KRONES Academy
Programme 2018
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Dear Readers,

Whether in the Champions League, in management or at a KRONES machine: Those who perform best work with a good trainer or coach to become better. The desire to increase one’s performance and to achieve one’s own goals faster can be fulfilled with the right training. And those who achieve their goals faster has in turn more freedom to enjoy the results. A successful manager has more time for his or her personal goals. A successful engineer has more freedom to carry out preventative maintenance. And successful machine operators protect themselves against stress and overtime with a higher line efficiency. In the end, the results are the same for everyone: less pressure, better performance.

Use the offering of our KRONES Academy – we will support you in achieving your goals and increasing your personal freedom.

We’ll see you at the KRONES Academy!

Yours,

Dr. Jörg Puma
Director of the KRONES Academy

Success is not inherent, but instead acquired
Immediately after commissioning

- Contiform 2 – Basics and Introduction to the Electrical Course: P 02
- Contiform 3 – Basics and Introduction to the Electrical Course: P 01

6 – 8 months after commissioning

- Contiform 2 – PET Process Technology Course: P 05
- Contiform 3 – PET Process Technology Course: P 07

18 months after commissioning or later

- Contiform 2 – Maintenance Course: P 04
- Contiform 3 – Maintenance Course: P 03

Top Ten problems with the Contiform

Course: P 08 Contiform 2
Course: P 09 Contiform 3

Plastics Technology
**Plastics Technology**

### Contiform 2 – PET Process Technology

**Course:** P 05; **duration:** 2 days

**Target group:** Operators, process technicians, mechanical engineers, electrical engineers

**Suitable for the following machine types:** Contiform 2 (K43X-XXX and K78X-XXX)

**Requirements:** You must have attended the course “Contiform Basics” (P 02) or have similar experience on the machine.

**Topics:**
- Basic knowledge of PET
- Decisive process factors
- Setting and optimising parameters for “new” bottles
- Using and managing recipes on the touch-screen
- Significance of process parameters in relation to preform and bottle specifications
- Practical exercises on the machine, especially for setting up “new” bottles
- Optimising processes for lower energy consumption
- Saving recipes

**Locations:** Neutraubling (DE), Franklin (US)

**Course objective:**
This training will help you obtain a consistently high bottle quality. Even with very lightweight preforms and a tight process window. Moreover, you will learn how to adjust your machine to new bottle types and optimise the parameters.

### Contiform 3 – PET Process Technology

**Course:** P 07; **duration:** 2 days

**Target group:** Operators, process technicians, mechanical engineers, electrical engineers

**Suitable for the following machine types:** Contiform 3 (K44X-XXX)

**Requirements:** You must have attended the course “Contiform Basics” (P 02) or have similar experience on the machine.

**Topics:**
- Basic knowledge of PET
- Decisive process factors
- Setting and optimising parameters for “new” bottles
- Using and managing recipes on the touch-screen
- Significance of process parameters in relation to preform and bottle specifications
- Practical exercises on the machine, especially for setting up “new” bottles
- Optimising processes for lower energy consumption
- Saving recipes

**Locations:** Neutraubling (DE), Franklin (US), Taicang (CN)

**Course objective:**
This training will help you obtain a consistently high bottle quality. Even with very lightweight preforms and a tight process window. Moreover, you will learn how to adjust your machine to new bottle types and optimise the parameters.
Contiform 2 – Maintenance
Course: P 04; duration: 2 days

Target group:
Operators, process technicians, mechanical engineers, electrical engineers

Suitable for the following machine types: Contiform 2 (K43X-XXX and K78X-XXX)

Requirements:
You must have attended the course “Contiform Basics (P 02)” or have similar experience on the machine.

Topics:
- Correct reaction to malfunctions
- Replacing wear parts
- Wearing part strategy
- Checking and replacing components
- Correctly adjusting new parts

A current model of the Contiform 3 (Zenon 6.22) is available for the practical training units.

Locations:
Neutraubling (DE), Franklin (US), Johannesburg (ZA)

Course objective:
The objective of this seminar is trouble-free production with locationer downtimes. You will learn how to consequently prevent malfunctions by correctly adjusting the Contiform, thus permanently increasing the efficiency of the machine. The topics “Identifying and eliminating mechanical malfunctions” round off your knowledge.

Contiform 3 – Maintenance
Course: P 03; duration: 2 days

Target group:
Operators, process technicians, mechanical engineers, electrical engineers

Suitable for the following machine types: Contiform 3 (K44X-XXX)

Requirements:
You must have attended the course “Contiform Basics (P 02)” or have similar experience on the machine.

Topics:
- Correct reaction to malfunctions
- Replacing wear parts
- Wearing part strategy
- Practical adjustments on mould hangers, blowing/heating module, stretching unit, cams, etc.
- Transfer synchronisation
- Maintenance and lubrication

A current model of the Contiform 3 (Zenon 6.22) is available for the practical training units.

Locations:
Neutraubling (DE), Franklin (US)

Course objective:
The objective of this seminar is trouble-free production with shlo-cationer downtimes. You will learn how to consequently prevent malfunctions by correctly adjusting the Contiform, thus permanently increasing the efficiency of the machine. For this purpose, you will be doing the settings on the training machine and learn to optimise it further. The topics “Identifying and eliminating mechanical malfunctions” round off your knowledge.
Plastics Technology

Contiform 2 – Basics and Introduction to the Electrical Components
Course: P 02; duration: 3 days

Target group: Operators, mechanical engineers, electrical engineers, line managers
Suitable for the following machine types: Contiform 2
Requirements: none

Topics basics:
- Construction and method of operation of the Contiform
- Machine pneumatic system
- Lubrication intervals
- Possible faults and solutions
- Heating and blowing process
- Visualisation system Zenon 6.20/6.22

Topics electric components:
- AS-i bus, B&R control system, Profibus, KRONES wiring diagram
- A current model of the Contiform 2 (Zenon 6.22) is available for the practical training units.

Course objective:
How can malfunctions be quickly troubleshooted and how can production stability be optimised on a sustained basis? With the right quantity of background knowledge and practical exercises, this seminar enables you to safely operate the Contiform and to do important settings autonomously.

Locations:
- Neutraubling (DE), Franklin (US), Johannesburg (ZA), Lagos (NGA)

Contiform 3 – Basics and Introduction to the Electrical Components
Course: P 01; duration: 3 – 4 days

Target group: Operators, process technicians, mechanical engineers, electrical engineers
Suitable for the following machine types: Contiform 3
Requirements: none

Topics basics:
- Construction and method of operation of the Contiform
- Machine pneumatic system
- Lubrication intervals
- Possible faults and solutions
- Heating and blowing process
- Zenon 6.20/6.22/7.10 visualisation system: Diagnosing faults

Topics electric components:
- AS-i bus, B&R control system, Profibus/Profinet, KRONES wiring diagram

A current model of the Contiform 3 (Zenon 6.22) is available for the practical training units.

Course objective:
How can malfunctions be quickly eliminated and how can production stability be optimised on a sustained basis? With the right quantity of background knowledge and practical exercises, this seminar enables you to safely operate the Contiform and to do implementation settings autonomously.

Locations:
- Neutraubling (DE), Franklin (US)
Plastics Technology

Top-ten problems with the Contiform
Course: P 08, P 09; duration: 3 days

Target group:
Operators with maintenance tasks, mechanical engineers, line managers, maintenance managers

Suitable for the following machine types: Contiform 2 (P 08) and Contiform 3 (P 09)

Requirements:
You must have attended the course “Contiform Basics” (P 02) or have similar experience on the machine.

Topics:
- Rejected bottles
- Malfunction in the preform feed system
- Limit value during the vibration measurement
- Faulty stretch blow moulding processes
- Missing sleeve at transfer point, adjust Servo Drive Control (SDC)
- Defective radiators
- General fault
- Lack of cleaning
- Fault message on stretching motor

Locations:
Neutraubling (DE), Taicang (CN)

Course objective:
Learn how to solve problems quickly, prevent malfunctions and avoid downtimes. This compact seminar contains tested analysis routines for the most frequent problems on the Contiform. You will learn in a mechanical way directly on the training machine how they can be troubleshooting.
### Filling Technology

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<th>6 – 8 months after commissioning</th>
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<td>Top Ten problems with the Filling Technology</td>
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Immediately after commissioning 6 – 8 months after commissioning
**Filling Technology**

**Filler Volumetic VODM, Modulfill VFS, VFJ – Mechanical Components of the Filler**

**Course:** F 01; **duration:** 4 days

**Target group:** Operators with maintenance tasks, mechanical maintenance staff

**Suitable for the following machine types:** Volumetic VODM and variants, Modulfill VFS, VFJ

**Requirements:** Experience with the machine is an advantage, but not absolutely necessary.

**Topics:**
- Construction and method of operation of the filler
- Troubleshooting on the filler valve
- Piping and instrumentation diagrams
- Operating and cleaning programs
- Control and visualisation on the touch-screen
- Pneumatic components
- Cleaning, lubricating, and maintaining the machine
- Maintenance of the most important subassemblies

**Locations:** Neutraubling (DE), Franklin (US), Taicang (CN), Bangkok (TH), São Paulo (BR), Johannesburg (ZA), Lagos (NGA)

**Course objective:** In four days, you will become familiar with the construction and the method of operation of the filler. After the course, you will be able to overhaul a filling valve on your own, and to maintain the most important assemblies. You will know how to systematically spot malfunctions and you will be familiar with maintaining and lubricating the machine.

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**Filler Mecafil VKP, Modulfill HRS – Mechanical Components of the Filler**

**Course:** F 02; **duration:** 4 days

**Target group:** Operators with maintenance tasks, mechanical maintenance staff

**Suitable for the following machine types:** Mecafill VKP, Mecafill VKPV, Mecafill VKPV-CF, Mecafill VKP-PET, Mecafill VKPV-DL and Modulfill HRS

**Requirements:** Experience with the machine is an advantage, but not absolutely necessary.

**Topics:**
- Construction and method of operation of the filler
- Troubleshooting on the filler valve
- Piping and instrumentation diagrams
- Operating and cleaning programs
- Control and visualisation on the touch-screen
- Pneumatic components
- Cleaning, lubricating, and maintaining the machine
- Maintenance of the most important subassemblies

**Locations:** Neutraubling (DE), Franklin (US), Bangkok (TH), São Paulo (BR), Johannesburg (ZA), Lagos (NGA)

**Course objective:** In four days, you will become familiar with the construction and the method of operation of the filler. After the course, you will be able to overhaul a filling valve on your own, and to maintain the most important assemblies. You will know how to systematically spot malfunctions and you will be familiar with maintaining and lubricating the machine.
Aseptic Filling with PET-Asept D (HO) – Process Technology

Course: F 03; duration: 5 days

Target group: Operators, line managers

Suitable for the following machine types: PET-Asept D (H2O2)

Requirements: none

Topics: ■ Process sequence and control via programs ■ Method of operation of the system ■ Hygienic standards ■ Principle of troubleshooting ■ Basics of the process lead control

Location: Neutraubling (DE)

Course objective:
What is the construction of an aseptic line and what processes are executed in the line? You will be able to confidently answer questions like these after the course, because you will be in a position to explain the significance of the line components and of the hygienic measures to others. In five intensive days, you will have developed a sound basis for operating the line. Bringing an existing line into an aseptic condition and systematically eliminating minor malfunctions will be a routine job for you at the end of the course.

Aseptic Filling with PET-Asept L (Peracetic Acid) – Process Technology

Course: F 04; duration: 5 days

Target group: Operators, line managers

Suitable for the following machine types: PET-Asept L (PES)

Requirements: none

Topics: ■ Process sequence and control via programs ■ Method of operation of the system ■ Hygienic standards ■ Principle of troubleshooting ■ Basics of the process lead control

Location: Neutraubling (DE)

Course objective:
What is the construction of an aseptic line and what processes are executed in the line? You will be able to confidently answer questions like these after the course, because you will be in a position to explain the significance of the line components and of the hygienic measures to others. In five intensive days, you will have developed a sound basis for operating the line. Bringing an existing line into an aseptic condition and systematically eliminating minor malfunctions will be a routine job for you at the end of the course.
Target group: Operators with maintenance tasks, mechanical engineers, line managers, maintenance managers

Suitable for the following machine types: Mecafill VK, VKP or Modulfill HRS (F 05) Modulfill VFS and HES (F 06)

Requirements: Basic knowledge of operation and mechanical components of the corresponding fillers.

Topics:
- Filler
  - Foam formation
  - Wrong product concentration
  - Overfilled containers
  - Underfilled containers
  - Bad oxygen values for beer
  - Damage to the rotary media manifold
  - Damage to the lift cylinders for glass fillers
- Capper
  - Canted caps
  - Caps too firm, too loose

Location: Neutraubling (DE)

Course objective: KRONES Service Line offers our customers fast hotline support for all questions relating to production. To ensure that you also benefit from the questions asked and the answers given, a compact seminar is now being compiled on the basis of the most frequent problems associated with analysis routines and troubleshooting on all subjects relating to the filler — and of course you will also be shown how to eliminate problems quickly on the training machines. The participants will therefore learn how to solve problems quickly, prevent malfunctions and avoid downtimes.
### Process Equipment

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<td>Twin Flow System (TFS) — Operator Training</td>
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<td>EVOGUARD Valve Technology</td>
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<td>Botec F1 — Recipe Management</td>
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<td>18 months after</td>
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<tr>
<td>commissioning or later</td>
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</table>
Brewing Technology BOTEC F1 – basic course
Course: B 13; duration: 1,5 days
Target group: Operator (personnel charged with production and CIP)
Requirements: Basic knowledge in the handling of computers and of the production process
Topics:
Basics
■ Brewing as batch process
■ The automation concept
■ Generation of alarms and messages
■ EMERGENCY STOP
■ Power failures
■ Interlocks
Components
■ Hardware
■ Software
AUTO production
■ Recipe structure
■ Recipe sequence
Using the BOTEC system
■ Authorisation levels
■ Order system
■ Recipe monitoring
■ Trend monitoring
■ Batch report
■ Online help
■ SCADA objects
■ Manual mode
Practical exercises on the simulated system (optional)
■ Loading, starting and monitoring a recipe on a simulated line industrial PC
— Production recipe
— CIP recipe
Course objective:
How can commands be created and executed for automatic production? How can parameters be checked and changed during automatic mode? And how do you execute manual interventions? You will be given the answers to these questions in this course. You will also learn how to detect the causes of alarms and messages, have access to batch reports and trend graphs and learn how to execute a restart, for example after a power failure.
Location:
Neutraubling (DE)

EVOGUARD Valve Technology
Course: B 09; duration: 1,5 days
Target group: Operators with maintenance tasks, mechanical engineers
Suitable for the following components: EVOGUARD valve series
Requirements: none
Recommendation:
Can be combined with the courses
■ Filler Volumetric VODM, Modufill VFS, VFJ – Mechanical Components of the Filler (F 01)
■ Filler Mecafil VKP, Modufill HBS – Mechanical Components of the Filler (F 02)
■ Twin Flow System (TFS) – Operator Training (B 10)
Topics:
■ Method of operation of the individual valves (using models)
■ Process engineering basics
■ Pneumatic components
■ Disassembling and assembling individual valves using training components
■ PLC
■ Maintenance and service
Locations:
Neutraubling (DE), Freising (DE)
Course objective:
On this course you will acquire a basic understanding of the process and control technology of the EVOGUARD valves. You will learn everything necessary to overhaul and maintain the valves on your own – from replacing the seals and ordering spare parts to technical documentation. At the end of the course you feel quite at home in the world of valves. You will know which valve is suitable for which application. And you will be able to match the type of seal and seal material to the different applications.
Botec F1 – Recipe Management
Course: B 12; duration: 1 day
Target group: Master brewers, brewing engineers
Suitable for the following software: Botec F1
Requirements: Basic computer knowledge, basic knowledge of the Botec F1 system
Recommendation: Can be combined with courses “EVOGUARD Valve Technology” (B 09) and “Twin Flow System (TFS) – Operator Training” (B 10)
Topics:
- Troubleshooting, tips and tricks
- Handling/accessing:
  - Online help
  - Technical documentation
- Botec F1 Helpline
Course objective:
On this course, you will acquire a sound basis for your daily work with the Twin Flow System. Not only will you gain insight into the construction and method of operation of the filter, you will also learn how to systematically use the technical documentation as well as the program help feature. After only one day, you will have a command of analysis and configuration of protocols, and you will safely use the tools for recording and evaluating data.

