



Human and machine Success through knowledge

Training Program 2012
Machine for universal application

Engineering Excellence



Your advantages

Why training?

An investment in target-oriented training of your personnel will soon pay dividends in the form of a better utilization of your Netstal machines. Even minor reductions of cycle time or machine downtime without detriment to the quality can lead to a major improvement of the economic efficiency.

Motivation and specialised knowledge

Motivation and specialised knowledge of your technical, production and maintenance staff are prerequisites for the benefits of Netstal machines to bear in full. In our training courses we provide your professionals with the know-how and stimulation which enables them to get the optimum out of the equipment they are entrusted with.

We are flexible

We can offer you courses which are customised to your particular needs and circumstances. For example in cases when you want several of your employees to receive training at the same time, or if you wish the course content to be adapted to your particular range of products or production methods. It may even be possible to arrange for specific training at your premises and/or in another language. In the layout of our standard courses we paid attention to a good balance between theoretical and practical tuition. Part of this are brief presentations with audio-visual support and interactive learning for every participant as well as the practical training on the machines in small groups.

Training in Näfels and elsewhere

In addition to the scheduled courses at the Näfels works we also run instruction courses at our subsidiaries in France and in the USA.

We shall be pleased to answer any questions you may have concerning our training program. To do so, please get in touch with our Training Department in Näfels.

If you are interested in training courses in USA or France please contact the competent Netstal subsidiary directly. (You can find contact details on page 13.)



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.

Human meets machine

Our skilled worker offensive – your success

Dear Ladies and Gentlemen,

Intelligent solutions and systems are gaining more and more ground in modern machine technology. But this intelligence is still based on human expertise.

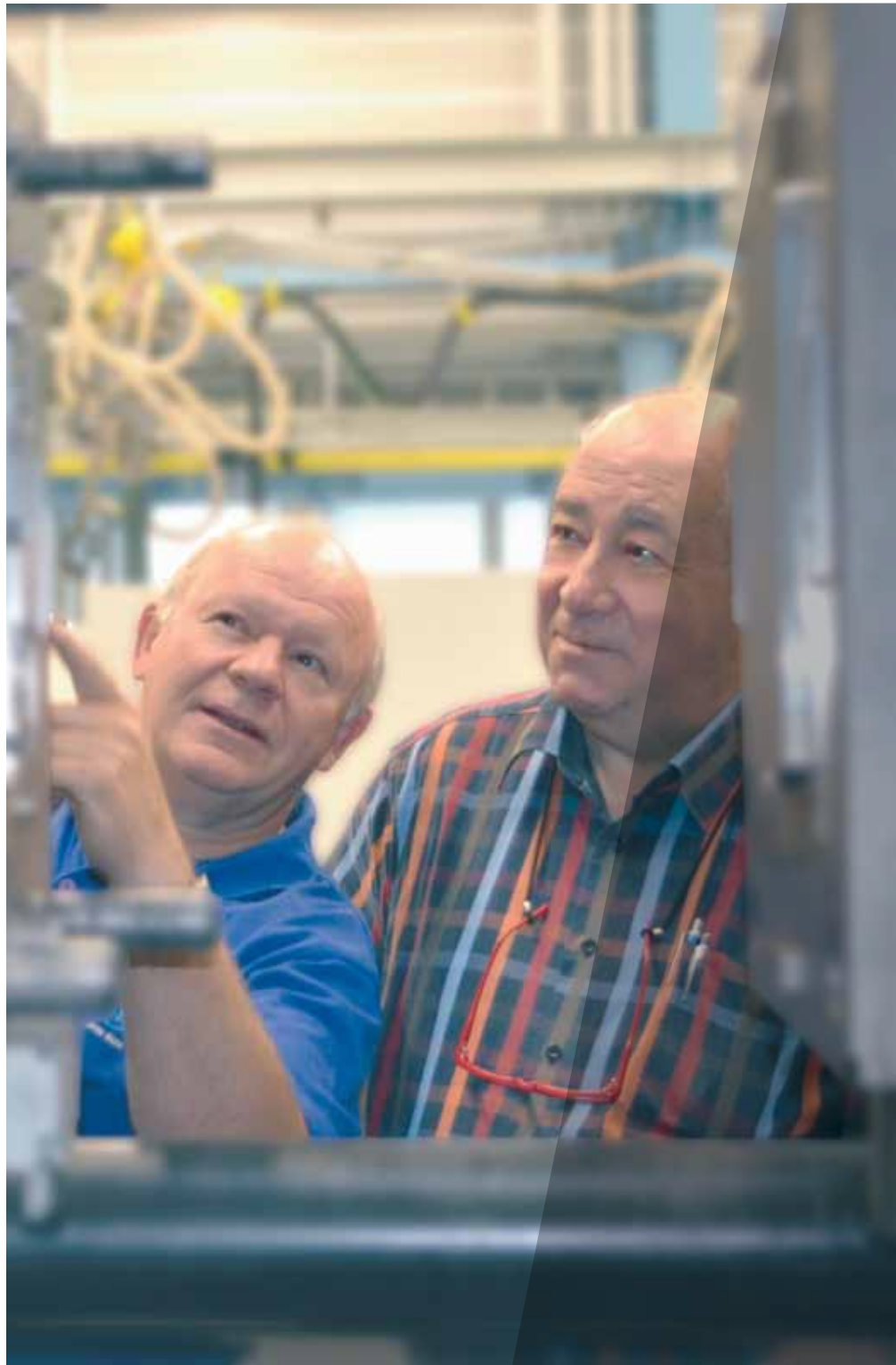
We train you and your employees so that you are able to make the most of our injection moulding machines. As a rule, the more you engage people during the learning process, the better able they are to retain what they have learned afterwards. Our courses therefore place great emphasis on practice and complements this perfectly with the theory behind it. The theoretical part of the course takes place in specially equipped classrooms where multimedia presentations are held. The practical part is carried out in small groups on training machines in a separate machine room.

