EFFICIENT PROCESSES FOR
THE WAY TO THE TOP

Training courses - Services - IT tools
When it comes to improving the efficiency of your production process and reducing the costs, having the best machines is simply not enough. To fully exploit all economic opportunities, the entire process must be analyzed and optimally harmonized. Schuler is a highly competent provider with a service portfolio covering the entire process chain in the stamping and forming system sector. Each measure is primarily designed to boost your company’s profits.

CONTENTS
- Calculation of possible yield using your component and die data
- Training and workshops – from the fundamentals to tips and tricks for experts
- Process optimization and production assistance on your premises
- Practical IT tool for the optimum determination of the production parameters of the press, transfer system and feed system
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PROCESS MANAGEMENT.

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TRAINING COURSES

A practical approach. Since the company’s very early days, Schuler has focused on performance and quality. We apply the same high standards to our training courses, because even the best system is of little use if you do not fully exploit its potential. We show you how the right training courses can help you optimize your entire production process.

A big step ahead. Our highly qualified and continuously trained staff empower you to convince your customers with top services. All our seminars are run by expert trainers, who provide practical expertise and use the latest teaching methods. We offer training courses both at your site and in our TechCenters.
BASIC KNOWLEDGE
An extensive understanding of a procedure is required to produce first-class quality. In our basics seminars, we provide fundamental knowledge on press technology to meet this demand.

Unleash the maximum potential of your employees and systems with the training programs of the technology leader in forming technology. At our training center in the Schuler Innovation Tower in Göppingen, we provide optimum prerequisites for intensive learning and a sustainable training result.

CONTENTS
- Forming technology yesterday, today and tomorrow
- Overview of classic and new forming methods
- Overview of press and automation systems
- Allocation of the parts range to the press types
- Round of questions

TARGET GROUP
Beginners, management, controlling/purchasing, system operators, maintenance engineers, setup engineers, die maker, planners/optimizers

“All things practical must be based on theory or belief.”

Friedrich Max Müller, Oxford
In tailored operator and maintenance engineer training courses, we train your employees, even on site on your premises. System-specific and practical. We have the expert knowledge imparted in the fundamentals and technology seminars.

ESPECIALLY FOR YOU
Schuler looks back on extensive practical experience in professional and successful training courses with customers all over the world. The focus of these on-site training courses is the training and qualification of the operators and maintenance engineers for constantly growing demands and special requirements.

The qualification of the personnel for the operation, monitoring and maintenance of the system is an essential prerequisite for the problem-free assumption of responsibility, as well as the efficient and productive operation of the system. These aspects guarantee concepts with theoretical, practical and special training courses that are tailored to the responsibilities and tasks of the target groups.

YOUR BENEFITS
- You obtain expert knowledge from as single source
- The concepts are tailored to the responsibilities and tasks of your employees
- The efficiency and operating safety of your system is considerably increased by the training
- Your specific requirements decide on the concept

THE OBJECTIVE
- Your employees learn how to operate the system effectively and with respect to proper functioning
- Your specialists for maintenance, servicing and repair are prepared for their demanding tasks in a targeted manner
- Mistakes are avoided or corrected more quickly

ZIELGRUPPE
Machine-specific training courses prepare you for their tasks in a well-founded manner.
BASIC TRAINING.
THE BASIS FOR YOUR SUCCESS.

“In the basic training, all participants - from operators, die designers to project planners - get to know the full potential of their new system even before it is installed.”

Christof Kuchelmeister, Trainer and Process Consultant, Schuler Pressen GmbH

Make the most of the advantages of ServoDirect technology right from the start: In the basic training course, we inform your employees about the features of your specific system and how it differs from conventional press technology in a simple and understandable way. We engage with your employees at an appropriate level and inspire them with direct access to the new technology!

The basic course covers the essential aspects of ServoDirect Technology and introduces your system in detail – from the design with comments on individual components and modules to operation and functionality in depth.

CONTENTS
- Fundamentals of servo press drives
- Introduction to the ServoDirect technology
- Design and function of the servo presses
- Practical experience from the press plant
- Introduction to process optimization
- For up to 20 employees

TARGET GROUP
System operators, setup engineers, maintenance engineers, planning engineers, die designers, process engineers, purchasers, sales engineers, stamping plant managers
Each forming process consists of a sequence of individual subprocesses, which results in the finished product. Following the commissioning of your system or as needed, we provide you with advice and practical assistance in optimally coordinating all elements of this system with one another.

Building upon the operator training, one or more dies are jointly optimized for production during process optimization. The main objectives here are to increase productivity and die lifetimes as well as the optimization of energy consumption.