Twin Flow System (TFS) – Operator Training
Course: B 10; duration: 1 day
Target group: Operators
Suitable for the following machine types: Candle filter, Twin Flow System (TFS)
Requirements: Basic knowledge of filtration
Recommendation:
- Can be combined with course “Botec F1 – Recipe Management” (B 12)
- Can be combined with courses “EvOguaRd Valve Technology” (B 09) and “Twin Flow System (TFS) – Operator Training” (B 10)
Topics:
- Production process (special TFS parameters, optimisation options)
- Cleaning process (special TFS cleaning parameters, ensuring successful cleaning, visual inspection of the candles)
- Malfunctions during the process (troubleshooting, analysing and preventing malfunctions in the ongoing process)
- Process monitoring and analysis based on parameters, trends and batch logs
- Inspection and maintenance of mechanical components
- Clarifying individual problems
Locations:
- Neutraubling (DE), Freising (DE)
Course objective:
On this course, you will acquire a sound basis for your daily work with the Twin Flow System. Not only will you gain insight into the construction and method of operation of the filter, you will also learn how to manipulate and optimise the process yourself. You will master trends and batch protocols analysis as confidently as defining maintenance intervals and inspecting mechanical components. Last but not least, we will reveal tips and tricks for efficiently saving water.
**Brewing Technology – Botec F1 System Administrator, Part 1**

**Course:** B 11; duration: 4 days

**Target group:** Software developers, system administrators

**Maximum of three participants per course**

**Requirements:** Well-founded knowledge of Windows, basic knowledge of Botec F1 (operator training), well-founded knowledge of electrical components and PLC software

**Topics:**
- Creation of new stepped phases for a unit with recipe parameters (SFMs)
- Creation of new unit procedures
- Creation of locking devices for final control elements
- Changing and creation of operating sequences in the PLC code for individual final control element and entire units
- Creation of a new recipe and order behaviour for a unit
- Testing of changed systems with simulation
- Troubleshooting and tricks
- Handling of accessing
- Online help
- Technical Documentation
- Botec Helpline
- Botec programmes and tools:
  - System configuration
  - Plant configuration
  - Recipe management
  - Order system
  - GcLD (optional)

**Location:** Neutraubling (DE)

**Course objective:**
The course participants learn how they can independently make smaller changes to the PLC program. In addition, they will become familiar with the system architecture of Botec F1. Systematic troubleshooting in the software is one of the main elements of this course. With an understanding of the automation system and the PLC code structure, the Botec system administrator can provide the process technician (master brewer) with strong support – both when creating new and when changing existing production and CIP recipes.

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**Brewing Technology – Botec F1 System Administrator, Part 2**

**Course:** B 11; duration: 4 days

**Target group:** Software developers, system administrators

**Maximum of three participants per course**

**Requirements:** Sound knowledge of Windows, participation in part 1, sound knowledge of the SQL server tools and sound knowledge of electrical engineering

**Topics:**
- Update of the hardware list
- Addition of an actuator or the unit in the plant configuration
- Creation of a process image in the visualisation system
- Addition of the necessary control blocks to the PLC code
- Troubleshooting and tricks
- Handling of accessing:
  - Online help
  - Technical Documentation
  - Botec Helpline
- IST WPF (optional)
- Botec programmes and tools:
  - System configuration
  - Plant configuration
  - Recipe management
  - Order system
  - GcLD (optional)

**Location:** Neutraubling (DE)

**Course objective:**
In this course, which is built on part 1, you will find out how to make minor changes to your line by yourself. In addition to repeating and deepening the content from part 1, this course will focus particularly on the ILTIS visualisation program from IST. Maintenance tasks such as the creation and editing of user profiles, backups and system restoration will be practised so that by the end you will be able to master the automation system safely and permanently.
Labelling Technology

Immediately after commissioning

Cold-glue technology: basics, maintenance, adjusting work (modular machine)
Course: L 03

Cold-glue technology: basics, maintenance, adjusting work (table machine)
Course: L 01

Sleevematic 795 M: basics, maintenance, adjusting work
Course: L 05

Self-adhesive technology APS 3 and APS 4: basics, maintenance, adjusting work
Course: L 04

Contiroll HS (High Speed): maintenance
Course: L 09

Hotmelt technology Contiroll 810: basics, maintenance, adjusting work
Course: L 03

Contiroll HS (High Speed): Operator Training
Course: L 04

Hotmelt technology Contiroll 745: basics, maintenance, adjusting work
Course: L 02

Systematic troubleshooting using the Contiroll 810 as an example
Course: L 14

Hotmelt technology Contiroll: Expert Training
Course: L 15

Top Ten problems with the Contiroll labellers
Course: L 20

Cold-glue technology: basics, maintenance, adjusting work (modular machine)
Course: L 03

Cold-glue technology: basics, maintenance, adjusting work (table machine)
Course: L 01

Sleevematic 795 M: basics, maintenance, adjusting work
Course: L 05

Self-adhesive technology APS 3 and APS 4: basics, maintenance, adjusting work
Course: L 04

Contiroll HS (High Speed): maintenance
Course: L 09

Hotmelt technology Contiroll 810: basics, maintenance, adjusting work
Course: L 03

Contiroll HS (High Speed): Operator Training
Course: L 04

Hotmelt technology Contiroll 745: basics, maintenance, adjusting work
Course: L 02

Immediately after commissioning

6 – 8 months after commissioning

18 months after commissioning or later
Self-adhesive technology – APS 3 und APS 4: basics, maintenance, adjusting work
Course: L 04; duration: 2 days

Target group:
Operators, mechanical maintenance staff, electrical maintenance staff, line managers

Suitable for the following machine types: Autocol APS 3 and APS 4 table and modular machines

Requirements: none

Topics:
- ■ Overview of the machine functions
- ■ Pneumatic and electrical components
- ■ Operation of the machine and touch-screen
- ■ Troubleshooting

Course objective:
Spurring labeler top performance – without unplanned downtimes and product faults? You will find out how to do that in this seminar. You will gain an understanding of the design and functionality of the machine enabling you to operate it independently and safely. You will learn how to quickly eliminate malfunctions and how to prevent them in the future.

Locations:
Neutraubling (DE), Franklin (US), Bolton (UK), Taicang (CN), São Paulo (BR)

Sleevematic 795 M: Basics, maintenance, adjusting work
Course: L 05; duration: 2 days

Target group:
Operators with maintenance tasks, mechanical engineers, line managers

Suitable for the following machine types: only for Sleevematic type 795 M – linear machine for shrink sleeves

Requirements: none

Topics:
- ■ Overview of the machine functions
- ■ Label and container path
- ■ Operation of the machine and touch-screen
- ■ Pneumatic and electrical components
- ■ Explaining the most important parameters
- ■ Mechanical adjustments: Machine infeed, mandrel, cutting ring, feed and transfer rollers
- ■ Quality of labels and containers
- ■ Maintenance and lubrication

Locations:
Neutraubling (DE), Franklin (US)
Labelling Technology

Cold-glue technology: basics, maintenance, adjusting work (table machine)
Course: L 17; duration: 4 days

Target group:
Operators, mechanical maintenance staff, electrical engineers, line managers

Suitable for the following machine types: all KRONES table machines with cold-glue labelling stations

Topics:
- Mechanical and electrical components
- Tasks prior to, during and after production
- Control elements, touch-screen
- Malfunctions and troubleshooting

Course objective:
The objective of this seminar is efficient production with unplanned downtimes. You will learn how to consequently prevent malfunctions with the correct adjustment and maintenance work, thus increasing the efficiency on a sustained basis. After four days with many practical exercises, you can work independently with the machine while achieving a high labelling quality and quickly eliminating various faults.

Locations:
- Neutraubling (DE), Franklin (US), Bolton (UK), Bangkok (TH), Johannesburg (ZA), Lagos (NGA)

Requirements: none

Locations:
- Neutraubling (DE), Franklin (US), Bolton (UK), Bangkok (TH), Johannesburg (ZA), Lagos (NGA)
Cold-glue technology: Basics, maintenance, adjusting work (module machine)
Course: L 18; duration: 4 days

Target group: Operators, mechanical maintenance staff, electrical staff, line managers

Suitable for the following machine types: all KRONES module machines with cold-glue labelling stations

Requirements: none

Topics:
- Machine functions
- Mechanical and electrical components
- Tasks prior to, during and after production
- Control elements, touch-screen
- Malfunctions and troubleshooting
- Glue, label and container quality

Course objective: The objective of this seminar is efficient production with unplanned downtimes. You will learn how to consequently prevent malfunctions with the correct adjustment and maintenance work, thus increasing the efficiency on a sustained basis. After four days with many practical exercises, you can work independently with the machine while achieving a high labelling quality and quickly eliminating various faults.

Locations: Neutraubling (DE), Bolton (UK), Johannesburg (ZA), São Paulo (BR), Franklin (US), Lagos (NGA)

Cold-glue technology: Expert Training
Course: L 16; duration: 5 days

Target Group: Mechanical maintenance staff

Suitable for the following machine types: all KRONES cold-glue, table and module machines

Requirements: Basic knowledge in general mechanics and labelling technology

PraxisTopics:
- Removing, repairing, assembling and adjusting
  - Worm drive, toothed belt and universal joint shaft
  - Guidance handling parts and dead plates
  - Bottle table, servo motor seal kit, rotary plate
  - Setting rotary encoder, zero point indicator
  - On the labelling station
    - Glue roller bearing, glue scraper
    - Pallet processing
    - Label magazine
    - Gripper cylinder

Location: Neutraubling (DE)

Course objective: The best health program for a machine? Predictive maintenance! This course will ensure that your cold glue machine runs stably and trouble-free. Under the guidance of a KRONES instructor, you will repair all important assemblies on your own and practise the individual handles in a relaxed atmosphere. After five days you will have gained experience to pass on your knowledge to others.

Labelling Technology
Labelling Technology

Hotmelt technology Contiroll 810: Basics, maintenance, adjusting work
Course: L 03; duration: 4 days
Target group: Operators, mechanical maintenance staff, electrical staff, line managers
Suitable for the following machine types: Contiroll HS (High Speed) and modular machines
Requirements: none
Topics:
- Machine functions
- Pneumatic and electrical components
- Tasks prior to, during and after production
  - Control elements, touchscreen, troubleshooting
- Change-over
- Adjustment
  - Machine infeed and discharge
  - Brushing on, rolling on
  - Reel holder, label reel splicing
- Label web guide, feed roller, cutting unit
- Glue roller and glue scraper, vacuum-grip cylinder
- Label transfer
- Lubrication and maintenance
- Labels, container and glue
- Parameters
Locations: Neutraubling (DE), Franklin (US), São Paulo (BR), Taicang (CN)
Course objective: Label at high speed and with perfect quality? With the right operation and the correct maintenance, this is mere child’s play for the Contiroll. With the right amount of background knowledge and with practical exercises, this seminar enables you to ensure a perfect product quality and to quickly eliminate possible malfunctions.

Hotmelt technology Contiroll 745: Basics, maintenance, adjusting work
Course: L 02; duration: 4 days
Target Group: Operators, mechanical maintenance staff, electrical maintenance staff, line managers
Suitable for the following machine types: Contiroll (745)
Requirements: none
Topics:
- Machine functions
- Pneumatic and electrical components
- Tasks prior to, during and after production
  - Control elements, touchscreen, troubleshooting
- Conversion
- Settings
  - Container throughput
  - Brushing-on and rolling-on unit
  - Reel holder, automatic
  - Label reel splicing
  - Label web buffer, label web guide
  - Feed roller, cutting unit, gluing unit
  - Vacuum gripper cylinder
  - Label parameters
- Lubrication and maintenance
- Label, container and glue quality
Locations: Neutraubling (DE), Franklin (US), Bolton (UK), Bangkok (TH)
Course objective: Lower maintenance costs, more efficient change-over: This course will show you how to achieve these objectives. In four days, you will obtain all knowledge that you need to keep the Contiroll in operation in the best possible manner and to maintain it optimally. The practical part on our training machine provides the opportunity to test and practise the new methods in a relaxed atmosphere.
Labelling Technology

Change-over of Labellers – Workshop
Course: L 07; duration: 2 days

Target group:
Operators, mechanical engineers, electrical engineers, line managers

Suitable for the following machine types:
All KRONES labellers

Requirements:
None

Topics:
- Analysis of the actual situation
- Specification of your objective together with operators and managers
- Optimising the process with the aid of the experience of the team members
- Developing a new process
- Recording the new process in a checklist
- Change-over based on the newly defined processes
- Measuring the time savings

Locations:
Franklin (US), in your factory

Course objective:
Efficiency is frequently neglected during change-overs. To counteract this problem, the participants in this workshop will work out together methods for a more productive change-over, considering the individual situation of your line. The new process will be described in a checklist and can be implemented immediately in your plant. Our trainers work according to the SMED method, which is also applied within the framework of TPM.
Hotmelt technology Contiroll: Expert Training
Course: L 15; duration: 3 days

Target group: Mechanical maintenance staff
Suitable for the following machine types: Contiroll 745, Contiroll HS, Contiroll Modul
Requirements: Basic knowledge in general mechanics and labelling technology

Topics:
- Repair work and adjustment in practice: Rolling-on station, rotary plate, container centring unit, gluing unit, cutting unit, vacuum-grip cylinder, label web buffer, label feed roller
- Inspection of the main assemblies
- Routine maintenance and lubrication work
- Working with the special tools

Locations: Neutraubling (DE), Johannesburg (ZA)

Course objective:
Less downtime, less malfunctions, longer service life – this training will show you how to increase the productivity of the labeller on a sustained basis. You will learn how to quickly restore the machine to an operational condition in the event of a failure and how to perform preventive maintenance. A training machine and special training modules provide you the opportunity to test and practice the new methods with the support of the trainer.

Contiroll HS (High Speed): Operator Training
Course: L 08; duration: 2 days

Target group: Operators, mechanical maintenance staff
Suitable for the following machine types: Contiroll HS (High Speed)
Requirements: none

Topics:
- Construction, safety and function of the Contiroll HS
- Pneumatic components
- Touch-screen menu navigation
- Maintenance and lubrication
- Basic knowledge of electrical components
- Handling containers and labels
- Elementary troubleshooting methods

Locations: Franklin (US), Bangkok (TH), Taicang (CN)

Course objective:
This course will provide you with an insight into the Contiroll HS, its controller functions and the navigation on the touch-screen. By means of practical exercises, you will gain the necessary confidence to efficiently operate the Contiroll HS on a high production level.
Contiroll HS (High Speed): Maintenance
Course: L 09; duration: 3 days

Target group: Operators, mechanical maintenance staff
Suitable for the following machine types: Contiroll HS (High Speed)
Requirements: Participation in the course “Contiroll HS – Operator Training” (L 08) or corresponding knowledge

Topics:
- Explanation of the mechanical and pneumatic components with practical exercises
- Maintenance intervals, maintenance
- Adjustment procedures for Contiroll HS components
- Removal and installation of necessary components
- Proper cleaning and maintenance exercises
- Enhancement of knowledge on troubleshooting methods

Locations:
Franklin (US), Bangkok (TH)

Course objective:
This maintenance course will help you reach maximum productivity using the Contiroll HS. During three intensive training days you will enhance your knowledge about setup, the mechanical construction, and the timing of the machine. This enables you to check, set, and correct all mechanical functions of the Contiroll HS.

Labelling Technology

Top-ten problems with the Contiroll labellers
Course: L 20; duration: 3 days

Target group: Operators with maintenance tasks, mechanical engineers, line managers, maintenance managers
Suitable for the following machine types: Contiroll HS (810), Contiroll ED
Requirements: Basic knowledge of operation and mechanical components of the Contiroll

Topics:
- Poor label quality (seat too high or too low, overlapping, etc.)
- Cutting mark control and incorrect label lengths
- Gluing (too much, too little, uneven)
- Label crooked on the container
- Problem with cutting unit and cutting position
- Fault during automatic splicing
- Problems the container run-through can cause
- Handling “Gripper monitoring 2 & 3” fault messages
- Change parameters or adjust mechanically – find the right way

Locations:
Neutraubling (DE), Franklin (USA)

Course objective:
Learn how to solve problems quickly, prevent malfunctions and avoid downtimes: This compact seminar contains tested analysis routines for the most frequent problems on the Contiroll labeler. You will learn in a mechanical way directly on the training machine how they can be troubleshooting.