We take the time to answer individual questions and provide your employees with the detailed expertise that they need to use your Netstal injection moulding machine.

Your success is our goal, and our ideally suited training courses are a key prerequisite for this.

We look forward to meeting you and your employees!

Your
Training Team



Your guide to success

The right training

You can find detailed information regarding our courses on the following pages:

AWT DSP, AWT aXos

Fundamentals of injection moulding

3½ days

→ Page 5



Syn, EL-DSP, EV, EL-hyb

Basic course

3½ resp. 4 days

→ Page 6



Syn, EL-DSP, EV, EL-hyb

Production optimisation and quality assurance

3½ days

→ Page 7



Syn, EV, EL-hyb

Maintenance mechanic and hydraulic

3½ resp. 2 days

→ Page 8



Syn, EL-DSP, EV, EL-hyb

Electrical system and diagnostics

3½ days

→ Page 9



EL-DSP, EV

Switch over

2 days

→ Page 10





Training Program for Fundamentals of injection moulding

Objective of the course

Basic knowledge of injection moulding, injection moulds, processing materials is taught and process control.

Theme

Fundamental history

- History
- Definition
- Main components / functioning principles
- Clamping unit / Plasticising unit and their tasks
- Actual moulding / Cooling
- Specialist terms

Fundamentals of plastic materials

- Production and conditioning of plastic materials
- Thermoplastics and their properties
- Specialist terms
- Material data sheets
- Identification of plastic materials

Knowledge of machinery

- Fundamentals of machine operation

Mould and gating techniques

- Principles and structure
- Gating techniques
- Ejection systems
- Cooling and temperature control
- Venting techniques
- Special executions
- Filling patterns

Application examples

Final discussion

Target group

Moulding shop managers, machine operating personnel, setters, shift foremen and newcomers to the plastic injection moulding technology (thermoplastic) who want to acquire a basic knowledge of plastics processing and injection moulding.