“Optimized processes mean more efficiency. The training on process optimization enabled us to optimally use the entire press system, customized to our requirements.”

Nicolae Radu, Production Manager, UAMT S.A. (Romania)

CONTENTS
General section
- Theoretical and practical exercises
- Process optimization procedure
- Definition of the process parameters to be considered

ProgDie process optimization
- Optimization of slide movement curves
- Practical implementation in the system

Transfer system process optimization
- Generation of slide and transfer system movement curves
- Practical implementation in the system

TARGET GROUP
System operators, setup engineers, stamping plant managers
Only optimum dies consistently ensure productivity and profitability over the long term. In the theoretical part of the training, the optimum interaction between ServoDirect Technology and die design will be taught. The practical part focuses on the dies customized to your needs.

To get the most out of the job and system-independent die design training, it is best to complete it before installation: In this way, the long-standing practical experience of our Schuler specialists will ensure that you get your servo press off to an optimum start.

“*The dies are essential components of our systems and are crucial for productivity. They must have an optimum design. In the training, we mainly benefited from Schuler’s many years of experience and we were able to successfully put the theory into practice right away.*”

Manfred Ruck, Managing Director, Fischer Fertigungstechnik GmbH & Co.

**CONTENTS**
- Guideline for servo press technology for die design
- Die design, taking system parameters into account
- Process optimization guideline

**TARGET GROUP**
Die designers, process engineers
The best theory is no substitute for practice: This is why our commissioning team will accompany your staff during the startup phase of your system, for as long as necessary.

Direct contact with the Schuler experts that put your system into operation gives you an optimum overview of all the components and capabilities of your system. With production assistance, not only do we ensure a smooth production start, we are also available to provide advice and assistance afterwards.

"The commissioning of a new system is an exciting process, in which many questions arise. We support our customers on site until they can be sure that everything is running smoothly and we also support them later on, if they need us."

Elmar Neff, Project Manager,
Schuler Pressen GmbH

CONTENTS
We support you with the following:
• Production start of your system
• Performing coil and die changes
• Creating new product record data

TARGET GROUP
System operators, setup engineers

IDEAL SUPPLEMENT
Process optimization, die design training
The sustained reduction of setup times is a key requirement for high production efficiency with flexible responsiveness to the market requirements. A systematic and structured approach allows optimization of setup processes and significant reduction of downtimes.

In the workshop, methods and systems for a structured reduction of setup times are covered with simulations and applied in practice.

“Although the system is not new to me, it has exceeded my wildest expectations.”

Jochen Rink,
Plant Manager, Linde + Wiemann GmbH KG

CONTENTS
- Introduction to reduction of setup times
- Standardized setup documentation
- Methodological setup analysis
- Internal and external setup
- Parallel setup steps
- Workplace organization / 5S
- Technical optimization of setup time
- Repeated practical exercises

TARGET GROUP
System operators, setup engineers, planning engineers, stamping plant managers
The use of servo press technology brings a wide variety of technical and economic advantages. Together with you, we are happy to create conceptual design for an individually designed workshop, adapted to your requirements.

The content of the courses can be put together freely from our training modules. In addition, however, topics such as new technology, processes and materials can be taken into consideration. We also support you in determining the economic feasibility of production processes and technologies within the scope of a workshop.

**CONTENTS**
- Customizable

**TARGET GROUP**
System operators, setup engineers, maintenance engineers, planning engineers, die designers, process engineers, purchasers, sales engineers, stamping plant managers
SERVICES
Consistently simple. Simply consistent. At a time when technology is becoming more complex and challenging, our services make things simpler. Although technological progress is important to us, we believe that it should always serve the needs of people. We simplify your workflows and make it easier for you to achieve success using everything from curve generation and simulations that improve die design through to the efficient coordination of all aspects of your press operation.

No compromises. Schuler not only provides competent consultants, but also technical experts who will give you practical help. Our employees are always available to offer you personal advice and support with your system. You benefit from the experience gained through our daily work on our systems around the world. Schuler’s technical experts can help you optimize your production process and make sure you use your systems as efficiently as possible.
The use of highly dynamic torque motors for press operation opens up completely new perspectives: Maximum flexibility in production, economic production of complex part geometries and a high output with improved part quality. We would be pleased to help you perfectly coordinate these system elements with one another.

The aim of our assistance is to increase productivity and to optimize energy consumption in consideration of process parameters.

SERVICE
Optimization of the production process in terms of output and energy requirement of a set of dies (ProgDie or transfer system) by a Schuler technician.

