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
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
### 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

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
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
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
# Pneumatic Training

## Training objectives
- Identify, evaluate and correct errors in electro pneumatic components and systems
- Set-up and commission pneumatic valve terminal systems
- Acquire know-how about the integration of valve support systems in field bus-dominated controls
- Gain 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