Contiroll HS (High Speed): Labelling Technology
<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
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<td>I 09</td>
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</tbody>
</table>

Immediately after commissioning:

- Krones Checkmat (DART) – aligning system
- Linatronic M2 series – basic course
- Modular Linatronic 735 – basic course
- Checkmat 731 and 752
- Checkmat 707

18 months after commissioning or later:

- Linatronic M2 series – advanced course
- Modular Linatronic 735 – advanced course
Inspection Technology

Linatronic M2 series – basic course
Course: I 01; duration: 4 days

Target group:
Electrical maintenance staff

Suitable for the following machine types: Linatronic 735 M2, 712 M2

Requirements:
Basic knowledge of electrical equipment

Topics:
- Construction and function
- Overview of the electrical and electronic components
- Hardware plan
- Operation
- Format change
- Inspection units
- Troubleshooting
- Data backup
- Creating new users

Locations:
Neutraubling (DE), Taicang (CN)

Course objective:
On this course, you will learn how to save unnecessary material costs for bulk glass. With the right machine settings, you reduce the rejection rate, and, at the same time, keep a steady high quality standard. Practical exercises on the Linatronic training machine provide the opportunity to implement the newly acquired knowledge into practice.

Linatronic M2 series – advanced course
Course: I 02; duration: 4 days

Target group:
Mechanical maintenance staff, electrical maintenance staff

Suitable for the following machine types: Linatronic 735 M2, 712 M2

Requirements:
Participation in the "Linatronic M2 Basic Course" (I 01) or similar knowledge

Topics:
- Brief revision of the basics of inspection technology
- Creating and parametrising a new container type
- Explanation and parametrisation of the test container program
- Setting the shift register
- Fault diagnostics using the oscilloscope
- Replacing faulty components

Locations:
Neutraubling (DE), Taicang (CN)

Course objective:
This course enables you to independently cope with malfunctions and other tasks on the machine. You will learn how to increase inspection accuracy. Setting new container types and efficient troubleshooting will be exercised directly on the training machine.
Checkmat 731 and 752
Course: I 05; duration: 3 days

Target group:
Electrical maintenance staff

Suitable for the following machine types:
Checkmat 731 and 752, Sekamat, Cantronic, ModulCheck

Requirements:
Basic knowledge of electrical equipment

Topics:
- Construction and method of operation of the inspection unit
- Overview of the electrical components
- Operation
- Method of operation and parametrisation of the inspection units
- Setting up a new container type
- Identifying and eliminating malfunctions
- Data backup

Locations:
Franklin (US), Taicang (CN), Bangkok (TH), São Paulo (BR)

Course objective:
Using a Checkmat, you will ensure the quality of your products. On this course you will learn how to optimally work with the inspector and how to prevent rejection of faultless products. In order to simulate a realistic learning environment, a training machine will be provided at any time during the course.

Inspection Technology
Checkmat 707
Course: I 06; duration: 1 day

Target group:
Electrical maintenance staff

Suitable for the following machine types:
Checkmat 707 with LCT3-controller

Requirements:
Basic knowledge of electrical equipment

Topics:
- Mechanical construction of the inspection unit
- Adjustment, operation, maintenance and cleaning
- Introduction to machine documentation
- Parametrisation of inspection units
- Identifying and eliminating malfunctions
- Data backup

Locations:
Neutraubling (DE), Franklin (US), Bangkok (TH)

Course objective:
Using a Checkmat, you will ensure the quality of your products. On this course you will learn how to optimally work with the inspector and how to prevent rejection of faultless products. In order to simulate a realistic learning environment, a training machine will be provided at any time during the course.

Inspection Technology

Modular Linatronic 735 – basic course
Course: I 08; duration: 5 days

Target group:
Electrical maintenance staff

Suitable for the following machine types:
Linatronic 735

Requirements:
Basic knowledge of electrical equipment

Topics:
- Construction and function
- Overview of the electrical and electronic components
- Hardware plan
- Bus systems
- Operation
- Format change
- Inspection units
- Explanation and parametrisation of the test container program
- Troubleshooting
- Data backup

Locations:
Neutraubling (DE), São Paulo (BR)

Course objective:
This course will familiarise you with the components of the Linatronic 735. You will be able to perform all important operations on your own. Moreover, practical exercises will help you to quickly gain confidence and expertise in handling the machine.
Modular Linatronic 735 – advanced course
Course: I 09; duration: 5 days
Target group: Electrical maintenance staff
Suitable for the following machine types: Linatronic 735
Requirements: Participation in the “Linatronic 735 – Basic Course” (I 08) or similar knowledge
Topics:
- Brief revision of the basics of inspection technology
- Creating and parametrising a new container type
- Setting the shift register
- Fault diagnostics using the oscilloscope
- Replacing faulty components
- Calibrating servo drives
Locations:
- Neutraubling (DE), São Paulo (BR)
Course objective:
This course provides the opportunity to enhance your knowledge acquired in the basic course. You will learn how to set up new container types and how to efficiently use the diagnostics functions. Practical exercises on a training machine will ensure that you will be able to implement what you have learned immediately in your own factory.

KRONES Checkmat (DART) – aligning system
Course: I 10; duration: 3 days
Target group: Electrical maintenance staff
Suitable for the following machine types: KRONES labellers with rotary plate control
Requirements: Basic knowledge of electrical equipment
Topics:
- Construction and function
- Components of the electrical equipment
- Bus systems
- Operation
- Inspections
- Xenon type management
- Troubleshooting
- Data backup
- Image processing tools
Location:
- Franklin (US), on site
Course objective:
This course familiarises you with the component of the KRONES aligning system. After this hands-on training course, you will be able to perform all the important processes on your own when creating the product types and when parametrising the alignment unit.
Enable parameters

Basic
Immediately after commissioning

Basic knowledge of operation, cleaning and maintenance

Advanced
6 – 8 months after commissioning

Understanding calculation curves, virtual master and sensors in detail; Top 10 troubleshooting

Expert Level 1
1 year after commissioning

Become faster through trouble shooting with specific analysis – reduced downtimes!

Expert Level 2
1 – 2 years after commissioning

Parameterisation and overhauling, individually and efficiently on an expert level

“Basic, Advanced and Expert Level 1” are obligatory modules and cannot be skipped to reach Expert Level 2.

Advanced, Expert Level 1 and Expert Level 2 training are only available via KRONES AG, Rosenheim plant and are completed with certificates
Packing and Palletising Technology

### Basic
- **Operation**
  - **Duration and Content**
  - **Machine-specific**
  - **Course: D 01**

- **Maintenance**
  - **Duration and Content**
  - **Machine-specific**
  - **Course: D 03**

- **Electrical components**
  - **Duration and Content**
  - **Machine-specific**
  - **Course: D 04**

### Advanced
- **Operation**
  - **Variopac**
    - **Technical and Top-10 Troubleshooting**
    - **Course: D 11**

- **Robobox/Modulpal**
  - **Technology and Top-10 Troubleshooting**
  - **Course: D 12**

- **Varioline**
  - **Technical and Top-10 Troubleshooting**
  - **Course: D 13**

- **Maschinenspezifisch**
  - **Technical and Top-10 Troubleshooting**
  - **Course: D 14**

### Assessment
- **Assessments of KRONES verify your knowledge and ensure that you are always up-to-date.**
- **We ascertain your training needs and plan corresponding training for you.**

### Expert Level 1
- **Dry part software**
  - **Course: D 21**

- **Electrical Engineering for Mechanics**
  - **Course: D 22**

- **Mechanical and Electrical Engineering for Operators**
  - **Course: D 23**

- **Parameter Training – Variopac**
  - **Course: D 31**

- **Parameter Training – Varioline**
  - **Course: D 32**

- **Parameter Training – Modulpal/Robobox**
  - **Course: D 33**

- **Overhaul – Variopac**
  - **Course: D 35**

- **Overhaul – Varioline**
  - **Course: D 34**

- **Overhaul – Modulpal/Robobox**
  - **Course: D 36**

### Expert Level 2
- **Enable parameters**
  - **Enabling of parameters is processed customer-specific after request and completion of all training levels.**

### Management
- **Variopac Pro – film analysis, packaging consulting**
  - **Course: D 41**

- **Dry part technology for decision-makers**
  - **Course: D 42**

- **For the individual training concept in four steps**
  - **Course: D 43**

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Basic and advanced courses are individual and are available on request (see Pages 60 and 61).
Packing and Palletising Technology

Basic

Target group:
Operators, mechanics, electricians
Suitable for the following machine types:
All machines in packaging and palletising technology
Requirements:
None
Topics:
- Method of operation of the machine
- Manual and machine functions
- Overview of the modules
- Reading of connection diagrams
- Use of symbols
- Safety, PLC, Profibus, Powerlink
- X2X link

Supplement for Mechanics:
- Lubrication systems
- Different lubricants
- Overview of the modules
- Mechanical basics
- Record spare parts, eCat
- Determining the part number
- Pneumatic components
- Maintenance
- Calibrating the axes

Supplement for Electricians:
- Servo technology (basics)
- Diagnostics and troubleshooting
- Replacement of motors, encoders
- Calibrating the axes

Course objective:
Know
- Method of operation
- Machine modules
- Activities of the respective working area

Ability
- Machine operation
- Use required tools and aids
- Operate machine efficiently and fault-free

Duration: 2 – 3 days per machine model (machine-specific)

Advanced

Target group:
Operators, mechanics, electricians
Suitable for the following machine types:
All machines in packaging and palletising technology
Requirements:
None

Topics for operator:
- Repeating basic contents
- Lubrication systems
- Overview of the modules in detail
- Mechanical basics
- Pneumatic components
- Maintenance
- Process optimisation
- Specific troubleshooting
- Production support

Topics for mechanic:
- Repeating basic contents
- Composition of the assemblies
- Analyse CAD drawings
- Virtual master axes
- Collision monitoring
- Pneumatic components
- Maintenance schedules and tasks
- Calibrating all axes in detail
- Mechanical adjustments

Topics for electrician:
- Repeating basic contents
- Composition of the assemblies
- Administration tools
- Virtual master axes
- Collision monitoring
- Electrical components and their replacement

Course objective:
Know
- Machine modules in detail
- Composition of the assemblies

Ability
- Independently analysing and eliminating complex faults
- Reduction of downtimes

In addition to these topics, the specific contents for each machine are covered in the courses D11 – D14 (see Pages 62 – 65).
The following machine modules will be covered in detail (machine-specific):
- Variopac infeed conveyors
- Bottle separator
- Pusher chain and wrapping rods
- Wrapping chain and hotmelt glue units
- Carton modules, conveyor belts and chains
- Wrapping module
- Film module with control
- Cutting module
- Shrinking tunnel

Location: Rosenheim (DE), on site

Course objective: In these courses you will be provided with the know-how for recognising fault causes and avoiding downtimes. That's because you learn to evaluate calculation curves, virtual masters and all machine functions with the background knowledge of a technician. You will understand how specific changes affect the operation of the machine. For your daily work routine, this means: You cannot only effectively counteract problems when they occur, you can even pre-vent them from the outset.

Target group: Engineers, mechanics, electricians, operators
Suitable for the following machine models: Variopac
Requirements: Completed basic course

Course: D 11; duration: 3 days

Advanced

The following machine modules will be covered in detail (machine-specific):
- Palletiser infeed conveyors
- Gripper modules 1 and 2
- Grouping station
- Gripper head and louvre gripper
- Intermediate layer handling
- Pallet conveyor
- Lifting unit column

Location: Rosenheim (DE), on site

Course objective: In these courses you will be provided with the know-how for recognising fault causes and avoiding downtimes. That's because you learn to evaluate calculation curves, virtual masters and all machine functions with the background knowledge of a technician. You will understand how specific changes affect the operation of the machine. For your daily work routine, this means: You cannot only effectively counteract problems when they occur, you can even pre-vent them from the outset.

Target group: Engineers, mechanics, electricians, operators
Suitable for the following machine models: Robobox, Modulpal
Requirements: Completed basic course

Course: D 12; duration: 3 days

Advanced

The following machine modules will be covered in detail (machine-specific):
- Palletiser infeed conveyors
- Gripper modules 1 and 2
- Grouping station
- Gripper head and louvre gripper
- Intermediate layer handling
- Pallet conveyor
- Lifting unit column
Packing and Palletising Technology

Advanced

Varioline – Technology and Top-10-Troubleshooting
Course: D 13; duration: 3 days

Target group: Engineers, mechanics, electricians, operators
Suitable for the following machine models: Varioline
Requirements: Completed basic course

Course objective:
The following machine modules will be covered in detail (machine-specific):
- Varioline infeed conveyors
- Continuous infeed bar
- Pusher chain and hotmelt glue units
- Carton magazine
- Folding dies
- Gripper heads
- Cross-belt kinematics

Location:
Rosenheim (DE), on site

Advanced

Machine-Specific Technology and Top-10 Troubleshooting
Course: D 14; duration: 3 days

Target group: Engineers, mechanics, electricians, operators
Suitable for the following machine models: Machine-specific
Requirements: Completed basic course

Course objective:
Machine modules which are covered in detail (machine-specific):
- Depending on the machine model

Location:
Rosenheim (DE), on site
Packing and Palletising Technology

**Course Objective:**
How can faults be identified and eliminated quicker? How can down-times be prevented and data be fully backed up? This course will answer such questions and provide concrete solution strategies.

The training takes place in an excellently equipped PLC laboratory. This course teaches you the basics of programming the machine software and creates a general understanding of the method of operation of the PLC.

**Target Group:**
Engineers, electricians, automation engineers

**Suitable for the following software:**
S7, B&R, SEW, Zenon

**Requirements:**
Basic IT and PC technical knowledge

**Topics:**
- Introduction to the hardware configuration
- Addressing the hardware components
- KRONES machine software
- B&R systems
  - of the service engineers
  - B&R Automation Studio Diagnostics
-■ System Diagnostics Manager (SDM)
-■ Working with the diagnostics tools in theory and practice
-■ Diagnostic screens on the touch-screen
-■ PVI manager (B&R)
-■ Tactical approach to troubleshooting
  - Step-by-step instructions
  - Troubleshooting in the software
-■ Replacing components
  - Siemens monitoring
  - Localising and replacing defective components
-■ Network plan (Profibus, Ethernet, Powerlink, X2X Link)
-■ Zenon visualisation (Zenon-Manager, Zenon-Explorer and Zenon-Editor on the PC)
-■ Final examination

**Location:**
Rosenheim (DE), on site

**Course:**
Expert Level 1 Dry part software expert

- System Diagnostics Manager (SDM)
- Working with the diagnostics tools in theory and practice
- Diagnostic screens on the touch-screen
- PVI manager (B&R)
- Tactical approach to troubleshooting
  - Step-by-step instructions
  - Troubleshooting in the software
- Replacing components
  - Siemens monitoring
  - Localising and replacing defective components
- Network plan (Profibus, Ethernet, Powerlink, X2X Link)
- Zenon visualisation (Zenon-Manager, Zenon-Explorer and Zenon-Editor on the PC)
- Final examination

**Location:**
Rosenheim (DE), on site

**Course:**
Expert Level 2 Dry part software expert

- System Diagnostics Manager (SDM)
- Working with the diagnostics tools in theory and practice
- Diagnostic screens on the touch-screen
- PVI manager (B&R)
- Tactical approach to troubleshooting
  - Step-by-step instructions
  - Troubleshooting in the software
- Replacing components
  - Siemens monitoring
  - Localising and replacing defective components
- Network plan (Profibus, Ethernet, Powerlink, X2X Link)
- Zenon visualisation (Zenon-Manager, Zenon-Explorer and Zenon-Editor on the PC)
- Final examination

**Location:**
Rosenheim (DE), on site
Expert Level 1

**Target group:** Mechanical engineers

**Requirements:** Basic technical knowledge

**Topics:**
- Tools for troubleshooting in detail
- Machine-specific troubleshooting at a high level
- Overview of the most important parameters
- Function of motors, encoders
- Acopos/Danfoss frequency inverter
- Servo technology basics
- Diagnostics and troubleshooting
- Calibrating the axes

**Course objective:**
When overhauling KRONES filling and packaging systems, you will come into contact with mechanical and electrical components almost every day. To obtain a better understanding of this technology and to provide you with tools for a quicker fault analysis, we have developed this training course for maintenance teams.