Prerequisites

A knowledge of plastics and injection moulding machines is not prerequisite for a participation on this course.

Duration

3½ days

Costs

CHF 1600 plus VAT per participant

Dates AWT (DSP)

Language	Code	Date
German	AWT DSP 1	27.03.-30.03.2012
	AWT DSP 3	13.11.-16.11.2012
English	AWT DSP 2	21.08.-24.08.2012
French		On request

Dates AWT (aXos)

Language	Code	Date
German	AWT aXos 1	28.02.-2.03.2012
	AWT aXos 3	28.08.-31.08.2012
English	AWT aXos 2	22.05.-25.05.2012
	AWT aXos 4	11.12.-14.12.2012
French		On request



Training Program

Basic course

Objective of the course

Basic knowledge of the structure and operation of an injection moulding machine.

Theme

Introduction

Structure

- Machine frame
- Drive
- Clamping unit
- Injection unit
- Control

Operation

- Machine operation
- Screen structure and navigation
- Parameterisation

Programs and functions

- Closing and opening movements
- Mould safety device
- Temperatures
- Metering program
- Injection program, V/P-switch over
- Hold pressure program
- Basic functions, graphic
- Mould auxiliary controllers
- Periphery
- Movements of the injection unit

Practical exercises

- Practical exercises on the above-mentioned topics are made in groups; including (if desired by the participants) mounting and taking down of an injection mould

Maintenance instructions

Final discussion

Target group

Moulding shop managers, machine operating personnel, setters, shift foremen and plastics technologists who are interested in acquiring the know-how needed to operate moulding machines.

Prerequisite

No or only a minimal knowledge of moulding machines is required for this course.

Duration

SynErgy, ELION, EVOS

3½ days for SynErgy, EVOS and ELION

ELION hybrid with aXos

4½ days for ELION hybrid with aXos

Costs

SynErgy, ELION, EVOS

CHF 1600 plus VAT per participant

ELION hybrid with aXos

CHF 1800 plus VAT per participant

Dates SynErgy

Language	Code	Date
German	Syn 1	24.01.-27.01.2012
	Syn 5	28.02.-02.03.2012
	Syn 11	08.05.-11.05.2012
	Syn 18	14.08.-17.08.2012
	Syn 22	25.09.-28.09.2012
English	Syn 26	20.11.-23.11.2012
	Syn 9	17.04.-20.04.2012
French	Syn 20	11.09.-14.09.2012
	Syn 12	05.06.-08.06.2012

Dates ELION

Language	Code	Date
German	EL-DSP 2	24.01.-27.01.2012
	EL-DSP 8	24.04.-27.04.2012
	EL-DSP 11	22.05.-25.05.2012
	EL-DSP 14	26.06.-29.06.2012
English	EL-DSP 24	13.11.-16.11.2012
	EL-DSP 12	12.06.-15.06.2012
French	EL-DSP 7	20.03.-23.03.2012

Dates EVOS

Language	Code	Date
German	EV 1	31.01.-03.02.2012
	EV 9	05.06.-08.06.2012
	EV 17	06.11.-09.11.2012
English	EV 4	13.03.-16.03.2012
French	EV 8	29.05.-01.06.2012

Dates ELION hybrid (aXos)

Language	Code	Date
German	EL-hyb 1	06.02.-10.02.2012
	EL-hyb 3	19.03.-23.03.2012
	EL-hyb 5	30.04.-04.05.2012
	EL-hyb 6	02.07.-06.07.2012
	EL-hyb 9	17.09.-21.09.2012
English	EL-hyb 14	19.11.-23.11.2012
	EL-hyb 2	27.02.-02.03.2012
French	EL-hyb 11	15.10.-19.10.2012
	EL-hyb 4	26.03.-30.03.2012



Training Program

Production optimisation and quality assurance

Objective of the course

To be able to work with moulding machines independently. Acquisition of the knowledge required for an appropriate optimisation of the production sequences.

