



Operating Fundamentals

Training objectives

- ▶ Work safely during operation
- ▶ Understand the basic functions of the equipment
- ▶ Get familiar with the operating elements
- ▶ Be able to operate the equipment
- ▶ Get familiar with cleaning procedures

Content

General information about the equipment

Training plan, objectives, documentation

Safety

Explanation of safety regulations and systems

Functional description

Basic functions of functional and constructional units/ components?

Operating elements and instructions

Operating and indication elements, HMI screens and menus, Recipe handling, Teaching of the start-up preparation, production, and shutdown sequences to reach a high quality production

Cleaning

General explanations, cleaning duties, line clearance

Function monitoring

Monitoring systems and monitored faults

Failure handling and elimination

Alarms, failure listings, recognition, evaluation and acknowledgement

Conclusion

Summary and training evaluation

Requirements

Basic technical know-how

Related training modules

Format size change

Target group

Operators, Production Supervisors

Bosch Packaging Academy

Essential Training



BOSCH
Invented for life

Mechanical Maintenance

Training objectives

- ▶ Work safely during maintenance
- ▶ Understand the equipment, spare parts and maintenance documentation
- ▶ Get familiar with the periodic maintenance tasks and preventive maintenance principles
- ▶ Learn about the equipment settings and the fundamental product parameters
- ▶ Communicate effectively with the Bosch hotline for fast support

Content

General information about the mechanical maintenance module

Training plan, objectives, documentation

Safety

Explanation of safety regulations and systems

Mechanical maintenance

Maintenance plan, periodic maintenance tasks, preventive maintenance principles, spare parts catalogue, order process for spare parts

Functional details and settings

Details of functional and constructional units, zero positions and basic settings, Recipe management

Trouble shooting

Procedure for eliminating faults, diagnosis systematic

Conclusion

Summary and Training evaluation

Requirements

Operating fundamentals, know-how about Format Size Change

Related training modules

Electrical maintenance, Technical troubleshooting, Set up of new product

Target group

Mechanical maintenance personnel, technicians

Bosch Packaging Academy

Essential Training



BOSCH
Invented for life

Electrical Maintenance

Training objectives

- ▶ Work safely during electrical maintenance
- ▶ Understand the electrical documentation
- ▶ Get familiar with the electrical maintenance tasks and preventive maintenance principles
- ▶ Understand the control systems and the corresponding automation hierarchy
- ▶ Learn about the equipment settings and the fundamental product parameters
- ▶ Awareness of the situation and ability to evaluate risks (safety, quality)
- ▶ Communicate effectively with the Bosch hotline for fast support

Content

General information about the electrical maintenance training module

Training plan, objectives, documentation

Safety

Explanation of safety regulations and systems, Hardware and software circuits

Electrical components

Components in the control-cabinet, power supply, Installed sensors and actuators in the field, change of defect components

Electrical systems and functions

Details of electrical functions and interfaces

Control systems, automation system structure

Overview of control system, purpose and function of control system components, drive concept and applied drive technology

Backup & Recovery

Back up and restore of programs / parameter settings

Trouble shooting

Procedure for eliminating faults, diagnosis systematic

Maintenance/Spare parts

Hard- and software configuration, spare parts ordering process

Conclusion

Summary and training evaluation

Requirements

Operating fundamentals, know-how about Format Size Change

Related training modules

Electrical maintenance, Technical troubleshooting, Set up of new product

Target group

Mechanical maintenance personnel, technicians

Bosch Packaging Academy

Essential Training



BOSCH
Invented for life

Format size change

Training objectives

- ▶ Understand the safety principles of a format size change
- ▶ Ability to change the format size
- ▶ Check and control the format size after changeover
- ▶ Be able to ramp up

Content

General information about the format size training module

Training plan, objectives, documentation

General information about the format sizes

Format labeling, format parts and recipe handling, size settings

Safety

Explanation of safety regulations and systems

Format size change

Format size change procedure

Format size change control

Equipment ramp up

Conclusion

Summary and training evaluation

Requirements

Operating fundamentals

Related training modules

Mechanical maintenance, Electrical maintenance

Target group

Operators, setters, mechanical maintenance staff, production supervisors



Technical Troubleshooting

Training objectives

- ▶ Execute an in-depth technical troubleshooting
- ▶ Know procedures to execute a systematic, team-oriented fault diagnosis
- ▶ Situation awareness and evaluate complex risk scenarios (safety, quality, process)
- ▶ Communicate effectively with the Bosch hotline service for fast support

