system



MAINTENANCE / SERVICING
ELECTRICAL/HYDRAULIC/MECHANICAL
SYSTEMS

PRACTICAL TRAINING

HM2 powerMolding

TROUBLESHOOTING OF THE HYDRAULIC/MECHANICAL SYSTEM ON INJECTION MOLDING MACHINES



Objectives

- 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 and additional information, visit here:

www.kraussmaffei.com/trainingIMM

Prerequisite

- Basic knowledge of hydraulic/mechanical systems
 - Participation in practical training HM1
 - Basic knowledge of how to operate KraussMaffei injection molding machines recommended
-

Valid for the following series

powerMolding with MC P1 control system

Select the
"Machine Maintenance"
combined training

e MC P1 + HM2 power-
Molding = eHM MC P1 pMX
(see pages 39, 46 and 48)



MAINTENANCE
HYDRAULIC SYSTEM/
MECHANICAL SYSTEM



PRACTICAL TRAINING

HM3 powerMolding

CALIBRATING INJECTION MOLDING MACHINES

Objectives

- 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 and additional information, visit here:

www.kraussmaffe.com/trainingIMM

Prerequisite

Participation in practical training HM2 powerMolding

Valid for the following series

powerMolding with MC P1 control system



PRACTICAL TRAINING

eHM MC P1 pM =

e MC P1 + HM2 powerMolding

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



PRACTICAL TRAINING E MC P1

Troubleshooting of electrical system on injection molding machines

Objectives

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

Subjects

- Machine operation for maintenance personnel
- Electrical safety rules and what they mean
- General hazards of electric current
- Working area for electricians and non-electricians
- Concept and electrical diagrams of the various control system variants
- Symbols and location identifiers in the electrical diagram
- Control system components in the low-voltage range
- Diagnostics on the screen and electrical diagram
- Systematic approach to troubleshooting
- Practical exercises on simulators and machine

PRACTICAL TRAINING HM2 powerMolding

Troubleshooting of the hydraulic/mechanical system on injection molding machines

Objectives

- 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)

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

Dates

For current dates and additional information, visit here:

www.kraussmaffe.com/training/IMM

KraussMaffei
Test Certificate

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)

Valid for the following series

powerMolding with MC P1 control system



**MAINTENANCE / SERVICING
ELECTRICAL/HYDRAULIC/MECHANICAL
SYSTEMS**



KraussMaffei
Pioneering Plastics

YOUR ROUTE TO KRAUSSMAFFEI MUNICH-PARSDORF AND SURROUNDING AREA



CONTACT INFO – INJECTION MOLDING TECHNOLOGY TRAINING REGISTRATION

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Team Training IMM/AUT

Krauss-Maffei-Strasse 1
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Visitor entrance: Am Gewerbepark 2
85599 Parsdorf

Internet: www.kraussmaffe.com/trainingIMM

You will find our conditions for participation here:

<https://km.kraussmaffe.com/en/teilnahmebedingungen.html>

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INJECTION MOLDING TECHNOLOGY &
AUTOMATION TRAINING 2024.



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