Theme

Introduction

Extension stages

- Mould temperature control
- Measurement and closed loop control of clamping force
- Extended mould auxiliary controls
- V/P switch-over

Process management

- Setting strategies
- Evaluations and recordings
- Process graphics

Practical exercises

- Optimisation, recording and evaluation of parameters determining the quality

Quality assurance

- Configuration of the Q-supervision
- Function of startup and switch-off behaviours
- Process protocolling
- Process Statistics
- Trenddiagram

Process supervision

- Production control
- Optimisation of a production in progress
- Activation of the supervision function with sorting out of faulty parts
- Safety against manipulation
- Variables influencing the monitored process parameters

Maintenance instructions

Final discussion

Target group

Moulding managers, application technicians, programmers and shift foremen with a good basic knowledge in the operation of injection moulding machines.

Prerequisite

Prerequisite to attend this course is the completion of the basic course for the relevant model range.

Duration

3½ days

Costs

CHF 1600 plus VAT per participant

Dates SynErgy

Language	Code	Date
German	Syn 2	07.02.-10.02.2012
	Syn 8	27.03.-30.03.2012
	Syn 14	19.06.-22.06.2012
	Syn 19	04.09.-07.09.2012
English	Syn 24	06.11.-9.11.2012
	Syn 7	20.03.-23.03.2012
French	Syn 15	26.06.-29.06.2012
	Syn 3	07.02.-10.02.2012
	Syn 13	12.06.-15.06.2012

Dates ELION

Language	Code	Date
German	EL-DSP 3	14.02.-17.02.2012
	EL-DSP 15	03.07.-06.07.2012
	EL-DSP 20	25.09.-28.09.2012
English	EL-DSP 22	23.10.-26.10.2012
French	EL-DSP 6	13.03.-16.03.2012

Dates EVOS

Language	Code	Date
German	EV 3	06.03.-9.03.2012
	EV 19	11.12.-14.12.2012
English	EV 14	28.08.-31.08.2012
French	EV 7	22.05.-25.05.2012

Dates ELION hybrid (aXos)

Language	Code	Date
German	EL-hyb 10	09.10.-12.10.2012
	EL-hyb 15	04.12.-07.12.2012
English		On request
French	EL-hyb 12	23.10.-26.10.2012



Training Program

Maintenance mechanic and hydraulic

Objective of the course

Specific application of the maintenance schedule at all levels, correct interpretation of and reaction to alarm messages.

Theme

Introduction

- Basic functions, sequence diagram, programming, designation concept

General

- Preparatory work
- Safety measures
- Manual operation
- Maintenance schedule

Hydraulic

- Hydraulic components/symbols
- Overview and structure of the hydraulic control
- Sequences and functions
- Analysis of disturbances and trouble-shooting
- System messages

Adjustments

- Levelling in general
- Nitrogen system
- Taking down the screw
- Cylinder of clamping unit*
- Installation height adjustment/Platen parallelity*
- Accident prevention devices
- Sliding pads*

Final discussion

Target group

This course is primarily intended for all employees who are mainly engaged in the maintenance of SynErgy, EVOS or ELION hybrid machines.

Prerequisite

A basic knowledge of the design and functioning of an injection moulding machine.

Duration

SynErgy, ELION hybrid

3½ days

EVOS

2 days

Costs

SynErgy, ELION hybrid

CHF 1600 plus VAT per participant

EVOS

CHF 1400 plus VAT per participant

Dates SynErgy

Language	Code	Date
German	Syn 4	21.02.-24.02.2012
	Syn 16	10.07.-13.07.2012
	Syn 23	02.10.-05.10.2012
English	Syn 10	24.04.-27.04.2012
	Syn 25	13.11.-16.11.2012
French	Syn 27	27.11.-30.11.2012

Dates EVOS

Language	Code	Date
German	EV 5	17.04.-18.04.2012
English	EV 10	26.06.-27.06.2012
French		On request

Dates ELION hybrid (aXos)

Language	Code	Date
German	EL-hyb 13	06.11.-09.11.2012
English	EL-hyb 7	14.08.-17.08.2012
French		On request

* only for SynErgy



Training Program

Electrical system and diagnostics

Objective of the course

Specific application of the maintenance schedule at all levels, correct interpretation of and reaction to alarm messages.