Content

General information about the troubleshooting training module

Training plan, objectives, documentation

Effective procedures to perform a complex technical troubleshooting

Presentation of different methods based on technical examples

Failure diagnosis

Apply the procedures in working groups based on examples, signal tracing with the help of the technical documentation

Troubleshooting based on built-in failures

Conclusion

Summary and training evaluation

Requirements

Mechanical maintenance and/or electrical maintenance

Related training modules

Electrical PLC training, Set up of new product

Target group

Mechanical maintenance staff, electrical maintenance staff, technicians, automation technicians, production supervisors



Set up of new product

Training objectives

- ▶ Implement a new product into the production system within the machine limits
- ▶ Adjust the fundamental settings and parameters to the new product
- ▶ Be able to run an optimization process to find the parameter set which fits best
- ▶ Situation awareness and evaluation of complex risk scenarios (safety, quality)

Content

General information about the training module

Training plan, objectives, documentation

In-depth view on product parameters and machine settings

Mechanical settings and their influence on quality, recipe management, generation of new recipes

Demonstration and hands-on adjustment in the field

Conclusion

Summary and training evaluation

Requirements

Mechanical maintenance and/or electrical maintenance

Related training modules

Electrical PLC training, pneumatic training, technical troubleshooting

Target group

Mechanical maintenance staff, electrical maintenance staff, technicians, automation technicians, production supervisors

Bosch Packaging Academy

Specific Training



BOSCH
Invented for life

Electrical PLC Training

Training objectives

- ▶ Understand the PLC Hardware environment and communication interfaces
- ▶ Know the structure of the Bosch software application
- ▶ Get a thorough understanding of the software structure
- ▶ Capability to troubleshoot the system
- ▶ Situation awareness and evaluation of complex risk scenarios (safety, quality, process)

Content

General information of the training module

Training plan, objectives, documentation

Safety

Electrical safety and hardware architecture

Explanation of the PLC hardware environment and the corresponding naming convention

Establishing a communication with the PLC system

Structure of the Bosch software application

Explanation of the Bosch Packaging Systems Software Concept, guidelines and programming procedures

Software system troubleshooting

Understand errors handling within the software

Fault finding, fault evaluation and elimination

Completion

Summary and training evaluation

Requirements

Operating fundamentals, electrical Maintenance, basic PLC knowledge, computer with installed corresponding software

Related training modules

Servo Training, Technical troubleshooting

Target group

Electrical maintenance staff, technicians, automation technicians

Bosch Packaging Academy

Specific Training



BOSCH
Invented for life

Servo Training

Training objectives

- ▶ Understand the servo control system and the corresponding automation hierarchy
- ▶ Be familiar with the components, their functions and the communication interfaces
- ▶ Know the structure of the Bosch software application
- ▶ Get a thorough understanding of the software structure
- ▶ Be able to diagnose and troubleshoot the application
- ▶ Situation awareness and evaluation of complex risk scenarios (safety, quality, process)

Content

General information about the training module

Training plan, objectives, documentation

Safety

Electrical safety and hardware architecture
Explanation of the servo system hardware environment
Establishing a communication with the Servo system

Structure of the Bosch software application

Explanation of the Bosch Packaging Systems Software Concept, guidelines and programming structures

Software system troubleshooting

Understand error handling within the software
Fault finding, fault evaluation and elimination

Conclusion

Summary and training evaluation

Requirements

Operating fundamentals, Electrical Maintenance, basic PLC knowledge, computer with installed corresponding software

Related training modules

Electrical Maintenance, Technical Troubleshooting, Electrical Training

Target group

Electrical maintenance personnel, technicians, automation technicians

Bosch Packaging Academy

Specific Training



BOSCH
Invented for life

Pneumatic Training

Training objectives

- ▶ Identify, evaluate and correct errors in electro pneumatic components and systems
- ▶ ISet-up and commission pneumatic valve terminal systems
- ▶ IAcquire know-how about the integration of valve support systems in field bus-dominated controls
- ▶ IGain the ability to avoid, identify and correct weak points

Content

Pneumatic know how

Refresh and extend existing knowledge about pneumatics

Systematic Troubleshooting

Gain knowledge about the implementation and documentation of systematic troubleshooting

Inspection and maintenance

Implement the four columns of servicing (inspection, maintenance, repair and improvement), maintenance management

Field bus interface

Field bus systems in electro pneumatic systems

Failure handling and elimination

Development and application of suitable troubleshooting strategies

Conclusion

Summary and training evaluation

Requirements

Basic knowledge of pneumatics

Related training modules

Mechanical Maintenance, Electrical Maintenance, Technical Troubleshooting

Target group

Mechanical/Electrical maintenance personnel, technicians, automation technicians