IMPLEMENTATION
Customer-specific, based on the number of dies to be optimized.
Only optimally designed dies consistently ensure productivity and profitability over the long term. The focus here is on the interaction of slide and electronic 3-axis transfer system.

Our service helps you to design dies for maximum output. We generate component-specific interference curves for you in order to optimally support your design process. As a result, you can save on investment costs in proprietary software and hiring or training additional staff.

CONTENTS
- Generation of interference curves for die design
- Curves in 2D format (*.dxf)
- Curves in 3D format (*.igs)
- Curves for the part of the left and right transfer tooling
- Relative to the lower and upper dies, respectively

DELIVERY
Approximately 3 – 8 working days after receipt of your order and the parameter list at Schuler
Our experts analyze your die design and give you valuable tips on how to achieve optimum output of your servo press.

We run a virtual simulation of your digital die, in which both the parts flow and additional movements for freedoms of movement on the gripper rail are visualized.

The analysis provides you with the opportunity to optimize the die design as early as the design stage.

**SERVICE**
- Simulation of a set of dies with 3-axis transfer system mechanization
- Interference analysis
- Statement about the expected stroke rate
- Optimization options and proposals for the die design
- Video of CAD simulation with consideration of key points

**DELIVERY**
Approximately 2 – 3 weeks after receipt of your order and the die data at Schuler
3D CAD PRESS MODEL.
VALUABLE PACESETTER FOR PRODUCTION PLANNING.

Not only does Schuler provide its customers with advice and assistance for optimization of existing dies. Schuler also offers valuable assistance in the design of new dies and production planning.

We create a 3D model of your press system, in which your dies can be loaded and positioned freely for visualizing and investigating any interfering contours.

CONTENTS
- Creation of a static press model without kinematics in a generally valid CAD format
- The press model includes problematic die-related geometries, such as the moving bolster (installed), transfer rails, slide geometries, etc.
- Press components are simplified while maintaining any interfering contour

DELIVERY
Approximately 2 weeks after placement of order
OFFLINE IT TOOLS

For any situation: Schuler. We provide a range of specialist IT tools that improve the performance of your machines in your specific environment to meet your individual requirements.

The key to success lies in the planning phase. With our sophisticated IT tools, you can significantly improve your production process by speeding up or even automating the commissioning of new dies. The benefits of Schuler’s IT solutions are obvious. They save you time and money by keeping downtimes to a minimum.

It’s the setting that counts. Schuler helps you plan your processes effectively so that you can make full use of your machine without unnecessary downtimes. In addition, there will be no unpleasant surprises during the die tryout process because of the reliable die design based on interference curves. Schuler’s IT tools shorten your set-up processes by simulating all the movement sequences and transfer system flows. The result: a significantly increased machine availability and productivity.
OFFLINE PROGRAMMING WITH TRANSFER BASIC.
PERFECT PROCESSES BETWEEN SLIDE AND TRANSFER SYSTEM.

ADVANTAGES AND FUNCTIONS
- Design, calculation and optimization of servo slide and transfer system movement curve
- Diagrams and curves in various output formats
- Displaying the interference curves and their output in *.dxf and *.igs data format
- Simple input for generating curve data
- Increase in output and system availability
- Several systems are mappable in one tool

DELIVERY
Approximately 4 weeks after ordering or at the earliest 1 week after the handover [final acceptance] of the system in the ready-to-operate state

TRAINING
- Entry of tool data
- Programming and optimization of movement sequences
- Creating diagrams and curves in various output formats
- Archiving of results

TARGET GROUP
Setup technicians, process engineers, planning engineers, die designers, sales engineers

This offline programming station lets you create and optimize the slide kinematics and transfer system processes outside the forming plant and therefore during the development stage of the die. The data can be exported to common CAD formats. This enables the time leading up to the commissioning of a die to be significantly reduced.

The specific limits of several systems can be stored and retrieved from the program. The movement sequences are mapped graphically using various diagrams. Just a few clicks are all it takes to obtain reliable information about the possible yield of the slide and transfer system.
DigiSim® is simulation software developed by Schuler for 2 and 3-axis transfer presses for easy visual verification of the parts flow and optimization of the stroke rate. In addition to the mutually occurring movements of the slide and transfer rails, up to ten additional movements can be taken into account with ease.

This means that collisions between all elements can be detected and eliminated in a straightforward manner. This software forms a modular system together with the TransferBASIC offline programming station.

