

Bühler Services
Partnering for better outcomes

Bühler Training

Getting the most from your cell



Innovations for a **better world.**

BUHLER

Training with Bühler

An investment that pays off

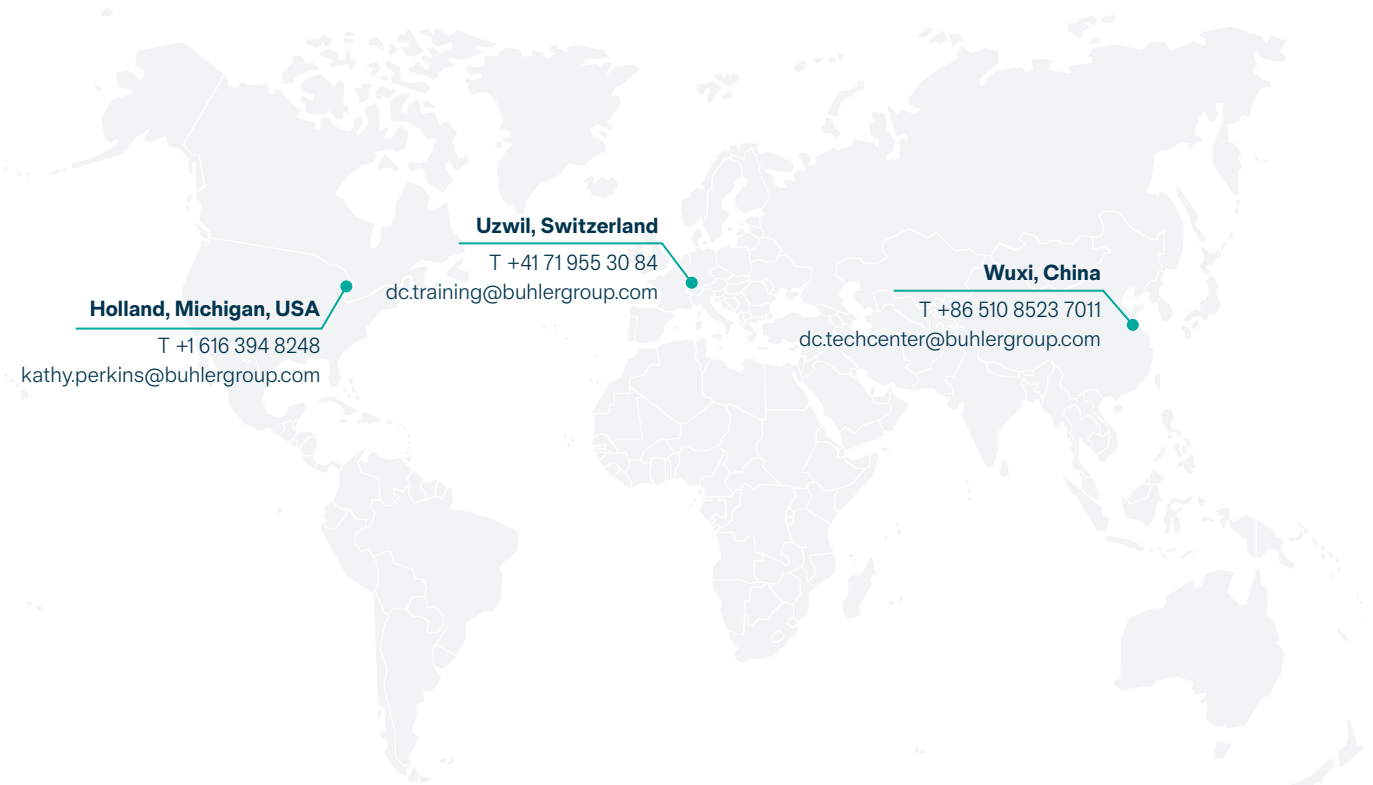
Why is training so important?

If you are constantly searching for higher quality and faster die-casting production, highly-trained personnel can make a significant impact. Quality training is an investment in your OEE (Overall Equipment Effectiveness).

Why do a training with Bühler?