**Topics:**
- Tools for troubleshooting in detail
- Machine-specific troubleshooting at a high level
- Overview of the most important parameters
- Function of motors, encoders
- Acopos/Danfoss frequency inverter
- Servo technology basics
- Diagnostics and troubleshooting
- Calibrating the axes
- Reference points of the machine
- Connection diagrams
- General information on terminal diagrams
- Symbols
- Using and applying symbols on a machine
- Safety systems
- Safety of the PLC
- Network system
- Profinet, Powerlink, Ethernet, X2X Link
- Replacement of mechanical parts (machine-specific)

**Location:** Rosenheim (DE), on site

**Course: D 22; duration: 4 days**

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**Expert Level 1**

**Target group:** Operators with maintenance tasks

**Requirements:** None

**Topics:**
- Tools for troubleshooting in detail
- Machine-specific troubleshooting at a high level
- Overview of the most important parameters
- Function of motors, encoders
- Acopos/Danfoss frequency inverter
- Servo technology basics
- Diagnostics and troubleshooting
- Reference points of the machine
- Connection diagrams
- General information on terminal diagrams
- Safety systems
- Safety of the PLC
- Network system
- Replacement of mechanical components, basics of mechanical components and details of components used (machine-specific)

**Location:** Rosenheim (DE), on site

**Course: D 23; duration: 2 days**

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**Mechanical and Electrical Engineering for Operators**

**Target group:** Operators with maintenance tasks

**Requirements:** None

**Topics:**
- Tools for troubleshooting in detail
- Machine-specific troubleshooting at a high level
- Overview of the most important parameters
- Function of motors, encoders
- Acopos/Danfoss frequency inverter
- Servo technology basics
- Diagnostics and troubleshooting
- Reference points of the machine
- Connection diagrams
- General information on terminal diagrams
- Safety systems
- Safety of the PLC
- Network system
- Replacement of mechanical components, basics of mechanical components and details of components used (machine-specific)

**Location:** Rosenheim (DE), on site

**Course: D 25; duration: 2 days**

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**Packing and Palletising Technology**
Expert Level 2

**Parameter Training — Varioline**

**Course objective:** On the training course “Parameter Settings: Expert Level 2” we go into the details of your machine parameters. You will learn how to correctly adjust the machine so that your production will run without interruptions.

**Target group:** Electrical engineers

**Suitable for the following machine models:** Varioline

**Requirements:** None

**Topics:**
- Machine parameters in detail, admin offset, type parameters in detail
- Correctly adjusting the calibration functions
- Understanding product parameters, detailed understanding of the virtual master axis
- Adjustment and correction of the X, Y and Z-axis

**Location:** Rosenheim (DE), on site

---

Expert Level 2

**Parameter Training — Variopac**

**Course objective:** On the training course “Parameter Settings: Expert Level 2” we go into the details of your machine parameters. You will learn how to correctly adjust the machine so that your production will run without interruptions.

**Target group:** Electrical engineers

**Suitable for the following machine models:** Variopac

**Requirements:** None

**Topics:**
- Machine parameters in detail, admin offset, type parameters in detail
- Correctly adjusting the calibration functions
- Understanding product parameters, detailed understanding of the virtual master axis
- Adjustment and correction of the X, Y and Z-axis
- Creating a customer type admin offset
- Fine adjustment of bottle/pack infeed, correction of the monitoring cams
- Adjusting handrails, guides, cutting stations, wrapping stations, glue settings
- Parameters of the tensioning device, film settings, settings of the blanks, infeed separator admin offset

**Location:** Rosenheim (DE), on site
Packing and Palletising Technology

Expert Level 2

Parameter Training — Robobox/Modulpal
Course: D 33; duration: 3 days

- Creating a customer type admin offset
- Fine adjustment of bottle or pack infeed, correction of the monitoring cams
- Correct adjustment of handrails, guides, gripper head, centring unit, pallet conveyor
- Release point for linear movement, correction of the pallet and pack height

Location: Rosenheim (DE), on site

Course objective:
On the training course “Parameter Settings: Expert Level 2” we go into the details of your machine parameters. You will learn how to correctly adjust the machine so that your production will run without interruptions.

Target group:
Electrical engineers

Suitable for the following machine models: Robobox, Modulpal

Requirements: None

Topics:
- Machine parameters in detail, admin offset, type parameters in detail
- Correctly adjusting the calibration functions
- Understanding product parameters, detailed understanding of the virtual master axis
- Adjustment and correction of the X, Y and Z-axis

Expert Level 2

Overhaul — Varioline
Course: D 34; duration: 2 days

- Recalibration of all servo axes
- P.E. sensor offset positions and their definitions
- Overhaul of all modules
- Replacement of parts and mechanical settings on the blank magazine
- Change of the chain on the transport unit and magazine
- Overhauling all suction cups and the vacuum pump

Location: Rosenheim (DE)

Course objective: Gear and axis system precision can be achieved only with comprehensive machine know-how. Tailored training at the KRONES Academy Rosenheim provides precisely this knowledge. The topics covered include structural design, function, servicing, and operation of the various components, with a special focus on professional assembly and dismantling.

Target group:
Mechanical engineers

Requirements: Basic technical knowledge

Topics:
- Correctly setting the calibration positions
- Settings and corrections of the X, Y and Z-axes (cross-belt kinematics)
- Overhauling the linear units X, Y and Z-axes (cross-belt kinematics)
- Overhauling the linear units, folding station, container infed stopper, and robot magazine
- Overhauling the gripper head (tools)
**Packing and Palletising Technology**

**Expert Level 2**

**Target group:** Mechanical engineers  
**Requirements:** Basic technical knowledge

**Topics:**  
- Overhauling the film cutting station  
- Replacing belts on the cutting station  
- Replacing and adjusting the knife  
- Calibrating the cutting station and tensioning device  
- Overhauling a cycloidal separator if used  
- Replacement of parts and mechanical settings on the blank magazine

**Course objective:** Gear and axis system precision can be achieved only with comprehensive machine know-how. Tailored training at the KRONES Academy Rosenheim provides precisely this knowledge. The topics covered include structural design, function, servicing, and operation of the various components, with a special focus on professional assembly and dismantling.

**Location:** Rosenheim (DE), on site

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**Overhaul — Variopac**  
**Course:** D 35; duration: 4 days

- Replacing the chain on the wrapping station  
- Overhauling the container separator  
- Overhauling the complete wrapping station  
- Tensioning all belts and chains  
- Overhaul of the vacuum pumps  
- Overhauling the complete shrinking tunnel

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**Overhaul — Robobox/Modulpal**  
**Course:** D 36; duration: 3 days

- Overhauling of the pallet handling module and all bearings  
- Recalibrating the Robobox modules and the palletiser  
- P.E. sensor offset positions and their definition  
- Tensioning all conveyor and belts

**Location:** Rosenheim (DE)

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**Expert Level 2**

**Target group:** Mechanical engineers  
**Requirements:** Basic technical knowledge

**Topics:**  
- Overhauling of X, Y and Z-linear units  
- Replacement of belts of modules 1 and 2  
- Replacing and adjusting the Modulpal bearings  
- Adjusting the motor units on the infeed belts (acceleration, stop and separating belt)  
- Overhauling of gripper head  
- Replacement of the conveyors of the gripper head and the horizontal pusher

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**Course objective:** Gear and axis system precision can be achieved only with comprehensive machine know-how. Tailored training at the KRONES Academy Rosenheim provides precisely this knowledge. The topics covered include structural design, function, servicing, and operation of the various components, with a special focus on professional assembly and dismantling.
Management

Target group: Mechanical engineers, line managers, maintenance managers
Requirements: Basic technical knowledge

Topics:
- Optimising the film width and thickness for the visual appearance of the shrink-wrapped pack
- Optimising the film material and the film properties for the visual appearance of the shrink-wrapped pack
- Optimising the processing technique in collaboration with the training department, Service and LCS

Quality assurance
- Integrating the film quality in the quality assurance process
- Handling different film properties and manufacturers

Costs of materials
- Reducing the film thickness and the lateral film projection

Location: Rosenheim (DE), on site

Film analysis and packaging advice
Course: D 41; duration: 3 days
Course objective: Energy savings of up to twenty percent: a lower processing temperature makes it possible. In this course you learn how to optimise the material and properties of your film.

Management

Dry part technology for decision-makers
Course: D 42; duration: 2 days
Target group: Line managers, shift supervisors, plant managers, quality managers, production managers
Suitable for the following machine models: All dry part machines
Requirements: None

Topics:
- Overview of the individual machines of the packing and palletising machines
- Significance of the consumables
- Practical training and production visits
- Avoiding malfunctions
- Limits of the process
- Future trends

Course objective: Gaining an in-depth insight into the most important machines of the packaging technology in no time – this is the objective courses for the management personnel. Become familiarised with the critical points of your line, the mastering of which ensures efficiency on a sustained basis.

Location: Rosenheim (DE)
For the individual training concept in four steps
Course: D 43; duration: 3 – 4 days (can be divided into individual blocks day by day)

Management

Target group:
Line managers, shift supervisors, plant managers, quality managers, production managers, training managers

Determination of needs
In the first step we determine the general need for training in personal meetings and smaller assessments. What are the causes of problems and what training measures can be used to lastingly eliminate them? We find answers to these questions together with the potential participants, their management personnel and the people they cooperate with in everyday life. What the real causes of problems are and what training needs result for whom from them can usually be determined in meetings with the potential participants, their management personnel and the people they cooperate with.

Target group analysis
We analyse the current level of knowledge and the experience already acquired so that we can adjust the training exactly to the participating people and their needs.

Definition of learning objectives
Following the analysis we define the objective and the time schedule of your training concept.

Concept creation
Then the development of the concept begins. This also includes repeat checking of which learning contents are essential for achieving the higher-level objectives and which can represent an option.

Location:
On site
KRONES Competency Audit

How does your operator team cope with the complex line technology? Is training required, and if so, on what issues? Our “Competency Audit” provides objective answers to these questions. We test during running production how safely and professionally the line is started, operated, shutdown and converted.

The Competency Audit combines theoretical questions with practical exercises, and takes two to four hours for each participant.

We recommend conducting this assessment about six months after a training or in cases in which the performance is not what you expect and you need a status and development plan.

We will be happy to help you with all questions concerning scheduling, organisation and performance of the Competency Audit.

Please contact us.

Individual Documentation

SOP (Standard Operating Procedures)

Easy to understand step-by-step instructions

The KRONES Academy develops individual SOPs for your company. For this purpose, our experienced technical writers develop work instructions in cooperation with your production staff. These hands-on instructions are easy to understand. Rich illustration and terse text clearly depict the step-by-step instructions.

We will be happy to help you with all questions concerning scheduling, organisation and creation of your individual documentation.

Please contact us.
Very often, mechanical sequences and interrelationships can be identified and understood just through intent observation. In the world of electrical systems, sound knowledge which has been acquired on training courses is indispensable. Targeted training on all electrical components, wiring diagram systems, industrial PCs and drives as well as software and touch-screen management convey confidence for your daily production routine using the KRONES line. No matter whether a mechanic wants to familiarise himself with the basics of electrical engineering, or a maintenance manager wants to increase the quality and efficiency of your line by means of targeted electrical engineering training – on the following pages you will find the adequate training package.
Electrical Technology

KRONES Electrical Technology – for Mechanical Maintenance Staff
Course: E 01; duration: 2 days

Target group:
Maintenance personnel

Suitable for the following machine types:
all KRONES fillers and labellers

Requirements:
Basic knowledge of the mechanical components of KRONES machines

Topics:
- KRONES connection diagram system
- AS Interface and Safety
- KRONES standard encoder (replacement and setting)
- Diagnostics and replacing components
- Data storage and recovery after malfunctions
- Visualisation system: Type management, user administration, basic functions

Locations:
Neutraubling (DE), Franklin (US), São Paulo (BR), Lagos (NGA)

Course objective:
This course will provide you with the opportunity to acquire basic knowledge about the electrical engineering used at KRONES. This involves reading and understanding wiring diagrams, identifying electrical components and navigating on the touch-screen. On conclusion of the seminar, you will be able to eliminate malfunctions on your own and thus to reduce the downtimes.

KRONES Electrical Technology – for Mechanical Maintenance Staff
Course: E 02; duration: 3 days

Target Group:
Maintenance personnel

Suitable for the following machine types:
all Contiform machines

Requirements:
Basic knowledge of stretch-blow moulders

Topics:
- KRONES wiring diagram system
- Overview of the bus structure
- AS-Interface and Safety
- Diagnostics and replacement of components, data backup
- Powerlink
- Profinet/Profibus
- Heating controller HC-Net
- Troubleshooting
- Acopos
- Danfoss frequency inverter
- Servo and linear motors

Locations:
Neutraubling (DE), Franklin (US), Taicang (CN)

Course objective:
How can malfunctions on the Contiform be quickly eliminated? This course will tell you. You will be provided with valuable knowledge on the connection diagram and the various components of the machine. To enable you to react quickly and systematically in your daily production routine, various malfunctions will be simulated and eliminated during the hands-on section.
Filler – Electrical System (LCT3/KFS3 controller)
Course: E 03; duration: 3 days

Target group: Electrical maintenance staff
Suitable for the following machine types: Filler with LCT3 control
Requirements: none

Topics:
- System overview and communication channels
- KRONES wiring diagram system
- AS interface and Profinet basics
- Danfoss frequency inverter FC300/VLT5000, MCT10 software
- Visualisation: Type management, user administration, basic functions, parameters
- KRONES standard encoder and sensors
- Diagnostics and replacement of components
- Filling valve control KFS3, LCT3 operation, hardware structure, filing program, parameters
- Operation and parameterisation on the LCT 3
- Filling valve and sensor diagnostics
- Parameter backup (software is included in the KRONES scope of supply)
- Diagnostics and troubleshooting

Locations:
- Neutraubling (DE), Franklin (US)

Course objective: To ensure effective diagnostics and troubleshooting, a knowledge of the sequence within the machine is essential. To ensure a reliable functionality here, you will learn in the course how to understand critical electrical parts, and how to diagnose, repair and replace them.

Filler – Electrical System (FVC controller)
Course: E 04; duration: 3 days

Target group: Electrical maintenance staff
Suitable for the following machine types: Filler with LCT3 control
Requirements: none

Topics:
- System overview
- KRONES wiring diagram system
- AS-Interface and Safety Profibus/Profinet
- Visualisation: Type management, user administration, basic functions, parameters
- Danfoss frequency inverter FC300/MCT10 software
- KRONES standard encoder, sequence control and sensors
- Diagnostics, replacement of components and fill level and pressure control
- Filling valve control FVC, Hardware structure, filling program, parameters
- Network structure: Ethernet, Powerlink, e-Link
- Network diagnostics
- Filling valve diagnostics
- Replacing control elements
- Diagnostics and troubleshooting

Locations:
- Neutraubling (DE), São Paulo (BR), Taicang (CN)

Course objective: Understanding the filling and control process is the basis for effective searching and the elimination of faults. You will learn how to use the wide range of diagnostic options, how to eliminate malfunctions, do repair work, set the machine and resume production after failures. In order to verify your training success at any time, you will always have the opportunity to interactively test your newly acquired knowledge.
Cold-glue labeller – Electrical Components
Course: E 05; duration: 2.5 days

Target group: Electrical maintenance staff
Suitable for the following machine types: Vinetta, Universella, Bonamatic, Starmatic, Solomatic, Topmatic, Multimatic
Requirements: none
Topics:
- KRONES wiring diagram system
- Visualisation: Type management, user administration, basic functions, parameters
- KRONES standard encoder and sensors
- Diagnostics and replacement of components

Location: Franklin (US)

Course objective:
This course provides you with a comprehensive overview of the electronic system and the functions of the labeller. What you have learned enables you to perform quick diagnostics and to professionally eliminate malfunctions.

Contiroll and Contiroll HS (B&R controller) – Electrical System
Course: E 06; duration: 3.5 days

Target group: Electrical maintenance staff
Suitable for the following machine types: Contiroll Classic, Contiroll HS, Contiroll Modul, Contiroll HS Modul (B&R controller)
Requirements: none
Topics:
- KRONES wiring diagram system
- Visualisation: Type management, user administration, basic functions, parameters
- Special encoder, replacement and setting
- System overview, network and communication
- Machine functions, e.g. broken bottle detection system, height adjustment, infeed

Locations:
- Neutraubling (DE), Franklin (US), Bangkok (TH)

Course objective:
In this seminar you will deal with the label process and the control options as well as the fine adjustment of the servo drives. You will receive useful tips on how to adjust and optimise label parameters. Exercises on the training machine will provide you with the opportunity to enhance your newly acquired knowledge on settings.
Electrical Technology

Controll 745 with LCT3 Controller – Electrical System
Course: E 07; duration: 3 days

Target group: Electrical maintenance staff
Suitable for the following machine types: Controll 745 with LCT3 controller
Requirements: Basic knowledge of the machine mechanics is beneficial.
Topics:
- Function and setting of all sensors
- Replacing electrical components
- Parametrisation on the LCT3
- Practical exercises on the training machine
- Creating and setting a new label type
- Diagnostics, replacement of components and data backup (LCT3)

Locations: Neutraubling (DE), Franklin (US), Bangkok (TH)

Course objective: This course conveys the necessary knowledge for professionally repairing and fine-adjusting the machine. A higher product quality and shorter downtimes make this training a worthwhile investment.

