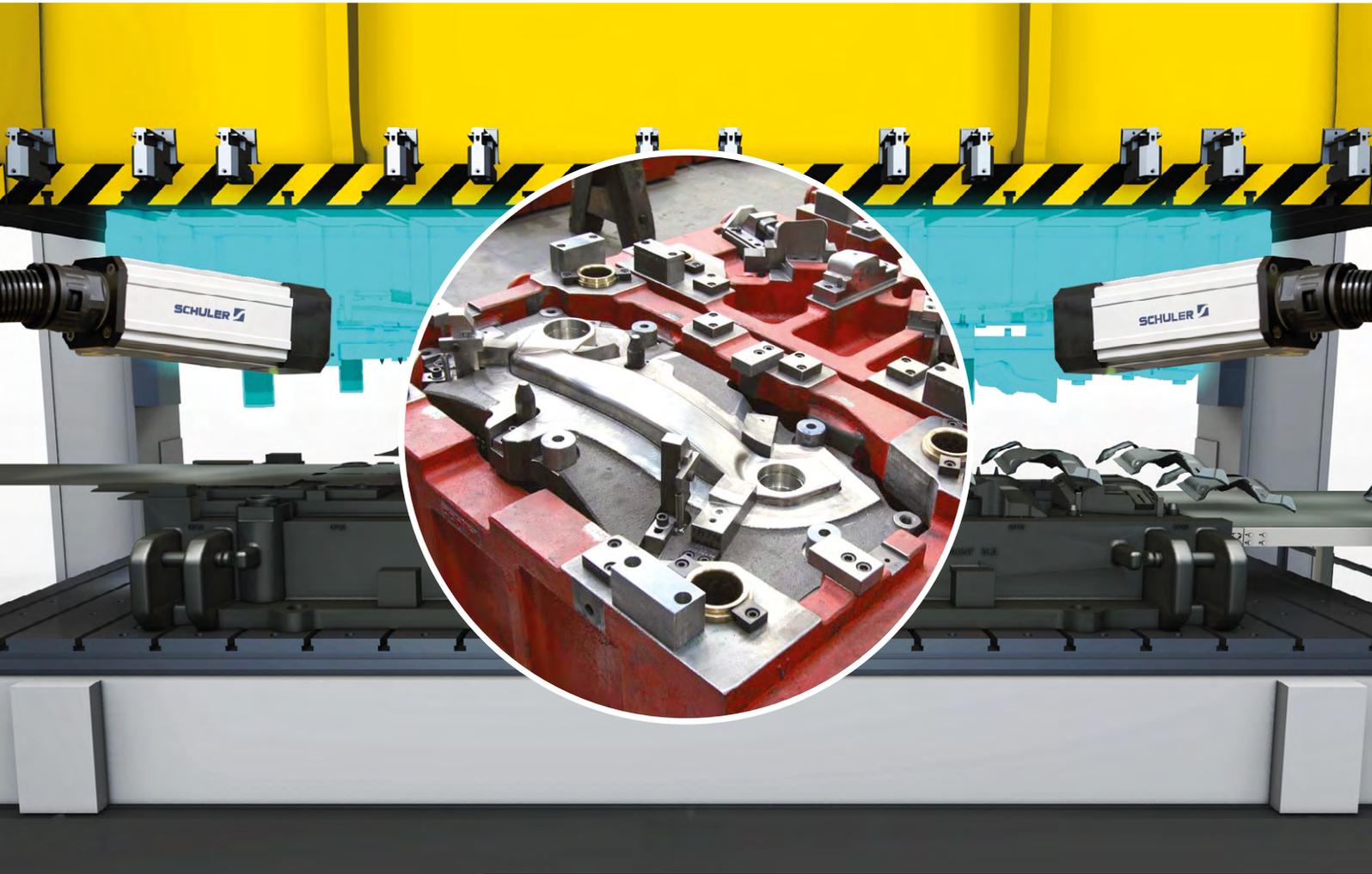


FORMING THE FUTURE



VISUAL DIE PROTECTION

Camera-based monitoring system to protect against tool damage and machine downtime

ALREADY PROVEN IN PRACTICE. CUSTOMERS HAVE TRUSTED FOR YEARS IN OUR CAMERA-BASED MACHINE VISION SOLUTIONS.