- Our comprehensive know-how across the entire die-casting process covers everything from the basics, to the operation and maintenance of our machines and expert knowledge on processes and technologies.
- The Bühler training can take place in any of our application centers, at your site, or in webinar format. We also offer hybrid trainings that combine online learning sessions with practical trainings at your site or any of our sites.
- Our live die-casting cells in application centers around the world include Carat, Evolution, and Ecoline machines, with furnaces, integrated peripherals, and advanced control functions so we can simulate a wide range of applications to match your production set-up.
- With 170 training courses every year, there is bound to be a topic that could help your people improve your die-casting performance.

Application centers



Web education

Online courses

To enable training no matter where you are, we developed a set of online courses. These are available at fixed dates or at dates fitting your schedule. They include several 3 hour sessions, covering one die-casting topic each. Here is an example of how a course could look like:

Course can be customized to have a combination of online and in-person training.



Die Casting Academy: E-Learning on demand

Integrated in our online courses, we offer convenient and flexible e-learning packages to ensure effective preparation and follow-up for participants

Developed by our experienced die-casting tutors, our Die Casting Academy E-Learning is arranged in popular topics and guides your people through a series of learning experiences.

Available 24/7 through a secure log-in system, Bühler E-Learning allows your people to access the information they want, when they need it most. Videos, interactive modules and quizzes make it easy to learn even complex subjects. Assessments at the end of each topic will help to confirm how well they have done.

An overview dashboard enables you to see who has engaged in which areas and which topics they have completed.

Target group: Individuals at all levels involved in die-casting operations and decision-making within your organization.

Required skill level: Employees at all levels, from beginners to experienced die-casters.

Duration: Die Casting Academy online platform is available at anytime.

Locations: Anywhere with an authorized log-in for your system.

Technology Courses

Available as
online
training

Die Casting Principles

This course will give you a thorough basic understanding of die-casting technology, metallurgy, and processes

The course includes

- The principles of die-casting and metallurgy
- Process principles
- Composition of a die
- Systematics of spraying technologies and die tempering
- Casting trials (during on-site trainings in Uzwil or Wuxi)

By the end of the course you will have a good basic understanding of the principles of die casting.

Target group: Die-casting beginners, supply chain managers, executives, and board members

Required skill level: This course requires no previous die-casting knowledge or experience

Duration: 2 or 3 days on-site, 2 sessions online

Locations: ▪ Uzwil, Switzerland ▪ Wuxi, China
▪ Holland, USA ▪ Online

Available as
online
training

Process Optimization

The focus of this course is the optimization of your die-casting process to increase productivity, improve quality, and maximize cost-efficiency

This course includes

- Understanding the die-casting process
- Principles of metallurgy
- Analyzing casting parameters
- How to recognize process errors and their causes
- The optimization of the die-casting process
- How to protect the die during casting
- Recognizing statistical correlations
- Spraying technology and die tempering
- How to run casting trials

By the end of the course you will be able to optimize your die-casting process with effective troubleshooting, die protection, and statistical data. This can help you to reduce cycle time and waste, while improving quality and productivity.

Target group: Setters, operators, buyers, quality professionals, technologists, and customers

Required skill level: This course requires a basic knowledge of our die-casting machines and how to operate them

Duration: 4 days on-site, 9 sessions online

Locations: ▪ Uzwil, Switzerland ▪ Wuxi, China
▪ Holland, USA ▪ Online

Available as
online
training

Die Casting Errors

This course will teach you to recognize quality deviations as they begin to happen. This means you can intervene early to cut waste and increase output of quality parts

This course includes understanding

- The 20 most common casting errors
- The causes and effects of casting errors
- A systematic approach to identify errors
- How to prevent casting errors
- Hands-on training (during on-site courses)

With this new knowledge, you may find you can counteract potential casting defects as early as the product development and die design stage.