Module Labeller Generation 2 – Electrical System
Course: E 09; duration: 4 days

Target group: Electrical maintenance staff
Suitable for the following machine types: Module labellers from year of manufacture 2009 onward
Requirements: Basic knowledge of mechanics
Topics:
- System overview, communication and network
- KRONES wiring diagram
- Basics of the bus systems, AS-i Safety at work, Profibus
- Danfoss frequency inverter
- FC300/MCT10 software
- Type management, user administration and data backup
- Replacing and setting the 2-in-1 encoder
- Diagnostics and replacement of components, data backup
- RPC rotary plate control with servo motors: Function, parametrisation, diagnostics, motor replacement
- Labelling stations (cold glue, Autocol, APS 3, Canmodul)
- Function, diagnostics and troubleshooting
- Data backup

Locations: Neutraubling (DE), Franklin (US)

Course objective: On this course, you will get a comprehensive introduction into parametrisation on the touch-screen. This knowledge will enable you to systematically identify and eliminate faults. In order to verify your training success at any time, you repeatedly will have the opportunity to interactively test your newly acquired knowledge.

Controll 745 with LCT3 Controller – Electrical System
Course: E 07; duration: 3 days

Suitable for the following machine types: Controll 745 with LCT3 controller
Requirements: Basic knowledge of the machine mechanics is beneficial.
Topics:
- KRONES wiring diagram
- Profibus basics
- Danfoss FC300/V1S5000, MCT10 software
- Touch-screen with Zenon;
- data backup
- Replacing and setting the encoder

Locations: Neutraubling (DE), Franklin (US), Bangkok (TH)

Course objective: This course conveys the necessary knowledge for professionally repairing and fine-adjusting the machine. A higher product quality and shorter downtimes make this training a worthwhile investment.

Module Labeller Generation 2 – Electrical System
Course: E 09; duration: 4 days

Suitable for the following machine types: Module labellers from year of manufacture 2009 onward
Requirements: Basic knowledge of mechanics
Topics:
- System overview, communication and network
- KRONES wiring diagram
- Basics of the bus systems, AS-i Safety at work, Profibus
- Danfoss frequency inverter
- FC300/MCT10 software
- Type management, user administration and data backup
- Replacing and setting the 2-in-1 encoder
- Diagnostics and replacement of components, data backup
- RPC rotary plate control with servo motors: Function, parametrisation, diagnostics, motor replacement
- Labelling stations (cold glue, Autocol, APS 3, Canmodul)
- Function, diagnostics and troubleshooting
- Data backup

Locations: Neutraubling (DE), Franklin (US)

Course objective: On this course, you will get a comprehensive introduction into parametrisation on the touch-screen. This knowledge will enable you to systematically identify and eliminate faults. In order to verify your training success at any time, you repeatedly will have the opportunity to interactively test your newly acquired knowledge.
Electrical Technology

Basics of the KRONES Electrical System
Course: E 12; duration: 10 days

Target group: Electrical maintenance staff, line managers
Suitable for the following machine types: KRONES machines
Requirements: We recommend basic knowledge of Siemens S7

Topics:
- Subtleties of the KRONES electrical wiring diagram system
- Basics of the AS interface bus system
- Basics of the Profibus system
- Danfoss frequency inverter FC300/software MCT10 (uploading/downloading parameters)
- Zennon 5.5/6.2: Ghost/user administration/data backup/type management
- KRONES standard encoder
- KFS/LCT/KFS hardware and filling programs
- Siemens PLC Step 7 software and hardware configuration/uploading and downloading programs
- Fault diagnostics and replacement of components
- Data backup and recovery after malfunctions

Locations:
Johannesburg (ZA), Taicang (CN)

Course objective:
On this course you will learn how to quickly eliminate possible malfunctions, how to backup data, identify faults and replace electrical components. In addition, you will be introduced into the user administration system and you will get tips for correctly using the touch-screen.

KRONES Electrical Technology – System Engineering
Course: E 14; duration: 3 days

Target group: Electrical engineers
Suitable for the following machine types: all KRONES machines equipped with adequate software
Requirements: Basic technical knowledge; basic IT and PC knowledge
Recommendation: KRONES Automation Notebook

Topics:
- The basics of networking technology
- Electrical components of the machine
- Danfoss frequency inverter VLT5000/FC300 (MCT10 setup software)
- Reading Racos wiring diagram
- Absolute value encoder and shift register
- Network and control technology
- B&R hardware, backup
- Profibus, Profinet
- AS-Interface Safety, HMI Zennon 6.22/710 visualization

Locations:
Neutraubling (DE), Taicang (CN), Franklin (US), Lagos (NGA)

Course objective:
This course will provide you with the opportunity to expand your existing professional knowledge and learn about KRONES system technology. You will acquire comprehensive understanding of network and control technology. With this newly acquired knowledge, you will have no trouble in operating your line efficiently and ensuring clear communication with the machine.
Electrical System Training in the Laboratory
Course: E 15; duration: 4 days

Target group: Electrical maintenance staff
Suitable for the following machine types: all KRONES machines
Requirements: none
Topics:
- Zenon touch-screen
- Type/recipe structure
- User administration
- Zenon Explorer
- B&R automation
- Hardware overview
- Acopos drive diagnostics
- Runtime Utility Center Software, K-Dot Utility Software
- Data backup
- Parameter protection
- KRONES image back-up and restoration utility

Location: Franklin (US)

Course objective:
This course will provide you with a complete overview of the electrical engineering which is used in the KRONES equipment. If required, we will bespoke the contents to suit your requirements or your machines.

AS-i Bus Safety
Course: E 16; duration: 0.5 days

Target group: Electrical engineers
Suitable for the following machine types: all KRONES machines with Siemens S7
Requirements: Basic knowledge of electrical components
Note: This course is a supplement to the course “Electrical System Training in the Laboratory (E 15).”

Topics:
- AS-i-Safety operational sequence
- Safe handling of the SIM card and configuration on the SIM card
- Safe component replacement
- Fault simulation and diagnostics

Locations: Franklin (US), Lagos (NGA)

Course objective:
This training course is a supplement to the course “Electrical System Training in the Laboratory (E 15)” and it will introduce you to the AS-i bus interface.
Electrical Technology

Mechatronics Technology – targeted diagnostics
Course: E 17; duration: 2,5 days

Target group: Maintenance personnel
Suitable for the following machine types: all KRONES machines

Requirements:
Basic knowledge of the operation of KRONES machines and of mechanical maintenance

Topics:
- General machine safety practices
- Zenon 6.20/6.22 HMI tools
- Basics of electrical components
- HMI diagnostics MMA
- Basics of pneumatic components
- Basics of the KRONES encoder
- Data backup
- Troubleshooting/workshop
- Assessment
- Review and discussion of topics

Location:
Franklin (US)

Course objective:
This seminar provides you with an overview of the electrical system which is used in most KRONES machines. You will learn how to get the machine ready for production again quickly in the event of a malfunction. The course focuses particularly on the topics data security, effective malfunction diagnostics and replacement of faulty electrical components.

Servo drive technicians for Electrical Systems
Course: E 18; duration: 2 days

Target group: Electrical maintenance staff

Requirements: None

Topics:
- Safety procedures
- Control, touch-screen, nominal and actual values
- Communication between basic and control machine, frequency inverter and operating material
- Principles of the electronic system
- Definitions of terms
- Structure of the menu/menu selection
- Display values
- Machine product parameters
- Diagnostic function on the operator panel
- Machine messages and diagnostics
- Malfunctions
- Troubleshooting procedures
- Setting the components – fine adjustment after troubleshooting
- Lubrication and maintenance
- Control Components for training on electrical system
- Symbol diagram of the KRONES function group

Location:
Franklin (US)

Course objective:
How can the overheating of gears and servodrives be avoided? By synchronising infeed and discharge starwheels. This course will provide you with the required knowledge as well as the practical skills.
Nothing will happen in your production as if by magic. You rather need precise knowledge about automation technology, the option to quickly intervene into the software, and suitable tools for a safe programming of the procedures.

**KRONES** offers the ideal overall package for you with its Automation Concept. In cooperation with you, we will develop your individual overall concept for all tasks of Automation Technology tailored perfectly to your needs.

Your success is based on three elements:
- Automation Engineer
- Automation Equipment
- Automation Notebook

Regardless if racks, machine simulation units, Notebooks or training offers, on the following pages, we will inform you in detail about all services of the KRONES Automation Concept.

**Contact:**
Markus Wilhelm
Phone: +49 9401 70-4707
Fax: +49 9401 70 91-4707
E-mail: Markus.Wilhelm@krones.com
Target group:
Engineers, technicians, mechatronics technicians, electricians, line managers

Suitable for the following software:
Step 7 V5.5, Zenon 6.22/7.10, Runtime Utility Centre (B&R)

Requirements:
Basic technical knowledge, basic PC knowledge

Recommendation:
Automation notebook or KRONES Automation Field PG

Topics:
- System relationships:
  - General overview of the control system and consideration of the individual components
  - Insight into data communications within the machine/system
  - Control technology maintenance:
    - Backing up of the system-relevant data of the entire system (CPU subcontroller, HMI, etc.)
    - Replacement of components
    - Preventive maintenance (e.g. imaging)
  - Troubleshooting:
    - Specific troubleshooting of the general HMI fault message for PLC diagnostics
    - Bus and network diagnostics (AS-i, Profinet, Profibus, Ethernet, etc.)
    - Touch-screen diagnostics options
    - PLC diagnostics with/without programming unit

Course objective:
Avoiding downtimes, quickly diagnosing faults and backing up data completely are the basis for machine maintenance. In this course you will learn about the interplay of all control components, providing you with a better understanding of the system controller. Especially for new KRONES systems, the course offers a quick introduction, and with it a smooth transition from commissioning to production.

Locations:
Neutraubling (DE), Franklin (US), Johannesburg (ZA), Bangkok (TH), Nairobi (KE)

KRONES machine control – understanding and using relationships (Simatic S7-300)
Course: A 01; duration: 3 days
KRONES S7-300 Training

Course: A 08; duration: 4 days

Target group:
Electrical maintenance staff, automation engineers

Suitable for the following software:
Siemens Step 7, V5.5

Requirements:
Basic technical knowledge; basic IT and PC knowledge

Recommendation:
KRONES Automation Notebook

Topics:
- Network technology (Ethernet, DP/DP coupler)
- Accumulator/index function
- Communication with HMI
- Data backup/diagnostics
- Indirect addressing, pointer and address register

Locations:
Neutraubling (DE), Franklin (US), Johannesburg (ZA), Bangkok (TH)

Course objective:
You want to delve into SIMATIC S7-300? This course is the ideal opportunity: You will learn programming from scratch and you will be familiarised with the advanced functions of the software. Illustrative examples and targeted exercises ensure that you will be able to confidently implement in practice what you have learned in the course.

Siemens SIMATIC S7-300 for KRONES machines – basic course

Course: A 09; duration: 4 days

Target group:
Electrical maintenance staff, automation engineers

Suitable for the following software:
Siemens Step 7, V5.5

Requirements:
“Siemens SIMATIC S7-300 for KRONES machines – basic course” (A 08) or appropriate prior knowledge

Recommendation:
KRONES Automation Notebook

Topics:
- Configuration
- Hardware and peripheral components of a KRONES machine

Locations:
Neutraubling (DE), Franklin (US), Johannesburg (ZA), Bangkok (TH)
KRONES machine control – understanding and using relationships (Simatic S7-1500)
Course: A 02; duration: 3 days

Target group: Engineers, technicians, mechatronics technicians, electricians, line managers

Suitable for the following software: Step 7 V14, Visualisation Software, Runtime Utility Centre (B&R)

Requirements: Basic technical knowledge, basic PC knowledge

Recommendation: KRONES Automation notebook or KRONES Automation Field PG

Topics:
- System relationships:
  - General overview of the control system and consideration of the individual components
  - Insight into data communications within the machine/system
- Control technology maintenance:
  - Backing up of the system-relevant data of the entire system (CPU subcontroller, HMI, etc.)
  - Replacement of components
  - Preventive maintenance (e.g., imaging)
- Troubleshooting:
  - Specific troubleshooting of the general HMI fault message for PLC diagnostics
  - Bus and network diagnostics (AS-i, Profinet, Proflbus, Ethernet, etc.)
  - Touch-screen diagnostics options
  - PLC diagnostics with/without programming unit

Course objective: Avoiding downtimes, quickly diagnosing faults and backing up data completely are the basis for machine maintenance. In this course you will learn about the interplay of all control components, providing you with a better understanding of the system controller. Especially for new KRONES systems, the course offers a quick introduction, and with it a smooth transition from commissioning to production.

Locations: Neutraubling (DE), Franklin (US), Johannesburg (ZA), Bangkok (TH), Nairobi (KE)

Automation
Siemens S7-1500 controller and STEP 7 in the TIA portal

Innovations in the field of machine controllers: The latest generation of machines features Siemens S7-1500 controllers and the latest engineering software “STEP 7 in the TIA portal”.

To enable you to use this software structure to optimum effect, the KRONES Academy now also offers courses on this system. Please note: The Simatic S7-1500 Rack/TIA is not included in the course.

Your route to becoming a TIA expert in 8 days

Step 7/TIA basic course
- PLC system
- Variables and addressing
- Communication

Step 7/TIA advanced course
- PLC configuration
- Bus systems
- Hardware configuration

TIA System Advanced
- System set-up

Program modules
- TIA portal handling
- Diagnostics options
- Bit programming
- Profibus communication

KRONES TIA structure
- Programming
- Communication
- Documentation
- State machine

Programming languages
- SCL and S7 graph
- Basics
- Programming structure
- Commands

TIA-portal Training
KRONES Academy
Siemens SIMATIC S7-1500 for KRONES machines – basic course  
Course: A 06; duration: 4 days  
Target group: Electrical maintenance staff, automation engineers  
Suitable for the following software: Simatic Step 7 Professional V14, TIA Portal  
Requirements: Basic technical knowledge, basic IT and PC knowledge  
Recommendation: KRONES Automation Notebook  
Topics:  
- Structure, configuration and parametrisation of the automation system  
- Familiarisation with programming options, functions and function blocks  
- Interfaces and bus systems (AS-i bus, Profluss, decentralised peripherals with Profinet IO)  
- Communication with the subcontrollers or subsystems  
- Data backup  
- Operating/diagnostic options  
- Theoretical and practical final test  
Locations: Neutraubling (DE), Franklin (US)  
Course objective: How can faults be identified and eliminated quicker? How can downtimes be prevented and data be fully backed up? A hands-on and directly applicable service and programming training course will answer all these questions. On an S7 Rack you can work hands-on in our training centre, under the guidance of a professional instructor. You can implement your newly acquired skills and knowledge immediately on your line.

Siemens SIMATIC S7-1500 for KRONES machines – advanced course  
Course: A 07; duration: 4 days  
Target group: Electrical maintenance staff, automation engineers  
Suitable for the following software: SIMATIC Step 7 Professional V14, TIA-Portal  
Requirements: basic course: Siemens SIMATIC S7 - 1500 for KRONES machines (A06) or similar knowledge  
Recommendation: KRONES Automation Notebook  
Topics:  
- Brief revision of the basic course »SIMATIC S7-1500«  
- Structure, configuration and parametrisation of the automation systems  
- Familiarisation with service options  
- Decentralised peripherals with Profinet IO  
- You will learn expanded and complex options of programming  
- Overview of programming language SCL and S7-Graph  
- Troubleshooting, tips and tricks  
- Network system (Ethernet, DP/DP coupler)  
- Hard- and software diagnostic functions  
- Communication with HMI  
- Theoretical and practical final test  
Locations: Neutraubling (DE), Franklin (US)  
Course objective: You want to delve into Siemens SIMATIC S7-1500? This course is the ideal opportunity. You will enhance your knowledge acquired in the SIMATIC S7-1500 – basic course. You will learn complex facts supervised by our professional trainer. You will get successful training up to date with the latest level of technology.
Automation

**KRONES Visualisation Technology – Zenon touch-screen software**

Course: A 10; duration: 2 days

**Target group:**
Electrical maintenance staff, automation engineers

**Suitable for the following software:**
Zenon 6.22/7.10

**Requirements:**
None

**Recommendation:**
KRONES Automation Notebook; alternatively we would be happy to help you use your own hardware during setup (test version Windows Virtual PC)

**Topics:**
- KRONES visualisation philosophy
- Configuration of the hardware and communications assemblies
- File structures, project back-up and installation
- Handling the Zenon tools
- KRONES emergency package solution
- Alarm handling, diagnostics and interpretation of faults
- Zenon Editor (project planning environment)
- Handling and Functions of Zenon Explorer
- Functions, menu structure of the Zenon editor, SQL-DB
- Editing and adding malfunction texts and warning

**Locations:**
- Neutraubling (DE), Franklin (US), Bangkok (TH)

**Course objective:**
How does the KRONES visualisation technology work? Illustrative practical examples and hands-on exercises will help you to gain quickly confidence and expertise. In our training laboratory, you will work on simulations in the current Zenon 6.22/7.10 development environment. After the seminar, you will be able to perform modifications to the visualisation system, to efficiently eliminate faults and thus reduce downtimes.
Automation

B&R Automation (Electrical System) – Workshop
Course: A 14; duration: 2 days

Target group:
Electrical maintenance staff, IT experts

Suitable for the following machine types: all KRONES machines equipped with adequate software

Requirements:
Basic technical knowledge, basic IT and PC knowledge

Recommendation:
KRONES Automation Notebook

Topics:
- B&R components used at KRONES (system 2003/05/20, etc.)
- Basics of the drive technology: SDC module, Acopos
- B&R Automation Studio 3.0.8x basics, integrated help system
- CF creation according to KRONES standard (Create image)
- Diagnostics B&R hardware components
- B&R Runtime Utility Center

Locations:
Neutraubling (DE), Franklin (US)

Course objective:
Accomplished knowledge of the IT system considerably reduces the machine downtimes, because it helps not only to solve problems more quickly, but also to prevent them in the first place. This workshop conveys comprehensive knowledge of network and control system technology. Practical devices and training machines create a realistic learning environment.

