

Netstal-Maschinen AG

PET-LINE

Instruction Courses



SWISS MADE

Training Program for

Basic course part 1

1. Introduction
2. Structure of an injection moulding machine
 - Drive
 - Mould closing unit
 - Plasticizing unit
3. Operation
 - Screen pages
 - Programs and functions
 - Programming the injection side, mould protection
 - Programming the injection side, v-p switch over
 - Programming the removal unit
 - Monitoring
4. Preform removal unit
 - Structure and functioning
 - Operation
 - Safety
 - Trouble shooting
5. Notes on maintenance
 - Machine
 - Removal unit
 - Mould
 - Trouble shooting
6. PET material
 - Polyethylene terephthalate
 - Drying and storage of PET
7. Practical exercises
 - Starting and stopping the system
 - Drying and storage of PET-LINE
8. Final discussion

Duration of the course

3½ days

Objective of the course

Operation of a PET-LINE including the peripheral devices. To provide an insight in the application technology.

Target group

Production managers, application technicians, setters and shift foremen who are keen to acquire knowledge in the operation of our PET-LINE.

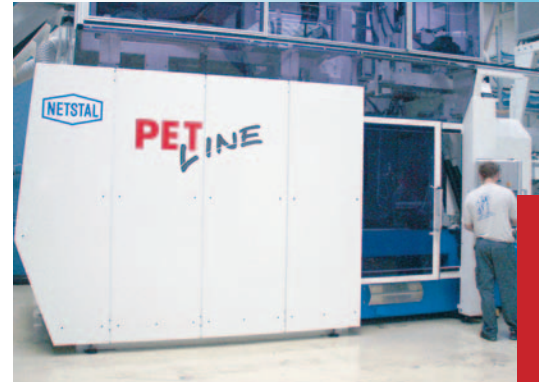
Demands on the participants

A technical professional training with experience in injection moulding is necessary to participate in this demanding course.

Training Program for

Basic course part 2

1. Extension stages
 - Mould temperature control
 - Measurement and closed loop control of clamping force
 - V-p switch-over
 - Mould protection
 - Monitoring
2. Process control
 - Setting strategies
 - Evaluation and recordings
 - Process graphs
 - Production protocol
3. Practical exercises
 - Optimization and recording as well as evaluation of parameters determining the quality
4. Quality preforms
 - Determination of the quality/ trouble-shooting
5. Chiller
 - Safety
6. Mould
 - Safety
 - Technical data and description
 - Transport, mounting, putting into operation, taking down, storage
7. Maintenance jobs
 - Machine
 - Robot
 - Mould
 - Dryer
8. Final discussion



Modern Training Centre

The Training Centre Näfels provides first-class overall conditions for the theoretical and practical training of your employees.

The generously laid out, well-lit theory rooms are equipped with the latest infrastructure and offer interactive tuition possibilities. Current model ranges are available for practical training.

Last but not least, the cafeteria in the Training Centre encourages a good exchange of experiences during recreation periods.

Duration of the course

3½ days

Objective of the course

Extension on basic course part 1, deeper basic knowledge.

Target group

Production managers, application technicians, setters and shift foremen who are keen to acquire knowledge in the operation of the peripheral devices of the PET-LINE.

Demands on the participants

A technical professional training with experience in injection moulding and the successful completion of the basic PET-LINE course part 1 are necessary to participate in this course.

Training Program for Advanced users

1. Extension stages
 - Mould temperature control
 - Measurement and closed loop control of clamping force
 - V-p switch-over
2. Process control
 - Setting strategies
 - Evaluation and recording
 - Graphic presentation of the process
3. Practical exercises
 - Optimization, recording and evaluation of quality-influencing parameters
4. Quality preforms
 - Determination of quality/elimination of nonconformities
5. Quality assurance
 - Configuration of the Q supervision
 - Function of startup and shut-down behaviour
 - Protocols of the process
 - Process statistics
6. Monitoring of the process
 - Production control
 - Optimization of a production in progress
 - Activation of the monitoring function
 - Safety against manipulation
 - Variables influencing the monitored process parameters
7. Final discussion

Duration of the course

3½ days

Objective of the course

Independent operation of a PET-LINE and acquisition of the knowledge required to suitably optimize the production sequences.