Target group: For technologists, quality engineers, and foundry supervisors

Required skill level: The course requires a basic understanding of die-casting technology as well as the principles of alloy treatment

Duration: 2.5 days on-site, 2 online sessions

Locations: ▪ Uzwil, Switzerland ▪ Online
▪ Other locations on request

Available as
online
training

Die Design

In this course you will learn about the most important aspects of die design. We want to enable you to increase product quality, reduce cycle time, and improve productivity and efficiency

This course includes

- The basics of good die design
- Principles of die casting and flow technology
- Guidelines for die design
- Calculation of the machine size
- Casting technology calculation
- Calculation of overflows and venting
- Runner design
- Guidelines for thermal die regulation
- Analysis of simulations

By the end of the course you will be able to use your deeper understanding of die design and construction. This will help you to produce high quality, complex components faster, more efficiently, and more economically.

Target group: Die design engineers, technologists

Required skill level: The course requires a basic understanding of die-casting technology

Duration: 4 days on-site, 9 sessions online

Locations: ▪ Uzwil, Switzerland ▪ Online
▪ Other locations on request



Machines - Setting up DataNet or DataView

Available as
online
training

Setting up and programming

This course will teach you how to set up your Bühler die-casting machines, including Carat, Ecoline, and Evolution series. For a detailed course overview for your specific machine, please reach out to dc.training@buhlergroup.com

This course includes

- Structure and function of die-casting machines
- How to operate and program your machine and its peripherals independently
- Know-how for preventive maintenance
- Safety of operation
- Programming and settings for the machine, as well as the die
- Practical training with casting trials (during on-site trainings in Uzwil and Wuxi)
- Process monitoring and diagnostics
- Identifying malfunctions in the process and on the machine

By the end of the course you will be confident in the set-up and adjustment of a Bühler machine. You will also be able to handle diagnostics and malfunctions faster, leading to less downtime, and higher availability of your cell.

Target group: Setters, operators, adjuster, and technologists working on die-casting machines

Required skill level: This course requires a basic knowledge of our machines and how to set them

Duration: 4 or 5 days on-site, 5 online sessions

Locations: ▪ Uzwil, Switzerland ▪ Wuxi, China
▪ Holland, USA ▪ Online



Machines - Maintenance

DataNet or DataView

Maintenance Electronics and Hydraulics

The content of this course is how to operate, program, maintain, and troubleshoot the electronic and hydraulic system. It is available for Carat, Ecoline, and Evolution series. For a detailed course overview for your specific machine, please reach out to dc.training@buhlergroup.com

This hands-on course covers

- Overview layout and function of the die-casting machine
- Operation, programming, and diagnostics
- Introduction of electronic modules
- Introduction about the hydraulics of the drive group, closing, and casting unit
- Fault analysis with the diagnostic diagram
- Practical troubleshooting (during on-site courses in Uzwil and Wuxi)
- Maintenance and repair of electronic and hydraulic systems

By the end of the course you will be able to operate and maintain your system to maximize efficiency, improve availability, and reduce downtime.

Target group: Electronic and mechanical maintenance engineers, automation specialist

Required skill level: This course requires experience in mechanical and electronic maintenance, diagram readings, and basic machine programming

Duration: 4-8 days

Locations: ▪ Uzwil, Switzerland ▪ Wuxi, China
▪ Holland, USA

**Available as
online
training**

Maintenance Electronics

In this course, you will learn to maintain and troubleshoot the electronic system of your die-casting machine to get maximum efficiency with minimum downtime. For a detailed course overview for your specific machine, please reach out to dc.training@buhlergroup.com

This course includes

- Overview layout and function of the die-casting machine
- Operation, programming, and diagnostics
- Introduction of electronic modules of the drive group, closing, and casting unit
- Fault analysis with the diagnostic diagram
- Practical troubleshooting (during on-site trainings in Uzwil and Wuxi)
- Maintenance and repair of the electronic system

By the end of the course you will be able to confidently and effectively operate and troubleshoot your system, improving availability, and lessening downtime.