ControlLogix and DeviceNet Control Technology – basic course
Course: A 15; duration: 4 days

Target group:
Electrical maintenance staff, automation engineers

Suitable for the following software:
RSLogix 500

Requirements:
Basic technical knowledge, basic IT and PC knowledge

Recommendation:
krones Automation Notebook

Topics:
- Communication with the control system
  - Network addresses and allocation
  - Structure of communication with RSLogix
- Project structure
  - Storage organisation
  - Tags and jobs
  - Hardware and peripherals
- Configuration
  - Project structure
  - Hardware and peripherals
  - Tags and jobs
- Optional: DeviceNet – settings and configuration
- Data backup
- Diagnostics

Locations:
Neutraubling (DE), Franklin (US)

Course objective:
In a laboratory that has been set up specifically for training, you will learn to cope with hardware and software programming on test racks and training machines. You will also be familiarised with the diagnostics functions for efficient troubleshooting.
Automation

Network Technology – Configuration and Structure
Course: A 36; duration: 1 day

Target group: Automation engineers, IT experts, electrical maintenance staff
Requirements: PC knowledge
Topics:
- OSI reference model
- IP addresses and classes
- IP structure in the network
- Network topologies
- Hub/switch/router
- Server architecture (DNS, DHCP, data server)
- Troubleshooting with console
Locations: Neutraubling (DE), Franklin (US)

Course objective:
This course familiarises you with the basics of network technology. You will learn to understand the configuration of networks, and how to cope with this structure. The newly acquired knowledge will finally enable you to identify and eliminate the causes of faults.

KRONES System Engineering – Workshop and Assessment
Course: A 13; duration: 1 day

Target group: Electrical maintenance staff, automation engineers
Requirements:
Certificate "KRONES Automation Engineer" or basic courses and KRONES system engineering workshops
Recommendation: KRONES Automation Notebook
Topics:
- Practical workshop/assessment on the training machine
- Exercises in a realistic learning environment
- Fault diagnostics for minimise sources of failures in the system
- KRONES emergency package: Solution for visualisation of malfunctions (Zenon)
- Data backup and backup of control elements and subcontrollers
- Practical programming exercises on the machine
- Theoretical and practical final test

The practical training units take place on a Contiform 3 or a simulation control cabinet depending on availability.
Locations: Neutraubling (DE), Franklin (US)

Course objective:
Have you already participated in IT or automation courses at the KRONES Academy? Then this workshop will offer you the ideal opportunity to enhance your practical knowledge and put it to use on the test bench. Test yourself and fill in those remaining knowledge gaps – and you will be awarded with the "KRONES Automation Engineer" certificate on successful completion.
KRONES Automation Concept

Our Automation Concept is the formula for your electronic and automation specialists for accurate diagnostics and optimisation of the entire automation technology.

One concept, three components

■ KRONES Automation Equipment
Using different racks and machine simulation units, all staff members can learn and enhance their knowledge of handling the machines as well as develop and test their own programs – without any downtimes during production.

■ KRONES Automation Notebook
It contains the required software as well as all adapters necessary for the diagnostics and data back-up of your line.

■ KRONES Automation Engineer
We offer modular basic courses and workshops for IT system technology, for line documentation systems, for visualisation systems as well as for automation and network concept.

Benefits to you

■ Coordinated components
The three elements of the KRONES Automation Concept can be used separately, as single automation modules, or as interacting components.

■ Maximum efficiency for all automation tasks
Whether training your own staff or troubleshooting: The KRONES Automation Concept is a benefit for your production – in daily operation on the machine and in simulation sequences.

You will find the digital version of the brochure under:
www.krones.com > Products > Service > Academy > Automation Concept
You want to get the best out of your automation training? The various KRONES automation racks are the ideal equipment to enhance your knowledge after the training course and to develop your own programs.

S7 rack
The basic module that is also used in our trainings. You can use this hardware to upload your own projects in conjunction with the Siemens Step 7 software without having to interfere with the machines during production.
- Developing and testing your own programs
- Holding automation courses
- Practising replacement of components

Touch-screen rack
The extension with which you simulate your machine on your rack.
- Importing and simulating existing machine projects
- Holding machine training courses for all employees
- Holding training courses for Zenon touch-screen software
- Processing your own projects

AS-i Safety rack
The rack for making your engineers fit for safety technology.
- Practising and testing the AS-i Safety components
- Replacing components
- Displaying and simulating faults on the touch-screen rack
- Analysis and diagnostics on the touch-screen

Each of the three IT racks will be delivered installed ready to use and tested in a specially developed frame. We also provide aluminium carrying cases for the racks to guarantee safe transport in a protective housing.

Price: on request

Notice:
For a full overview of our Automation racks, please see the KRONES website and our "Automation Concept" brochure.
### KRONES Automation Racks

#### Overview

- **KRONES SIMATIC S7-300 Rack**
- **KRONES SIMATIC S7-1500 Rack/TIA**
- **KRONES AS-i Safety Rack**
- **KRONES Frequency inverter rack for Danfoss**
- **KRONES B&R Rack (FVC)**
- **KRONES B&R Rack (SDC)**
- **KRONES Touch-Screen Rack**
- **KRONES Touch-Screen/SIMATIC S7 Rack**
- **KRONES SIMATIC S7-1500 Rack/TIA**
- **KRONES AS-i Safety Rack**
- **KRONES Frequency inverter rack for Danfoss**
- **KRONES B&R Rack (FVC)**
- **KRONES B&R Rack (SDC)**
- **KRONES Touch-Screen Rack**
- **KRONES Touch-Screen/SIMATIC S7 Rack**

### KRONES Automation Racks

#### Training opportunities and possible combinations

**Filler simulation – basic**
- SIMATIC S7
- Touch-Screen

**Filler simulation – basic (FVC)**
- SIMATIC S7
- B&R (FVC)

**Filler simulation – technician**
- AS-i Safety
- SIMATIC S7
- Touch-Screen

**Filler simulation – professional**
- AS-i Safety
- SIMATIC S7
- Touch-Screen

**Filler simulation – Automation Engineer Training**
- AS-i Safety
- SIMATIC S7
- B&R (FVC)
- B&R (SDC)

#### Bestseller

- SIMATIC S7
- Touch-Screen
- B&R (FVC)
- B&R (SDC)

- Profibus
- Ethernet
Your direct line to KRONES know-how
All machine information stored at a central location and available for calling up by a range of different devices? The Digital KRONES Academy makes it possible. The concept is simple yet ingenious at the same time:
You get operating manuals, custom-tailored training materials and short video sequences – and all in one place: the training terminal. But the Digital KRONES Academy is more than a central storage space. After all, it goes without saying that you also need to have the right tools to hand where they are needed – which means at the machine itself.

Via integrated Wi-Fi you can access all the materials in the training terminal using your smartphone or tablet. You will therefore be able to carry out crucial tasks on the KRONES machine confidently and reliably.
Digital KRONES Academy Embedded Coach – Our On-Site Training Coordinator

Installation and Training DKA at Your Company
- Help with the customer-specific adjustment of GOps or films
- Adjustment of the Digital KRONES Academy
- Repetition, help with the exercise, standardisation

From knowledge to practical application:
Our experienced coaches will instruct your teams in the use of all functions of the Digital KRONES Academy, ensuring an efficient use in daily operation.
Your own expert

Krones will support you with all questions around Automation Technology. Our objective is keeping your staff always up to date with the latest technology. With your certificate of the Krones Automation Engineer we will guarantee high-quality enhanced training and you will have your personal expert on-site.

Modular design

In theoretical and practical units, the future Krones Automation Engineers will learn
- technology of Krones components.
- the optimum interaction of network technology and control technology.
- performing maintenance and malfunction diagnostics without any problems.
- minimising sources of errors in the system.
- performing changes in the program.
- performing safe and quick data back-up.

Individual and efficient

On his way to Krones Automation Engineer, the participant will only take the courses he really needs for his successful certification. The Krones course navigator will help you to find the rights courses from the broad offer.

Always up to date

At the end of the course, the participant will receive the Krones certificate which is valid for two years. This way, Krones will guarantee that the qualification of the owner of the certificate is at the state of technology.

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Your way to the Krones Automation Engineer

Level 0

- Electrical components level is the prerequisite for the KAE certificate
- Electrical components level is the prerequisite for the KAE certificate

4 days: Step 7 basic course 2 days: Zenon 2 days: B&R 1 day: Assessment KAE certificate

* Electrical components level is the prerequisite for the KAE
Krones Automation Notebook

Description
Regardless of if for training support in automation training or diagnostics and troubleshooting in the line – with the KRONES Automation Notebook, you can start right away. The KRONES Automation Notebook contains the most important KRONES software applications; all required cables and adapters are included in the scope of supply.

Accessories and expansions
The following can be purchased as an option:
- Allen Bradley RS Logix 5000 Standard Edition
- B&R Automation Studio 3.0.9x Maintenance Set
- S7-PLCSim V5.4 Simulation Software
- ASiMon software with suitable connection cables
- SIMATIC Step7 in TIA Portal V15/ V14
- Zenon Supervisor Edition 6.20/6.22 and 710

Learning objectives
- Suitable for all training modules from the automation and electrical area
- Developing and testing own programs (Step7, Zenon HMI, etc.)
- Data backup using KRONES Backup and diagnostics tools

Technical data, scope of supply
- Dell 5580 with adequate equipment
- Alternatively: SIMATIC Field PG MS Comfort
- Danfoss MCT 10 setup software, B&R-CPU diagnostics, K-DOT, PDEXE, DCopy, EasyConfig, MOVI-TOOLS, DbaMGR2k
- Acronis® Backup & Recovery™

Benefits to you
- Expanded fault diagnostics for quick troubleshooting
- All tools for data back-up are already installed
- Communication interfaces, cables and adapters for data back-up and online connection are included in the scope of supply
- Simply turn it ON and you can start immediately
- Zenon emergency package included. Machine control using the Automation Notebook if system-relevant hardware has failed.

Krones course navigator
Your individual course recommendation
The KRONES course navigator will pave the way to successful completion of KRONES Automation Engineer. Use the interactive navigation to test your knowledge in the offered training modules and to receive the optimal course recommendation. Afterwards, you can order your personal offer with just one click.

You will find the KRONES course navigator under:
www.krones.com > Products > Service > Academy > Automation Concept
SitePilot course navigator

- SitePilot LD
  - Course: IT 30
  - Duration: 4 days
- KAM
  - Course: IT 31
  - Duration: 5 days
- KAM Light
  - Course: IT 32
  - Duration: 0.5 days
- KAM HMI
  - Course: IT 33
  - Duration: 0.5 days

Operators
  - Duration: 0.5 days

Engineer
  - Duration: 5 days

Shift leader
  - Duration: 4 days
KRONES IT Solutions – SitePilot

SitePilot: all KRONES IT solutions under one roof. KRONES MES (Manufacturing Execution System) helps you to plan, visualise, document and control your entire production. The SitePilot module as part of the Krones Automation Engineers comprises various courses. Comprehensive IT knowledge is conveyed to the participants who are perfectly trained on the topic of maintenance.

Optimal Total Cost of Ownership for the entire production

A KRONES MES allows you to ensure that your line is working to capacity. That’s because the system helps you schedule production jobs quickly and coordinate the relevant workflows optimally.

Clear and continuous batch tracking

Thanks to the automatic recording of all production data, you will get a seamless overview of the backward as well as the forward tracking of products and their components.

Transparency is everything

Collect all the information and data from production operation and make it available across the whole company. That’s how to create optimal production processes and high transparency for all decisions.

Costs and availability in hand

You can be sure that all products can be delivered rapidly and that jobs are completed efficiently even when schedules are tight.

Optimally informed – even with paperless production

The comprehensive flow of information from company headquarters down to the individual machines puts all production departments equally in the picture.

Flexibility whatever the batch size

The system even copes with a wide range of products and containers.
Line analysis using the KRONES SitePilot LD
Course: IT 30; duration: 4 days

Target group:
Electricians, shift supervisors, production managers

Suitable for the following software: SitePilot LD

Requirements: None

Topics:
- Overview of all SitePilot LD modules
- Practical work using SitePilot LD modules on your own PC
- Data Acquisition
  - Basics, structure and design
  - Network overview
  - Client/server hardware
- Information Board,
  - Status of the line
  - Observation and monitoring of procedures and processes
- Analysis Board
  - The analysis is performed by the graphical comparison of process and status data
  - Information on downtimes of the lead machine
- Reporting
  - Web-based reports for the standardised and comparable evaluation of the production situation
- Downtime Management
  - Targeted weak point analysis of bottling and packaging lines
  - Manual classification of downtimes
  - Detection of weak points and bottlenecks in the production
- Line overview
  - Graphical overview of the complete line represented in real time
  - Visual allocation of events to the actual event location
- Trending
  - Complete illustration of process values in the form of graphical trends in freely configurable diagrams
- Order Management (optional)
  - Order-specific display and analysis of information and key figures

Course objective:
Are you using KRONES SitePilot LD to measure the efficiency of your line? Do you know all parameters of this tool? This seminar will make you more familiar with the instrument, starting with the touch-screen functions up to the analysis of standard reports.

Location: directly on site
Maintenance and warehouse management using the KRONES Asset Management KAM

Course: IT 31; duration: 4 days

Target group: Maintenance managers, engineers, warehouse staff

Suitable for the following software: KRONES Asset Management KAM

Requirements: None

Topics:
- Working with the workbench
- Servicing
  - Equipment and personnel
  - Work instructions
  - Maintenance plan and order
  - Creating messages
  - Reporting system
- Parts management
  - Spare parts management
  - Bookings, orders, reservations
- Configuration
  - Basic configuration
  - Personnel and user configuration
  - Shift configuration
- KAM Web (optional)
  - Access to functions
  - Messages, check-back signals
  - Overview of materials
  - Work instructions

Location: Neutraubling (DE)

Course objective: KRONES KAM can do a lot for you. However, to fully benefit from this instrument, you have to understand what it is all about. Spend four days with our experts to gain a thorough insight into the system and to get answers to all of your questions.

Profit from the knowledge and the experience of our trainers and their practice-oriented teaching methods.
IT Solutions

KAM-Light: Introduction to the KAM web version
Course: IT 32; duration: 0.5 days

Target Group:
Maintenance managers, engineers, warehouse staff

Location:
Neutraubling (DE), on site

Requirements: none

Topics:
- Introduction to the basics
- KAM Web
  - Easy access to important KAM functions
  - Messages, check-back signals
  - Overview of materials
  - Work instructions

Course objective:
KAM Web offers you virtually a light version of the KRONES Asset Management on any Dateal. In only half a day you will know this tool and receive a thorough insight into the system. You will receive answers to all your questions and benefit from the knowledge and experience of our training course instructors and their hands-on teaching methods.