Theme

Introduction

General

- Technical data
- Preparatory work
- Cleaning
- Maintenance schedule
- Manual operation
- Safety measures
- Transport and installation
- Overview of the operating instructions

Machine control

- Structure of the electric diagrams
- Structure of the hydraulic diagrams*
- Block diagram
- Overview and structure of the control
- Location of the components "what is where?"
- Drives
- Functions
- Cooling systems (primary and secondary)

Clamping unit

- Structure and function
- Adjustments
- Parameterisation

Injection unit

- Structure and function
- Adjustments
- Parameterisation

Safety circuit

- Structure and concept
- Diagnostic tool

System messages

- Systematic trouble-shooting and correction

Final discussion

Target group

The course is primarily aimed at electrically competent employees who are mainly concerned with the maintenance of injection moulding machines.

Prerequisite

Maintenance personnel with in-depth knowledge of electrics/electronics.

Duration

3½ days

Costs

CHF 1600 plus VAT per participant

Dates SynErgy

Language	Code	Date
German	Syn 6	13.03.-16.03.2012
	Syn 17	17.07.-20.07.2012
	Syn 28	04.12.-07.12.2012
English	Syn 29	18.12.-21.12.2012
French	Syn 21	18.09.-21.09.2012

Dates ELION

Language	Code	Date
German	EL-DSP 5	06.03.-09.03.2012
	EL-DSP 16	10.07.-13.07.2012
	EL-DSP 18	11.09.-14.09.2012
English	EL-DSP 13	19.06.-22.06.2012
French	EL-DSP 1	17.01.-20.01.2012
	EL-DSP 26	04.12.-07.12.2012

Dates EVOS

Language	Code	Date
German	EV 12	14.08.-17.08.2012
English	EV 11	03.07.-06.07.2012
French	EV 15	02.10.-05.10.2012

Dates ELION hybrid (aXos)

Language	Code	Date
German	EL-hyb 8	04.09.-07.09.2012
English		On request
French		On request

* only for hydraulically operated additional injection units



Training Program

Switch over

SynErgy – ELION / SynErgy – EVOS

Objective of the course

Parameterisation of an ELION resp. EVOS machine on your own

Theme

Introduction

Structure

- Machine frame
- Drive
- Clamping unit
- Injection unit
- Control

General

- Machine operation
- Stroke learning
- Operating panel
- Operating modes

Programs and functions*

- Drive
- Closing and opening movements
- Mould safety device
- Metering program
- Injection program, V/P-switch over
- Hold pressure program
- Basic functions, graphic
- Mould auxiliary controllers
- Periphery
- Movements of the injection unit

Practical exercises

- Parameterisation of an ELION resp. EVOS machine

Maintenance instructions

Final discussion

* if required

Target group

Moulding shop managers, application technicians, setters and shift foremen.

Prerequisite

A good to very good prior knowledge of how to operate Netstal SynErgy machines.

Duration

2 days (Tuesday and Wednesday)

Costs

CHF 1400 plus VAT per participant

Dates SynErgy – ELION

Language	Code	Date
German	EL-DSP 4	21.02.-22.02.2012
	EL-DSP 10	08.05.-09.05.2012
	EL-DSP 17	14.08.-15.08.2012
	EL-DSP 21	02.10.-03.10.2012
	EL-DSP 25	27.11.-28.11.2012
English	EL-DSP 27	11.12.-12.12.2012
	EL-DSP 9	01.05.-02.05.2012
	EL-DSP 19	18.09.-19.09.2012
French	EL-DSP 23	06.11.-07.11.2012
		On request