Target group

Moulding shop managers, application technicians, setters and shift foremen who have good previous knowledge of how to operate injection moulding machines.

Demands on the participants

Successful completion of the basic course part 1 or very good previous knowledge of PET-LINE processing are prerequisites to attend this course.

Training Program for Service and maintenance

1. General
 - Basic functions
 - Preparatory work
 - Cleaning
 - Safety measures

2. Maintenance schedule
 - Machine
 - Hydraulic system
 - Cooling system
 - Nitrogen system
 - Lubrication
 - Electrical control/equipment
 - Accident prevention devices
 - Vacuum system
 - Mould
 - Preform removal unit

3. Final discussion



Duration of the course

3½ days

Objective of the course

Specific application of the maintenance schedule at all levels of the system.

Target group

This course is primarily intended for all employees who are engaged in servicing and maintaining the PET-LINE.

Demands on the participants

A basic knowledge of the structure and functioning of a PET-LINE system is prerequisite to attend this course.

Electric and diagnostic

1. Introduction
 - Basic functions, sequence diagram, operation, designation concept
2. General
 - Preparatory tasks
 - Safety measures
3. Setup and diagnostic
 - Brief overview and structure of the electrical control
 - Brief overview and structure of the hydraulic control
 - Alarm messages
 - Supplies/power supply units
 - Sequences and functions
 - Disturbance analysis and trouble shooting
 - Disturbance analysis frequency converter
 - Brief overview and structure of the pneumatics
 - Systematic search in case of disturbances in the system
4. Settings
 - Stroke measuring systems
 - Proportional stages
 - Closed loop control circuits
5. Final discussion

Duration of the course

3½ days

Objective of the course

Correct interpretation and translation of alarm messages. To diagnose disturbances by means of systematic analysis of disturbances.

Target group

This course is primarily intended for all employees who are setting up the PET-LINE and making diagnoses in case of disturbances.

Demands on the participants

A basic knowledge of the structure and functioning of an injection moulding machine and a good knowledge of electrics are prerequisite to attend this course.

Conditions for participation / Contact

Duration of the courses

Each course runs for 3½ days with start on Tuesday at 9 a.m. and finish on Friday at noon.

Costs

For the participation in our training courses at Näfels works we charge a course fee of CHF 1,900.– per person. The number of participants per course is limited to 6 people.

For company-specific courses at Näfels works we charge a fixed course fee of CHF 8,600.– per course.

There is also a possibility of holding training courses at your premises. On request we shall be pleased to send you our quotation for such special course.

Included in the course fee is:

The care of qualified instructors throughout the course, a detailed course documentation and learning material, lunch on all course days and all transfers between hotel and course rooms.

To be paid by the participants:

Cost of travel, hotel room, breakfast, dinner and possible additional costs of drinks and telephone calls. Bed and breakfast in a good middle-class hotel in our region cost between CHF 95.– and 130.– a night.

We shall be pleased to make the necessary hotel reservations for you. The invoice for the course fee will be sent to you after completion of the course. The participants are requested to settle their hotel bill prior to their departure.

Cancellation

When a registered person cancels a course the following conditions apply:

- No fee is charged in case of withdrawal until 4 weeks before course start.
- If the cancellation reaches us within the last 4 weeks before the course is due to start, we invoice 50% of the course fee.
- If the cancellation reaches us within the last 2 weeks before the course is due to start, we invoice 100% of the course fee.

Contact

For further information and course dates please contact our training department at the headquarters:

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Values and vision

From the very outset, our core expertise has always been the construction of high-performance, high-precision injection moulding machines. We have been exclusively devoting our efforts to the development and manufacture of these high-tech products for the global plastics market for over six decades.

Thanks to its vast wealth of experience, Netstal has continually proved itself as a pioneer to the entire industry and has repeatedly set new standards with groundbreaking innovations.

All Netstal machines impress with their precision, speed, reliability, user-friendliness and cost efficiency.

CAP

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MED

TEC

PET

NSC



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