KAM on the machine: Operator training for KAM HMI
Course: IT 33; duration: 0.5 days

Target Group:
Operators

Location:
Neutraubling (DE)

Suitable for the following software:
KRONES Asset Management KAM

Requirements: None

Topics:
- Introduction
  - Basics
  - Machine touch-screen
- KAM HMI
  - Messages
  - Check-back signals
  - Work instructions
  - Documents

Course objective:
If you use KAM HMI, you will have maintenance information directly on the machine screen. After only half a day your operators will be able for example to send messages or retrieve and reset upcoming work.
Recording and evaluating key performance indicators using KRONES LDS
Course: IT 34; duration: 2 days

Target group: Electrical engineers, shift supervisors, production managers
Suitable for the following software: Line documentation system LDS
Requirements: None
Topics:
- Introduction
  - Basics, structure and design
  - Network overview
- Data Chart
  - Graphical representation of trend values
  - Scalable curve generation
- KRONES web report manager
  - Operating status report
  - Malfunction analysis report
  - Program report
  - Product List
  - Production report
  - Customer-specific reports
Location: Neutraubling (DE)

Course objective: Are you using KRONES LDS to measure the efficiency of your line? Do you know all parameters of this tool? This seminar makes you more familiar with this instrument, starting with the visualisation functions in the data monitor up to the standard reports in the Webreport Manager.

Administration of a KRONES LDS
Course: IT 35; duration: 0.5 days

Target group: IT experts, electrical engineers, shift supervisors, production managers
Suitable for the following software: Line documentation system LDS
Requirements:
- Participation in the course: “Recording and evaluating key performance indicators using KRONES LDS” (IT 34)
Topics:
- Introduction
  - Overview of networks, client/server hardware
- Data Archive
  - Recovery of archived data bases
  - Data security concepts
- KRONES Data Acquisition
  - Real-time data recording
- Shift administration, user administration
Location: Neutraubling (DE)

Course objective: This course provides you with the necessary skills for fulfilling the role as LDS administrator with expertise. You will gain a basic understanding for the configuration of the program and you will find out which safety aspects must be considered. You will also learn how to back up and restore data and you will then be able to independently configure and manage both the shift system and the users.
KRONES Line Performance Analyser LPA – reports and data analysis

Course: IT 36; duration: 1 day

Target group:
Shift supervisors, production managers

Suitable for the following software:
Line Documentation System LDS and Line Performance Analyser LPA

Requirements:
"Recording and evaluating key performance indicators using KRONES LDS" (IT 34)

Topics:
■ Introduction
– Basics
– Requirements
■ OEE entries
– Classifying, grouping and dividing filler downtimes
– Time mode online/historical

Location: Neutraubling (DE)

Course objective:
The Line Performance Analyser monitors your line and "serves up" all the key performance indicators you require in a clearly arranged and convenient format. To help you get the best out of LPA right from the start, we offer this workshop. Learn in only one day how to efficiently and safely use this system!

KRONES Line Performance Analyser LPA – data input

Course: IT 37; duration: 0,5 day

Target Group:
Operators

Suitable for the following software:
Line Documentation System LDS and Line Performance Analyser LPA

Requirements: none

Topics:
■ Introduction to the basics
■ Classifying downtimes and non-productive times of the lead machine
– Assigning non-productive times such as cleaning, changing over, etc.
– Classifying lead machine downtimes
■ Operator panel (optional)
– Starting and ending production orders

Location: Neutraubling (DE)

Course objective:
The LPA supplies correct analyses only if you know how to properly classify the downtimes of the lead machine. This course will give you a solid foundation for your daily work using the Line Performance Analyser – the best prerequisite for the LPA to provide you with exactly those analyses which you also require.
## Techniques and Methods for Managers in the Beverage Industry

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Techniques and Methods for Managers in the Beverage Industry

KRONES technology for decision makers
Course: M 03; duration: 3 days

Target group:
Line managers, shift supervisors, plant managers, quality managers, production managers

Requirements: None

Topics:
- Overview of the technology of the following machine models
  - PET blow moulders
  - Fillers
  - Labellers
  - Inspectors
  - Packers and Palletisers
  - Significance of the consumables
  - Visits to production
  - Preventing malfunctions
  - Limits of the process

This course takes place in Neutraubling (2 days) and Rosenheim (1 day).

Locations:
Neutraubling/Rosenheim (DE)

Course objective:
Gaining an established insight into the most important filling and packaging technology in no time – this is the objective of “KRONES Technology for Decision Makers”. Become familiarised with the critical points of your line, the mastering of which ensures efficiency on a sustained basis.

Train the Trainer – Conveying Knowledge in the Industry
Course: M 06; duration: 2 days

Target Group:
Line managers and shift supervisors

Requirements: none

Topics:
- Basics of communication
- Presentation techniques
- Planning and preparing
- Training courses
- Breaking down resistance to learning
- Involving difficult participants
- Checking the success of the training
- Understanding and accepting the role as a trainer
- Practical exercises with feedback
- Simulation of training situations on the machine or line

Location:
Neutraubling (DE)

Course objective:
You have the expertise, and you want to know how to pass your knowledge on to others? This course provides you with the necessary skills. Not only will you be familiarised with well-proven methodical and educational basics, but you will also learn how to effectively motivate your participants. At the end of the course, you will be able to work out your own seminars, trainings or instructions, and to develop and optimise them.
Line Efficiency 1 — Analysis and Optimisation of Existing Lines  
Course: M 16; duration: 2 days  

Target group: 
Line managers, shift supervisors, production managers  

Requirements: Initial experience as line manager or shift supervisor  

Topics:  
- Line layout  
- Buffer and acceleration output, performance diagram  
- Measuring buffer times, line productivity  
- Analysis tools for recognising weak points  
- Key figures for measuring the line efficiency (OEE, MTBF, MTTR)  
- Organising routine jobs more efficiently  
- Staff and their influence on the line productivity  
- Optional: The seminar can be expanded with the seminar “Total Productive Management – Implementing TPM on a Sustained Basis in the Beverage Industry” (M 18).  

Locations:  
Neutraubling (DE), Franklin (US), Johannesburg (ZA), São Paulo (BR)  

Course objective:  
In this course, you will learn how to calculate the main key illustration OEE and how to optimise your line by manipulating the various factors of influence. With well-proven analysis tools, you will identify the weak points of every line. You will be able to perform a profitability analysis, and to organise routine tasks more efficiently. Moreover, you will find out how to create an action plan to increase line efficiency. And, not least: how to motivate yourself and others in the long run.  

Line Efficiency Plus  
Course: M 26; duration: 3 days  

Target group: 
Line managers, shift supervisors, production managers  

Requirements: Openness to intuitive methods  

Topics:  
- As "Line Efficiency 1" (M 16) plus the following content:  
  - Assuming the correct inward attitude as key to success  
  - Discovering alternative solution strategies with a larger angle of observation  
  - Decision making methods for unclear situations  
  - Developing a good solution in apparent irresolvable situations  
  - Finding win-win solutions to the satisfaction of all parties  
  - New perspectives for identifying causes without accusations  
  - Identifying the negotiating position of other parties  

Location:  
Neutraubling (DE)  

Course objective:  
This course includes all contents of the module “Line Efficiency 1” (M 16). Moreover, you will benefit from the following learning targets: 
You will get concrete approaches to the individual situation in your company. By using intuitive methods, you will gain insight into deeper causes of problems and you will learn how to fight them successfully.
Techniques and Methods for Managers in the Beverage Industry

Line Efficiency 2 – Implementation of Action Plans to Increase Efficiency
Course: M 17; duration: 2 days

Target group:
Line managers, shift supervisors, production managers

Requirements: Course “Line Efficiency 1 – Analysis and Optimisation of Existing Lines” (M 16) or comparable experience

Topics:
- Retrospective: Experience with the analysis from “Line Efficiency 1”
- Typical reactions to changes
- Basics of communication
- De-escalating communication

Course objective:
This course seamlessly continues the module “Line Efficiency 1”. It enables you to consequently implement action plans for line optimisation. You will also learn how to appear in a convincing manner – “upwards” as well as “downwards”. The result: You will know how to systematically motivate your staff and win them over for necessary changes.

Location: Neutraubling (DE)

Total Productive Management – Implementing TPM on a Sustained Basis in the Beverage Industry
Course: M 18; duration: 0.5 days

Target group:
Line managers, plant managers, production managers, shift supervisors

Requirements: Experience in the beverage industry

Topics:
- Total Productive Management
- The eight pillars of TPM
- The role of leadership in change processes
- Experience in implementing TPM

Course objective:
The seminar is designed to follow on from the M 16 or M 26 seminars. This course explains to you what “Total Productive Management” is all about and which factors determine the success of the management system. Moreover, concrete examples from the beverage industry illustrate how the processes can be implemented successfully in your company.

Location: Neutraubling (DE)
Techniques and Methods for Managers in the Beverage Industry

The SMED Method – Workshop for Shortening Change-Over Times

Course: M 21; duration: 2 – 3 days

Target group: Line managers, shift supervisors

Requirements: Practical change-over experience is preferable

Topics:
- Recognising change-over as a loss
- Advantages of short change-over times
- Effects on the OEE
- Success factors and rules for quick change-over
- Preparation of the change-over workshop

Course objective:
SMED practically on your machine
- Recording actual state
- Separating internal and external times
- Identifying losses
- Organising the new process
- Creating a checklist
- Measuring change-over and time savings
- Visualisation of the results
- Ensuring sustainability

Location: On site

Aseptic Filling and Process Technology – Understanding and Operation

Course: M 12; duration: 2 days

Target group: Line managers, production managers

Requirements: None

Topics:
- Advantages of aseptic filling
- Definitions of terms and legal foundations
- Disinfection concepts
- Performance and main cost factors
- Quality assurance
- Special training requirements and solutions

Course objective:
In this course, you will gain insight into different disinfection concepts and the relative cost factors. The knowledge thus acquired will enable you to adapt your organisation to the demands of quality assurance and hygiene concepts.

Location: Neutraubling (DE)
When does an Aseptic line run optimally? When the operators have a perfect command of both the technology and the hygienic environment. The training course for an Aseptic Block Supervisor ensures both aspects. That’s because it is directed at increasing the efficiency and availability of the line with efficient troubleshooting. And it creates the basis for a high level of microbiological safety and the reliable compliance with quality standards.

Requirements:
- Beverage and food-related vocational training, e.g. beverage technicians, brewers, dairy farmers, or comparable training
- At least 2 years experience in the field of aseptic filling of sensitive beverages as a shift leader or QM/QA staff
- Didactic abilities for passing on knowledge

Topics:
- Seminars module 1 (7 days)
  - Aseptic and hygiene basics
  - Microbiology of beverages – practical training
  - Aseptic filling and process technology I – configuration/method of operation
- Seminars module 2 (4 days)
  - LDS system training
  - Mechanical components in aseptic systems
  - Aseptic filling and process technology II – process sequences and control
- Seminars module 3 (9 days)
  - LDS user training
  - Aseptic filling and process technology III – troubleshooting
  - Maintenance – overhaul – restart
  - Practical training II on beverage microbiology – killing test, log rate
  - Critical hygiene points
  - Test and assessment

Location: Neutraubling (DE)

Course objective: As a trained Aseptic Block Supervisor you will be well versed with components and processes of an aseptic line. You will be able to conduct targeted troubleshooting and to identify and eliminate critical hygiene points. Monitoring the quality assurance will be as easy for you as organising maintenance sequences that meet the hygienic requirements. Moreover, the training enables you to analyse and evaluate the process sequences with the line documentation system.
Techniques and methods for managers in the beverage industry

Expert dialogue: Specifically using cleaning agents, lubricants and adhesives
Course: M 22; duration: 1.5 days

Target group:
Line managers, shift supervisors, production managers, maintenance managers, engineers

Requirements: None

Topics:
■ Significance of consumables (adhesives, lubricants, cleaning agents)
■ Efficient use of adhesives, cleaning agents and lubricants
■ Expert level dialogue on the subject of adhesives, lubricants (lubrication schedules) and cleaning agents (hygiene plans) in your particular bottling line
■ Reducing downtimes with the efficient use of the right consumables
■ Visit to the bottling line and tips on practical implementation
■ Use of consumables – individually coordinated to your bottling line

Location: Neutraubling (DE), on site

Course objective:
A well thought-out consumables strategy pays off. Because a company, which uses adhesives, cleaning agents and lubricants coordinated exactly to its line, will be rewarded by its machines having a long service life and a high performance level. In this course you will learn how to prevent unplanned downtimes, product faults and other risks by using the correct consumables. The aim of the course is to maximise the output of your lines.

Line Analysis and Line Efficiency – Workshop
Course: M 23; duration: 4 – 5 days

Target group:
Line managers, shift supervisors, maintenance managers, production managers

Requirements:
Several years of experience in bottling and packaging technology

Refresher on the following topics:
■ Key performance indicators such as OEE, MTBF and MTTR
■ Line dimensioning (buffers, acceleration and behaviour curve)
■ Calculating TCO and ROI
■ PICK and background analysis
■ Optimisation methods

Location: Neutraubling (DE)

Course objective:
To date KRONES has carried out line analyses for you or held seminars on improving line efficiency for you. Now these are both available in combination: you will learn how to calculate key performance indicators such as OEE, MTBF and MTTR and will understand the concept of the lead machine, buffers and acceleration. We will conduct a line analysis of your system together, using tried-and-tested analysis tools to do so. Minor optimisations will be implemented immediately. By the end, you and your team will be able to optimise other lines yourself.
The Krones.shop makes things happen

Instead of hunting through lists of articles, writing emails or making phone calls, you just need a couple of clicks – and the part you are looking for will already be winging its way to where it is needed.

The KRONES.shop contains around 1.7 million KRONES spare parts. In addition to pictures, parts lists and circuit diagrams, it also displays prices and availability. And as well as a quick and convenient way of ordering parts, it also gives you an opportunity to book training at the KRONES Academy or purchase products of our subsidiaries, for instance.

You can register online right now by going to shop.krones.com. We will then create your personal profile and link it to parts lists, drawings and circuit diagrams for your machinery. Once you have received the login details we send, you can get started straight away. Selecting and ordering the right parts will then be child’s play.

Not yet a KRONES customer? The krones.shop is still your ideal shopping platform, because the articles offered there are available for all food and beverages producers around the world.

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How to get to the KRONES.shop:

shop.krones.com

Benefits to you

Always the right choice
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- One account that multiple employees can use
- Exploded views of your machines with hotspots and documentation in the integrated eCat

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- Round the clock – 24 hours a day, 7 days a week
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- Geolocating function that offers each customer the appropriate language and useful additional information such as upgrades, special offers and further recommendations

How to get to the KRONES.shop:
### Course Information

**Krones Academy Germany**

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<tr>
<th>Course no.</th>
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<th>Date</th>
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**Krones Academy Germany**

**Contact for Germany**

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Phone +49 9401 70-6414
Fax +49 9401 70-916414
E-mail academy@krones.com
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<td>06 – 09 November 2018</td>
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<td>1 Day</td>
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<td>Contiroll hot-melt technology: Expert training</td>
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<td>4 Days</td>
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**KRONES Academy Germany**

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<td>Line analysis using the KRONES Site Pilot LD</td>
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<td>IT 31-1</td>
<td>Maintenance and warehouse management using the KRONES Asset Management KAM</td>
<td>German</td>
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<td>KAM-Light: Introduction to the KAM web version</td>
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<td>KAM on the machine: Operator training for KAM HWI</td>
<td>English</td>
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<td>Administration of a KRONES LDS</td>
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<td>German</td>
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<td>Line Efficiency 1 – Analysis and Optimisation of Existing Lines</td>
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Krones Academy Germany
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<tr>
<th>Course-no.</th>
<th>Designation</th>
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<th>Date</th>
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<tr>
<td>P 01</td>
<td>Contiform 3 Basics and introduction to the Electrical System</td>
<td>Chinese</td>
<td>3 Days</td>
<td>09 – 15 January 2018</td>
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<td>Top Ten problems with the Contiform 3</td>
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<td>3 Days</td>
<td>20 – 23 March 2018</td>
<td>1,500 RMB/Day</td>
<td>Taicang/China</td>
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**Contact for China**

Jun Yang  
KRONES Machinery Co. Ltd.  
No. 9, Ningbo East Road  
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Phone +86 1391 1856742  
Fax +86 512 535727-70  
E-mail academy@krones.com
<table>
<thead>
<tr>
<th>Course-no.</th>
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KRONES (Thailand) Co. Ltd.
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Mobile +52 1551354082  
E-mail academy@krones.com