Dates SynErgy – EVOS

Language	Code	Date
German	EV 2	14.02.-15.02.2012
	EV 6	01.05.-02.05.2012
	EV 13	21.08.-22.08.2012
	EV 16	23.10.-24.10.2012
English	EV 18	20.11.-21.11.2012
French		On request

Injection moulding machines **Registration for Netstal training course**

Phone: +41 55 618 62 00

E-Mail training@netstal.com

Writing: Netstal-Maschinen AG
Documentation/training
Tschachenstrasse
8752 Näfels/Schweiz

Fax: +41 55 618 66 18
See reverse side for fax template

Internet: www.netstal.com



Fax template

Registration for Netstal training course

Personal details

Company		Contact person
Street, No.		Phone
ZIP	Location	Telefax
Country		Email-Address

Instruction course

Code of the course	Date
Participant (First name/Surname)	

Arrival

Car Train

Pick up at the train station in Ziegelbrücke? Yes No Time

Want to book a hotel through Netstal?

Yes No

Arrival date	Departure date	Name of the hotel (optional)
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City / date

Signature



General remarks

Conditions for participation

1. Please send registration forms to:

Netstal-Maschinen AG

Tschachenstrasse, 8752 Näfels, Schweiz

Phone: +41 55 618 62 00

Fax +41 55 618 66 18

E-Mail training@netstal.com

Netstal-Machinery, Inc.

Jackson Road 57, MIDDLESEX

01434 DEVENS, USA

Phone +1 9787725100

Fax +1 9787725151

E-Mail training@netstal-usa.com

Netstal-France SA

Les Portes de la Forêt

Allée du Clos des Charmes

77090 Collégien, France

Phone: +331 60 17 74 10

Fax +331 60 17 87 28

Mobile +336 18 05 70 72

E-Mail fabrice.sansone@netstal.fr

2. Registration and registration period

By registering, the participant accepts the conditions of participation. To register, please send us the attached registration form by fax.

Registration forms are reviewed in the order in which they are received. Latest date for a registration is 5 weeks before the course starts. We recommend to register early because, only a limited number of participants can attend and there is a strong demand for some courses. Immediately after the reception of your registration we shall send you our provisional confirmation. You will get our firm and final confirmation about 2 weeks before the course is due to start. The agreement is concluded when registration confirmation is received.

The invoice for the course fee will be sent after completion of the course. The participants are requested to settle their hotel bill prior to their departure.

3. Number of participants

Part of the courses involves carrying out practical exercises with participants. A restriction is therefore placed on participant numbers to ensure the success of the course.

The number of participants per course is limited to 6-8 people, resp. 12 people if the course is doubly led.

4. Services

Participants receive both theoretical and practical training from course instructors. Every participant receives course-specific documents at the start of the course and a certificate after completion. The use of the latest technical resources during training is guaranteed.

5. Costs

Course costs are listed alongside individual course descriptions. For company-specific courses at Näfels works we charge a fixed course fee of CHF 1850.- per day with max. 6-8 participants. 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 courses.

The course fees cover care by qualified instructors throughout the course, detailed course documentation and learning material, beverages for the break, lunch on all course days and all transfers between hotel and course rooms.

Costs of travel, overnight stay, breakfast, dinner and possible additional costs like drinks and telephone calls are paid by the participant.

6. Room reservation

It is possible to book a room through Netstal. If you would like to do so, please indicate this when registering for your course. The customer is responsible for cancelling a hotel room reservation himself/herself. Any cancellation fees imposed by the hotel are settled by said customer directly.

7. Rescission

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

- No fee is charged in case of withdrawal until 4 weeks before course starts.
- 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.

8. Language

The standard languages are German, English and French. Other languages on request.