NEFF PROTECTS TOOLS WITH VISUAL DIE PROTECTION AND PREVENTS ACUTE DAMAGES TO THEM.

«« We have been waiting for such a solution. We saw Visual Die Protection at a demonstration and wanted it as soon as possible. The application showed a successful result after only a few days: Visual Die Protection identified a misorientation of the components and stopped the press even before the tools were set up. »»

Leonardo Serosi, manufacturing support Neff home appliances

AUTOMOTIVE OEM, WITH THREE VISUAL DIE PROTECTION SYSTEMS IN OPERATION.

«« With the help of this system, we have been able to reduce the problems with the main dies almost to zero. That's why we are equipping more presses with the system, and our planning is not completed yet. We are also looking at applications outside of metal forming to see how the system can help us optimize our production and assembly processes. »»

Automotive OEM

TIER 1 COMPANY USE THE SYSTEM SPECIFICALLY TO PROTECT CRITICAL TOOLS.

«« The investment in the system is a no-brainer. It was immediately clear to everyone how much we could save in costs if it could prevent die and machine damage. In addition, the simplified operation means that all our employees can handle the system. »»

Tier 1 company

AWEBA IMPROVES PROCESSES WITH THE HELP OF THE VISUAL DIE PROTECTION ANALYZER.

«« Thanks to the Visual Die Protection Analyzer, we have access to past data and images at any time. This helps us to analyze our production processes in detail and has already contributed to process improvement and error prevention. »»

René Hölzig, AWEBA die manufacturing

TECHCENTER REDUCES COSTS BY USING THE VISUAL DIE PROTECTION SYSTEM.

«« By retrofitting Visual Die Protection, we were able to significantly reduce our tooling and follow-up costs. »»

Falk Symanzik, plant manager Servo TechCenter

VISUAL DIE PROTECTION. REDUCE TOOL AND MACHINE COSTS.

YOUR DAILY CHALLENGES.

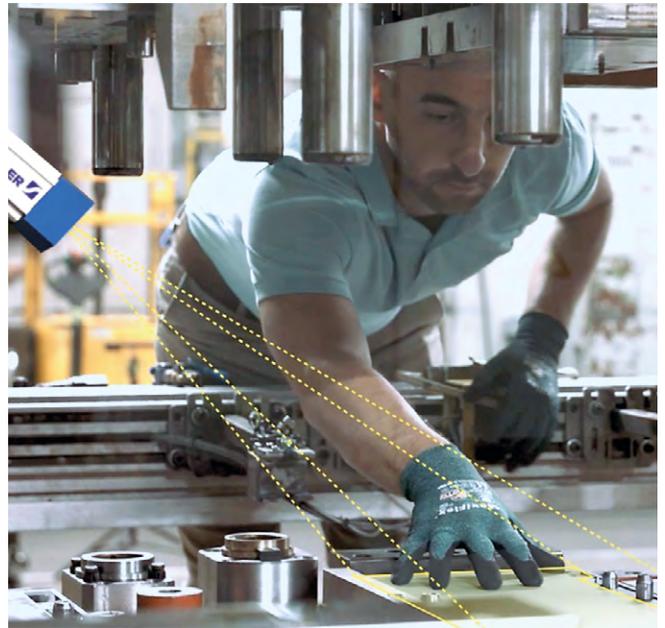
To ensure your future competitiveness, one topic is particularly important: the avoidance of production interruptions and die damage. There are various causes for this: punching waste coming up, incorrectly deposited components, or loosened tool or transfer elements. All this can quickly damage or even break tool parts. The consequences are high costs and unplanned down-times that upset your planning and, in the worst case, lead to delivery bottlenecks or contractual penalties.

OUR SOLUTION – VISUAL DIE PROTECTION.

With Visual Die Protection, we have dedicated ourselves to this topic. With it, our customers protect their dies already during production. The camera-based system detects critical situations and makes it possible to stop the press even before the dies are set up to prevent damage completely. This minimizes risks and saves costs.

VISUAL DIE PROTECTION IS A MULTIFUNCTIONAL, OPEN SYSTEM THAT CAN ALSO BE USED FOR OTHER PRESS MANUFACTURERS AND NEW AREAS OF APPLICATION.