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<td>F 01</td>
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<tr>
<td>I 05</td>
<td>Checkmat 731 and 752</td>
<td>Spanish</td>
<td>3 Days</td>
<td>25 – 27 September 2018</td>
<td>€ 1,845.00</td>
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<td>I 05</td>
<td>Checkmat 731 and 752</td>
<td>Spanish</td>
<td>3 Days</td>
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<td>I 03</td>
<td>Modular Linatronic 735 – basic course</td>
<td>Spanish</td>
<td>5 Days</td>
<td>01 – 03 February 2018</td>
<td>€ 3,075.00</td>
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<tr>
<td>I 03</td>
<td>Modular Linatronic 735 – basic course</td>
<td>Spanish</td>
<td>5 Days</td>
<td>25 – 27 August 2018</td>
<td>€ 3,075.00</td>
<td>São Paulo/BR</td>
</tr>
<tr>
<td>I 03</td>
<td>Modular Linatronic 735 – basic course</td>
<td>Spanish</td>
<td>5 Days</td>
<td>25 – 27 September 2018</td>
<td>€ 3,075.00</td>
<td>São Paulo/BR</td>
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<tr>
<td>I 03</td>
<td>Modular Linatronic 735 – basic course</td>
<td>Spanish</td>
<td>5 Days</td>
<td>04 – 06 December 2018</td>
<td>€ 3,075.00</td>
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<td>I 03</td>
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<td>5 Days</td>
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<td>5 Days</td>
<td>03 – 05 February 2018</td>
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<tr>
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<td>Modular Linatronic 735 – basic course</td>
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<td>5 Days</td>
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<td>€ 3,075.00</td>
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<td>Spanish</td>
<td>5 Days</td>
<td>18 – 20 August 2018</td>
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<td>I 03</td>
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<td>Spanish</td>
<td>5 Days</td>
<td>05 – 07 October 2018</td>
<td>€ 3,075.00</td>
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<td>Modular Linatronic 735 – basic course</td>
<td>Spanish</td>
<td>5 Days</td>
<td>01 – 03 December 2018</td>
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<td>I 09</td>
<td>Modular Linatronic 735 – advanced course</td>
<td>Spanish</td>
<td>5 Days</td>
<td>12 – 16 March 2018</td>
<td>€ 3,075.00</td>
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<td>I 09</td>
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<td>07 – 11 May 2018</td>
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<td>Modular Linatronic 735 – advanced course</td>
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<td>5 Days</td>
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<td>I 09</td>
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<td>E 01</td>
<td>KRONES Electrical Engineering for Mechanical Maintenance Staff</td>
<td>Spanish</td>
<td>2 Days</td>
<td>upon request</td>
<td>€ 1,230.00</td>
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<td>2 Days</td>
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<tr>
<td>E 04</td>
<td>Filler – Electrical System (FVC Controller)</td>
<td>Spanish</td>
<td>3 Days</td>
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<td>€ 1,845.00</td>
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<td>Filler – Electrical System (FVC Controller)</td>
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<td>3 Days</td>
<td>06 – 08 February 2018</td>
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<td>E 04</td>
<td>Filler – Electrical System (FVC Controller)</td>
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<td>24 – 26 March 2018</td>
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<td>E 04</td>
<td>Filler – Electrical System (FVC Controller)</td>
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<td>3 Days</td>
<td>12 – 14 June 2018</td>
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<td>3 Days</td>
<td>12 – 14 December 2018</td>
<td>€ 1,845.00</td>
<td>São Paulo/BR</td>
</tr>
<tr>
<td>M 16</td>
<td>Line Efficiency 5 – Analysis and Optimisation of Existing Lines</td>
<td>Portuguese</td>
<td>2 Days</td>
<td>upon request</td>
<td>upon request</td>
<td>São Paulo/BR</td>
</tr>
<tr>
<td>Course-no.</td>
<td>Designation</td>
<td>Language</td>
<td>Duration</td>
<td>Date</td>
<td>Price per participant</td>
<td>Location</td>
</tr>
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</tr>
<tr>
<td>P 01</td>
<td>Contiform 3 – Basics and Introduction to the Electrical System</td>
<td>English</td>
<td>4 Days</td>
<td>upon request</td>
<td>$ 2,410.00</td>
<td>Franklin/USA</td>
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<tr>
<td>P 02</td>
<td>Contiform 2 – Basics and Introduction to the Electrical System</td>
<td>English</td>
<td>4 Days</td>
<td>upon request</td>
<td>$ 2,410.00</td>
<td>Franklin/USA</td>
</tr>
<tr>
<td>P 03</td>
<td>Contiform 3 – Maintenance</td>
<td>English</td>
<td>5 Days</td>
<td>upon request</td>
<td>$ 3,235.00</td>
<td>Franklin/USA</td>
</tr>
<tr>
<td>P 04</td>
<td>Contiform 2 – Maintenance</td>
<td>English</td>
<td>5 Days</td>
<td>upon request</td>
<td>$ 3,235.00</td>
<td>Franklin/USA</td>
</tr>
<tr>
<td>P 05</td>
<td>Contiform 2 – PET Process Technology</td>
<td>English</td>
<td>5 Days</td>
<td>upon request</td>
<td>$ 3,840.00</td>
<td>Franklin/USA</td>
</tr>
<tr>
<td>P 07</td>
<td>Contiform 3 – PET Process Technology</td>
<td>English</td>
<td>2 Days</td>
<td>upon request</td>
<td>$ 1,840,00</td>
<td>Franklin/USA</td>
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### Filling Technology

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<th>Course-no.</th>
<th>Designation</th>
<th>Language</th>
<th>Duration</th>
<th>Date</th>
<th>Price per participant</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>F 01</td>
<td>Filler Volumetric VODM, Modufill VFS, VFJ – Mechanical Components of the Filler</td>
<td>English</td>
<td>2 Days</td>
<td>upon request</td>
<td>$ 1,098.00</td>
<td>Franklin/USA</td>
</tr>
<tr>
<td>F 02</td>
<td>Filler Mechatronic HRS – Mechanical Components of the Filler</td>
<td>Spanish</td>
<td>2 Days</td>
<td>upon request</td>
<td>$ 1,098.00</td>
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### Inspection Technology

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<th>Designation</th>
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<th>Duration</th>
<th>Date</th>
<th>Price per participant</th>
<th>Location</th>
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<tbody>
<tr>
<td>I 05</td>
<td>Checkmat 731 and 752</td>
<td>English</td>
<td>3 Days</td>
<td>upon request</td>
<td>$ 1,840.00</td>
<td>Franklin/USA</td>
</tr>
<tr>
<td>I 10</td>
<td>KRONES Dart Plus Orientation System</td>
<td>English</td>
<td>3 Days</td>
<td>upon request</td>
<td>$ 1,840.00</td>
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### Pack- und Palettiertechnik

<table>
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<th>Course-no.</th>
<th>Designation</th>
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<th>Duration</th>
<th>Date</th>
<th>Price per participant</th>
<th>Location</th>
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<tbody>
<tr>
<td>D 01</td>
<td>Basic course: Packaging and Palletising Technology Operation (Variopac)</td>
<td>English</td>
<td>3 Days</td>
<td>upon request</td>
<td>$ 1,098.00</td>
<td>Franklin/USA</td>
</tr>
<tr>
<td>D 03</td>
<td>Basic course: Packaging and Palletising Technology Maintenance (Variopac)</td>
<td>English</td>
<td>3 Days</td>
<td>upon request</td>
<td>$ 1,098.00</td>
<td>Franklin/USA</td>
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### Labelling Technology

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<th>Designation</th>
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<th>Duration</th>
<th>Date</th>
<th>Price per participant</th>
<th>Location</th>
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<tr>
<td>L 04</td>
<td>Self-adhesive technology – APS 3 + 4: basics, maintenance, adjusting work</td>
<td>Spanish</td>
<td>2.5 Days</td>
<td>upon request</td>
<td>$ 1,375.00</td>
<td>Franklin/USA</td>
</tr>
<tr>
<td>L 04</td>
<td>Hotmelt Technology Contiroll 745: basics, maintenance, adjusting work</td>
<td>Spanish</td>
<td>2.5 Days</td>
<td>upon request</td>
<td>$ 1,375.00</td>
<td>Franklin/USA</td>
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<tr>
<td>L 05</td>
<td>Hotmelt Technology Contiroll 810: basics, maintenance, adjusting work</td>
<td>English</td>
<td>3 Days</td>
<td>upon request</td>
<td>$ 1,650.00</td>
<td>Franklin/USA</td>
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<tr>
<td>L 05</td>
<td>Sleevematic 795 M: basics, maintenance, adjusting work</td>
<td>English</td>
<td>2 Days</td>
<td>upon request</td>
<td>$ 1,098.00</td>
<td>Franklin/USA</td>
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<td>Course-no.</td>
<td>Designation</td>
<td>Language</td>
<td>Duration</td>
<td>Date</td>
<td>Price per participant</td>
<td>Location</td>
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<tr>
<td>L 08</td>
<td>Contiroll HS (High Speed) – Operator Training</td>
<td>English</td>
<td>2 Days</td>
<td>upon request</td>
<td>$1,098.00</td>
<td>Franklin/USA</td>
</tr>
<tr>
<td>L 09</td>
<td>Contiroll HS (High Speed) – Maintenance</td>
<td>Spanish</td>
<td>3 Days</td>
<td>upon request</td>
<td>$1,650.00</td>
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<td>L 14</td>
<td>Systematic troubleshooting using the Contiroll 810 as an example</td>
<td>English</td>
<td>2 Days</td>
<td>upon request</td>
<td>$1,098.00</td>
<td>Franklin/USA</td>
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<tr>
<td>L 16</td>
<td>Cold-glue technology: Expert training</td>
<td>English</td>
<td>5 Days</td>
<td>upon request</td>
<td>$1,650.00</td>
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<tr>
<td>L 17</td>
<td>Cold-glue technology: basics, maintenance, adjusting work (table machine)</td>
<td>English</td>
<td>3,5 Days</td>
<td>upon request</td>
<td>$1,925.00</td>
<td>Franklin/USA</td>
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<tr>
<td>L 18</td>
<td>Cold-glue technology: basics, maintenance, adjusting work (module machine)</td>
<td>English</td>
<td>4 Days</td>
<td>upon request</td>
<td>$1,925.00</td>
<td>Franklin/USA</td>
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<tr>
<td>E 01</td>
<td>KRONES Electrical Engineering for Mechanical Maintenance Staff</td>
<td>English</td>
<td>2 Days</td>
<td>upon request</td>
<td>$1,320.00</td>
<td>Franklin/USA</td>
</tr>
<tr>
<td>E 03</td>
<td>Contiform – Electrical System</td>
<td>English</td>
<td>3 Days</td>
<td>upon request</td>
<td>$1,825.00</td>
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<tr>
<td>E 03</td>
<td>Filter – Electrical System (LCT 3005 Industrial PC)</td>
<td>English</td>
<td>3 Days</td>
<td>upon request</td>
<td>$1,825.00</td>
<td>Franklin/USA</td>
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<tr>
<td>E 05</td>
<td>Cold glue – labeller – Electrical System</td>
<td>English</td>
<td>2,5 Days</td>
<td>upon request</td>
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<tr>
<td>E 06</td>
<td>Control and Control 16 (B&amp;R Industrial PCs) – Electrical System</td>
<td>English</td>
<td>2 Days</td>
<td>upon request</td>
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<tr>
<td>E 07</td>
<td>Continous MIX With LCT 3 Commander – Electrical System</td>
<td>English</td>
<td>2 Days</td>
<td>upon request</td>
<td>$1,825.00</td>
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<tr>
<td>E 09</td>
<td>Modular Labeler Generation 2 – Electrical System</td>
<td>English</td>
<td>2 Days</td>
<td>upon request</td>
<td>$1,825.00</td>
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<tr>
<td>E 14</td>
<td>KRONES electrical technology – systems engineering</td>
<td>English</td>
<td>2 Days</td>
<td>upon request</td>
<td>$1,825.00</td>
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**Management Training**

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<th>Designation</th>
<th>Language</th>
<th>Duration</th>
<th>Date</th>
<th>Price per participant</th>
<th>Location</th>
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<tr>
<td>E 15</td>
<td>Electrical System Training in the laboratory</td>
<td>English</td>
<td>4 Days</td>
<td>upon request</td>
<td>$2,604.00</td>
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<td>E 16</td>
<td>AS-Interface</td>
<td>English</td>
<td>5 Days</td>
<td>upon request</td>
<td>$300.00</td>
<td>Franklin/USA</td>
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<td>E 17</td>
<td>KRONES Automation Systematics</td>
<td>English</td>
<td>5 Days</td>
<td>upon request</td>
<td>$2,500.00</td>
<td>Franklin/USA</td>
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<tr>
<td>E 18</td>
<td>Servo drive technology</td>
<td>English</td>
<td>2 Days</td>
<td>upon request</td>
<td>$1,320.00</td>
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<table>
<thead>
<tr>
<th>Course-no.</th>
<th>Designation</th>
<th>Language</th>
<th>Duration</th>
<th>Date</th>
<th>Price per participant</th>
<th>Location</th>
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<tr>
<td>M 16</td>
<td>Line Efficiency 1 – Analysis and Optimisation of Existing lines</td>
<td>English</td>
<td>2 Days</td>
<td>upon request</td>
<td>$1,775.00</td>
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**Workshop Performing Center**

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<th>Duration</th>
<th>Date</th>
<th>Price per participant</th>
<th>Location</th>
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<tbody>
<tr>
<td>A 08</td>
<td>Siemens S7-1500 for KRONES Machines – basic course</td>
<td>English</td>
<td>4 Days</td>
<td>upon request</td>
<td>$2,640.00</td>
<td>Franklin/USA</td>
</tr>
<tr>
<td>A 09</td>
<td>Siemens S7-1500 for KRONES Machines – advanced course</td>
<td>English</td>
<td>4 Days</td>
<td>upon request</td>
<td>$2,640.00</td>
<td>Franklin/USA</td>
</tr>
<tr>
<td>A 06</td>
<td>Siemens S7-300 for KRONES Machines – basic course</td>
<td>English</td>
<td>4 Days</td>
<td>upon request</td>
<td>$2,640.00</td>
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</tr>
<tr>
<td>A 07</td>
<td>Siemens S7-300 for KRONES Machines – advanced course</td>
<td>English</td>
<td>4 Days</td>
<td>upon request</td>
<td>$2,640.00</td>
<td>Franklin/USA</td>
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<tr>
<td>A 10</td>
<td>KRONES touch-screen technology – Zenon touch-screen software</td>
<td>English</td>
<td>2 Days</td>
<td>upon request</td>
<td>$1,320.00</td>
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<td>A 14</td>
<td>B&amp;R Automation (Electrical System) – Workshop</td>
<td>English</td>
<td>2 Days</td>
<td>upon request</td>
<td>$1,320.00</td>
<td>Franklin/USA</td>
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<tr>
<td>A 15</td>
<td>ControlLogix and DeviceNet Control Technology</td>
<td>English</td>
<td>4 Days</td>
<td>upon request</td>
<td>$2,640.00</td>
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<tr>
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### Courses by KRONES Academy Africa

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<td>upon request</td>
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**Important Information in Brief**

- **Website:** [https://shop.krones.com/shop/uk/en/Academy/c/Academy](https://shop.krones.com/shop/uk/en/Academy/c/Academy)
- **E-mail:** academy@krones.com
- **Course schedule:**
  - Beginning of the course: 08:00 a.m. (09:00 a.m. at the first day)
  - End of the course: approx. 04:00 p.m.
- **Accommodation:**
  - If desired, we are happy to help you to book your accommodation. Please send us the names and travel data of the participants at least ten days before the start of the training. Please note that arising expenses for the hotel must be paid by the participants directly in the respective hotel.

**Transfer:**
In Germany, we can organise a free transfer between the airplocation or train station, your hotel and the KRONES Academy. Please inform us with your registration whether you want to use this service.

**Cancellations:**
There will be no fee for cancellations that are received two weeks prior to the beginning of the seminar at the latest. Later cancellations will result in a charge of the full course fee.

For this reason, the KRONES Academy reserves the right to cancel seminars or to delay or change them. You will be informed about this.
KOSME designs and realises customer-specific filling lines for the international beverage, food, pharmaceutical and cosmetics industry for the mid and low-performance segments.

KOSME – comprising the Austrian KOSME GMBH and the Italian KOSME S.R.L. – offers a complete line program to complement the portfolio of its parent company KRONES, the global leader in the high-performance segment for beverage filling and packaging technology.

While KOSME Italy concentrates on labelling and filling technology and bundles the sales activities, the Austrian arm of KOSME handles the development and production of stretch blow moulding technology.

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46048 Roverbella (MN)
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E-mail anna.pronesti@kosme.it

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Kosme Gesellschaft mbH
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2601 Sollenau
Phone +43 2628 411 136
Fax +43 676 88 411 136
E-mail v.ehrenhoefer@kosme-austria.com
Social Media
KRONEs is using the social media for exchange with business partners, employees and all those who are interested in the company and its products.

You will find us here:

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www.krones.com
https://shop.krones.com/shop/uk/en/Academy/c/Academy

Twitter
twitter.com/kronesag

Facebook
facebook.com/kronesag
facebook.com/kronesacademy

YouTube
youtube.com/kronestv

“KRONEs Academy – achievers aren’t born, they are built”