9. Conditions of payment

Participants are charged a lump sum amount for individual courses. There is no discount for early payment. Please see relevant course content for course prices. All prices are net plus applicable VAT. Please state the course code in all correspondence and bank transfers. Participation fees are due for payment by the date specified on the invoice and should be paid quoting the invoice number.

10. Course cancellations and changes

Netstal reserves the right to cancel, postpone or merge advertised courses in the case of low participant numbers, course instructor absence, acts of God or any important reasons for which Netstal cannot be held accountable. Participants are informed promptly and any payments that have already been made are refunded. Further claims are excluded, irrespective of their nature, unless the organiser is deemed guilty of wilful misconduct or gross negligence. The organiser is entitled to replace trainers or postpone schedules with just cause, e.g. trainer absence due to illness, provided that this is deemed acceptable by the course participants.

11. Liability

The organiser is only liable for wilful misconduct and gross negligence. Liability for the breach of major contractual obligations and negligence causing death or personal injury remains unaffected. In the event of a breach of the aforementioned contractual obligations, claims for damages are limited to damages that are typically foreseeable.

12. Copyright

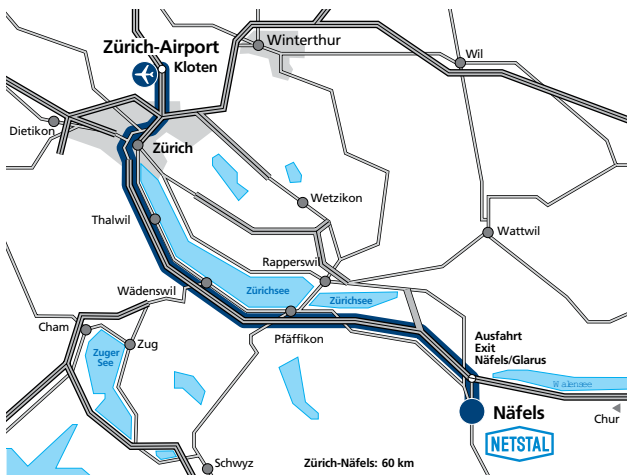
Work documents and computer software used are protected by copyright. The reproduction of course documents for unauthorised purposes and the disclosure, use or distribution of this material is not permitted to any third parties. Any breach or infringement will result in liability for damages.

13. Choice of law and jurisdiction

For all disputes with regard to and in connection with the legal relationship that exists between the two contractual parties, Swiss law shall apply. The agreed place of jurisdiction is Glarus Nord.

How to find us

Transport connection Netstal-Maschinen AG

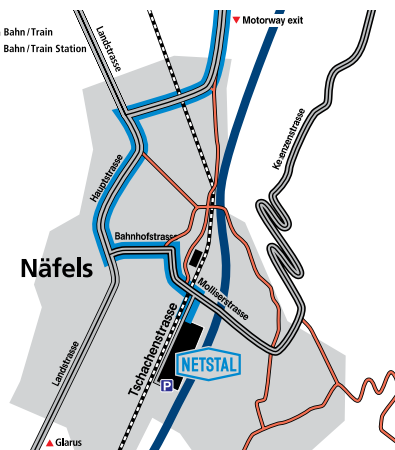


Journey from the airport by train

Train S2 leaves from Zurich Airport every 30 minutes to Ziegelbrücke without need to change trains. There you have to take the train which goes to Näfels. On request we shall be pleased to pick you up in Ziegelbrücke.