Target group: Electronic maintenance engineers, electricians and automation specialists

Required skill level: This course requires experience in electronic maintenance, diagram readings, and basic machine programming

Duration: 4 or 5 days on-site, 3 online sessions

Locations: ▪ Uzwil, Switzerland ▪ Wuxi, China
▪ Holland, USA ▪ Online

Available as
online
training

Maintenance Hydraulics

This course will teach you how to maintain and troubleshoot the hydraulic system of your die-casting machine to ensure it operates at maximum efficiency and to increase your system availability. For a detailed course overview for your specific machine, please reach out to dc.training@buhlergroup.com

This course includes

- The basics, structure, and operation of hydraulics in die-casting systems
- An in-depth look at specific components like pumps, valves, and proportional hydraulic systems
- How to operate and program the die-casting machine with DataNet or DataView
- Practical troubleshooting, diagnostics, and repair (during on-site trainings in Uzwil and Wuxi)
- Maintenance and servicing of the hydraulics system

By the end of the course you will be able to prevent malfunctions and troubleshoot your system, improving availability, and reducing downtime.

Target group: Mechanical maintenance engineers, mechatronics

Required skill level: This course requires experience in mechanical maintenance, diagram readings and basic machine programming

Duration: 4 or 5 days on-site, 5 online sessions

Locations: ▪ Uzwil, Switzerland ▪ Wuxi, China
▪ Holland, USA ▪ Online

Only
available as
online
training

Diagnosis Maintenance

This course will teach you how to operate and troubleshoot the electronic and hydraulic system of your machine by using diagnostic diagrams

This online course covers

- Operation of the control cabinet
- Overview of possible diagnosis
- How to create a diagnosis diagram
- How to create an alarm diagram
- Usage of status reports
- Explanations on the infolog

By the end of the course you can create informative diagnosis of your system to maximize efficiency, improve availability, and reduce downtime.

Target group: Electronic and mechanical maintenance engineers and automation specialist

Required skill level: This course requires experience in mechanical and electronic maintenance, and basic machine programming

Duration: 3 days or 3 online sessions

Locations: ▪ Uzwil, Switzerland ▪ Online

Robot Programming

This course focuses on programming the BuhlRob die-casting foundry robot to optimize your die-casting processes

This hands-on course includes

- Settings for the HMI of the die-casting machine for BuhlRob
- How to load and configure all Bühler specific program modules and files
- Completing a cycle and test-run on a simulated die-casting machine
- How to develop additional programs
- Error handling and safety settings

By the end of the course you will be able to set up, program and use the BuhlRob foundry robot confidently, gently and effectively. You will be able to carry out your own changeover and retooling operations, and improve overall productivity.

Target group: Robot specialists, operators, or technicians working with foundry robots

Required skill level: You will need to understand the basic principles of robot programming from your suppliers training program

Duration: 3 days

Locations: ▪ Uzwil, Switzerland

Hydraulic Principles

**Available as
online
training**

This course provides principle knowledge about the functionalities of the hydraulic systems used in die casting

This course includes

- Understanding of the hydraulic processes
- Hydraulic switches
- Being able to sketch and explain diagrams
- Understanding performance characteristics by analyzing measurements
- Recognizing faults by analyzing measurements
- Preparing measurement strategies for fault elimination

By the end of the course you will be able to understand the hydraulic system of your die-casting machine and interpret critical data and measurements.

Target group: Maintenance and process engineers

Required skill level: Interest in hydraulics and how they are used in die casting

Duration: 3 days on-site, 3 online sessions

Locations: ▪ Uzwil, Switzerland ▪ Online

Customized Training

Available as
online
training

From basic operations and management training to the specifics of optimizing die design or the die-casting process, our bespoke training courses are tailored to your individual requirements

Our expert instructors will work with you to deliver the training content you need. They will also provide personalized guidance and tuition based on specific application questions or queries during the sessions. Training can take place at your site or in one of our training centers around the world or online.

With our customized training you can be sure that whatever your needs, however basic or specialized, we will provide exactly the type and level of instruction you need to improve your die-casting performance.

Target group: Managers, operators, technologists, maintenance, and support engineers

Required skill level: Your customized training course will be specifically tailored for the skill level of those that you wish to train

Duration: According to your needs

Locations: ▪ Uzwil, Switzerland ▪ Wuxi, China
▪ Holland, USA ▪ Online



A large industrial die casting machine, specifically a Støtek model, is shown in a factory setting. The machine is blue and white, with several large gas cylinders (likely argon or nitrogen) mounted on top. A robotic arm is visible on the right side of the machine. The background shows a typical industrial environment with overhead cranes and various cables.

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