ADVANTAGES AND FUNCTIONS

- Software system, including TransferPRO
- Interference analysis in the kinematic press model
- Verification of additional movements in parts transportation
- Easy operation and curve creation
- CAD-neutral simulation environment
- Die data can be prepared, optimized and managed offline
- Optimization of the die design as early as the design stage

DELIVERY

Approximately 4 weeks after ordering or at the earliest 1 week after the handover (final acceptance) of the system in the ready-to-operate state

TRAINING

- Entry of tool data
- Programming and optimization of movement sequences
- Creating diagrams and curves in various output formats
- Archiving of results

TARGET GROUP

Setup technicians, process engineers, planning engineers, die designers, sales engineers
ONLINE IT TOOLS
Optimization can even be performed directly on the system: thanks to the online IT tools of Schuler that are integrated into the press visualization system. Their easy and intuitive use lowers inhibitions, helping you maximize the potential of your system.

For the most common applications and forming processes, various slide movement curves have been saved that experienced users can program themselves for maximum yield. In order for the production to be able to start immediately, software developed by Schuler guides the user through the die setup procedure step by step. In the process, the press, transfer system and roll feed unit are optimized in coordination with each other.

In this way, system operators and owners can take advantage of the potentials of the ServoDirect technology.
With the Optimizer, you do not have to worry about complicated servo programming. Due to the simple user interface in app form, servo is made easy.

Based on templates, the movement sequences of the press slide and transfer system can be selected and their stroke height, forming characteristics, travel paths, axial overlapping and freedom of movement can be adapted. In this way, you can increase the yield of your Schuler SDT presses for specific formed parts – intuitively, quickly and easily.

ADVANTAGES AND FUNCTIONS
- Easy and intuitive operation
- Fast program creation for the press and transfer system directly on the system

DELIVERY
The program is implemented in the visualization system of Schuler SDT servo presses by default

TARGET GROUP
System operators, setup engineers
SMART ASSIST.
GUIDE TO SUCCESS.

Smart Assist is an electronic assistant to support the start of production of new dies with optimum yield. The electronic assistance guides the machine setup engineer through the setup process step by step using videos, graphics and descriptions. At each step, data is recorded by direct entries or teach-in functions on the press control panel or smart device. The collected data is sent to OptimizerPRO, which optimizes the movement curves of the slide and transfer system fully automatically.

With Smart Assist, you obtain instructions for die setup and optimization, quickly and easily in a self-explanatory manner.

ADVANTAGES AND FUNCTIONS
- Self-explanatory and intuitive operation
- Considerable acceleration of the setup procedure
- Fully automatic optimization of the movement curves, including acceleration and setting angles
- Contains OptimizerPRO
- Increased output performance

DELIVERY
- For system purchases with handover of operations (final acceptance)
- Approximately 4 weeks after placement of order for retrofits

TARGET GROUP
System operators, setup engineers
With OptimizerPRO, you can program your Schuler SDT press freely, but still easily. The movement profile of the slide can be freely designed in regard to stroke height, form and speeds. The paths, acceleration and axial overlapping can be adapted for each axis individually. The entries can be made in millimeters, which are then converted to the corresponding angle by the program. In case of changes in the slide curve, the transfer system values are corrected automatically.

Through OptimizerPRO, you obtain all degrees of freedom in the programming of your Schuler SDT press and can therefore achieve maximum yield – and that with simple operation.
Stroke rate

Setup duration

UP-TO-DATE, MANUAL PROCEDURE
### TRAINING COURSES

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### IT TOOLS*

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<th>PLANNING ENGINEERS</th>
<th>DIE DESIGNERS</th>
<th>PROCESS ENGINEERS</th>
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* Including scope of training courses
## OVERVIEW – TRAINING PACKAGES

### TRAINING COURSES

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<th>OPERATOR AND MAINTENANCE (EUROPE)</th>
<th>HANDLING AND PROCESS OPTIMIZATION</th>
<th>HANDLING AND FRONT LOADING (EUROPE)</th>
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### SERVICES

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### TOTAL TRAINING DAYS

|                        | 4.5      | 8.5      | 12.5     | 15.5     | 17.5     | 0 + 10   | 7 + 20   | 9 + 20 |

The table shows the training days included in the training package for a training course with up to 6 participants. Please contact us if you want to make any changes, we would be happy to advise you.
Schuler is the technological and global market leader in the field of forming technology. The company provides presses, automation solutions, dies, process expertise and service for the entire metalworking industry and for lightweight automobile construction. Its customers include automotive manufacturers and suppliers, as well as companies in the forging, household appliance, packaging, energy and electronics industries. Schuler is a leading supplier of minting presses and implements system solutions for a wide range of different high-tech sectors. The company has a presence in approximately 40 countries with roughly 6,600 employees. Schuler is majority-owned by the Austrian ANDRITZ Group.