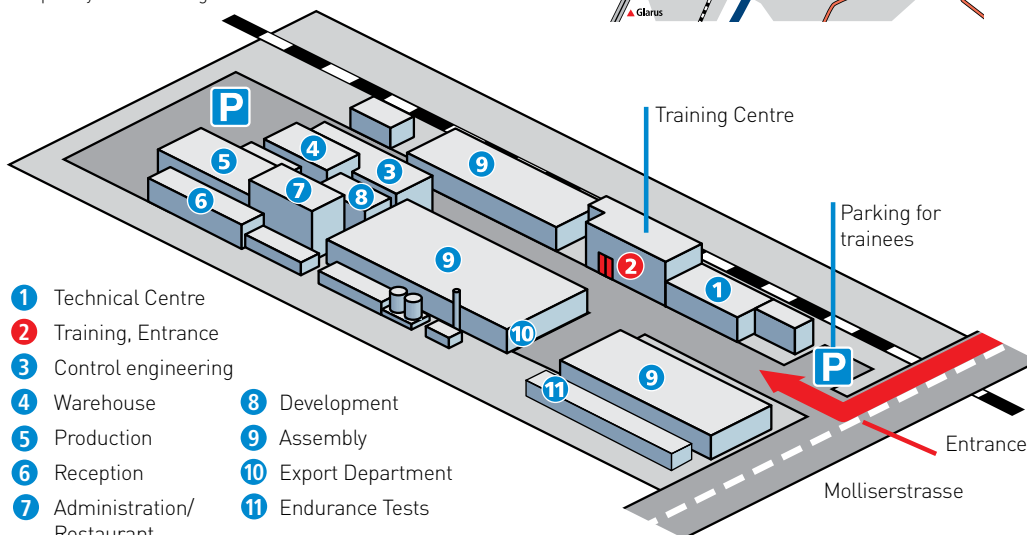
Journey from the airport by car

Drive direction Zürich. When in Zürich centre take the motorway A3 direction Chur and leave it at the Exit Niederurnen/Näfels (approx. 40 minutes from Zürich). Continue as far as the first traffic lights and then turn left direction Näfels/Glarus. At the big intersection in Näfels (large old building with painted shutters diagonally opposite you), turn left direction Mollis. Pass over the railway crossing and then immediately turn right. Now you are already on Netstal's premises. Please refer also to the site plan below.



Netstal-Maschinen AG site plan

Please note that the whole Netstal company plant is completely non-smoking from 2012.



Coming from Austria

(Buchs-Sargans) it is just as easy to reach Ziegelbrücke railway station. If you travel by car, take the A3 from Chur in the direction of Zürich and leave it at the Exit Niederurnen/Näfels.

Accommodation

Suggested hotels

Näfels and surrounding area

Hotel Schützenhof

Oberdorf 8

8752 Näfels

Phone +41 55 612 11 37

Fax +41 55 612 43 68

Price for single room incl. breakfast

CHF 90.00

Price for double room incl. breakfast

CHF 160.00

linth-arena sgu

Oberurnerstrasse 14

8752 Näfels

Phone +41 55 618 70 70

Fax +41 55 618 70 71

E-Mail contact@lintharena.ch

Price for single room incl. breakfast and
use of indoor swimming pool CHF 97.00

Price for double room incl. breakfast and
use of indoor swimming pool CHF 164.00

Hotel and restaurant Glarnerhof

Family Leuenberger

Bahnhofstrasse 2

8750 Glarus

Phone +41 55 645 75 75

Fax +41 55 645 75 45

E-Mail info@glarnerhof.ch

Price for single room incl. breakfast

CHF 115.00

Price for double room incl. breakfast

CHF 165.00

Hotel Schwert

Landstrasse 13a

8754 Netstal

Phone +41 55 640 77 66

Fax +41 55 640 90 10

E-Mail schwert.netstal@bluewin.ch

Price for single room incl. breakfast

CHF 129.00

Price for double room incl. breakfast

CHF 170.00

We would be happy to help you make a room reservation. Please state your arrival/departure dates and preferred hotel (should you have one) when registering.

Prices: Changes reserved

The Netstal training concept – Values and foresight

Our core competence has always been and remains the construction of high-performance and high-precision injection moulding machines. We have focused exclusively on the development and production of high-tech products for the global plastics market for over sixty years now.

Thanks to its vast experience, Netstal continues to set trends for the entire industry while its groundbreaking innovations continue to set new benchmarks.

All machines from our company are characterised by their precision, speed, reliability, user friendliness and economy.