Thanks to the simple retrofit and the wide range of applications of Visual Die Protection, users quickly benefit from our system. In addition to use on transfer presses, in press lines or for progressive dies, applications in plastics processing or on assembly lines are also possible. The connection of the system is manufacturer-independent and not limited to forming technology.



Visual Die Protection detects foreign objects or other sources of danger in real time and stops the line before any damage occurs.

Customers benefit from the advantages of Visual Die Protection.

« We offer interested companies a **risk-free test on a trial basis**. Using our mobile vision system, we perform a feasibility analysis for your specific application directly at your plant. Make an appointment for a test day at your press shop. »

Ahmet Cansever, Technical Sales Engineer Schuler

FAST AND UNIVERSAL.

VISUAL DIE PROTECTION IS QUICKLY READY FOR USE, EVEN FOR THIRD-PARTY PRODUCTS.



One monitoring function reports an error.

UP TO EIGHT MONITORING FUNCTIONS FOR EACH DIE.

This enables different system responses for each application. Thanks to the intuitive operator guidance, the monitoring function can be set up within a very short time. The data can be stored and retrieved as soon as a die is changed again.

Automatic product data change together with the press, is also possible. In addition, our experts are constantly developing the system further in close cooperation with our customers.



What is monitored by the system?

-  **Foreign body detection.** Checks the die for the presence of any foreign bodies, such as screws or punch scraps.
-  **In-process check.** Checks for the proper insertion, forming and removal of parts.
-  **Monitoring of critical die functions.** Monitors specific areas, such as centering or ejector pins, with increased precision.

ADVANTAGES VISUAL DIE PROTECTION

- Avoidance of die damage
- Increase of line availability
- Preservation of the ability to deliver
- Fast installation (less than 24 h plant downtime)
- Up to eight monitoring operations per die
- Plant response tailored to each application
- Fast setup and reliable monitoring
- Easy management of product data sets
- Administration of user groups

VISUAL DIE PROTECTION ANALYZER. GET TO THE BOTTOM OF THE ERROR CAUSES.



The Visual Die Protection Analyzer provides detailed insight into error history, even remotely.

ROOT CAUSE ANALYSIS WITH THE VISUAL DIE PROTECTION ANALYZER.

The Visual Die Protection Analyzer displays not only the images but also the associated data. By looking at the data series over a day or a shift, it is possible to quickly find the relevant points in time when process fluctuations or plant stops occurred. By selecting relevant time points, the system displays the decisive images to analyze the causes of the stops. From this, countermeasures can be initiated to prevent future plant stops.

Access to the Visual Die Protection Analyzer is possible at the plant or optionally remotely from an office workstation. Image data can be exported from the system for documentation purposes and for forwarding to the responsible employees.

DO YOU KNOW HOW STABLE YOUR PROCESSES ARE?

With the Visual Die Protection Analyzer, you can click through the production process stroke by stroke and see whether, for example, all components are always placed stably in the correct position or whether there are unwanted deviations. With the help of this analysis, you can optimize the setting of transfer grippers or infeed devices. You can also carry out tests for different stroke rates and find out up to which stroke rates the processes run reliably and whether further increases in stroke rate are possible to increase output.

ADVANTAGES VISUAL DIE PROTECTION ANALYZER

- Uninterrupted traceability
- Continuous process improvement
- Access from the plant or remotely
- Complete documentation with image export

ABOUT THE SCHULER GROUP – WWW.SCHULERGROUP.COM

Schuler offers customized cutting-edge technology in all areas of forming – from the networked press to press shop planning. In addition to presses, our products include automation, dies, process know-how and service for the entire metalworking industry. Schuler's Digital Suite brings together solutions for networking forming technology and is continuously being developed to further improve line productivity and availability. Our customers include automotive manufacturers and suppliers, as well as companies in the forging, household appliance and electrical industries. Presses from the Schuler Group mint coins for more than 180 countries. Founded in 1839 at our headquarters in Göppingen, Germany, Schuler has approx. 5,000 employees at production sites in Europe, China and the Americas, as well as service companies in more than 40 countries. The company is part of the international technology group ANDRITZ.



SCHULER DIGITAL SUITE.

Visual Die Protection is part of the Digital Suite, a collection of solutions for the digitization of metal forming technology.

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