



Industry:	Machine tools
Task:	Protecting
Task in detail:	Hazardous point protection
Product group:	Safety light curtains
Reference customer:	Neutrik® AG
With customer reference:	1

Short description

To protect against finger injuries, a connector products manufacturer safeguarded a press with a system of safety light curtains and a safety controller.

Task

The Neutrik® AG is a leading manufacturer of electric and electronic connector products for audio, video and lighting as well as industrial data and network connectors. At the company headquarters in Schaan, Liechtenstein, connector sockets for speakers are manufactured. In one work step, two contact tips are placed in the socket with the help of a manually operated press and then pressed together with a sealing cover. To relieve the operator from the monotonous work, make the work space more ergonomic and optimize the manufacturing process, this work step has been shifted to an automatic press, in which the parts are manually inserted and removed. A risk analysis for the layout of the work space showed that a category 4 safety solution is needed. For operation reasons, only electro-sensitive protective equipment could be used that would help the operator to work ergonomically. SICK was able to offer the right system.



Implementation

Safety light curtains in U-cascade and a safety controller protect the operator's fingers from injury

With the safety light curtain (miniTwin4) from SICK, safeguarding the work space was achieved ergonomically and process-oriented. Three systems each with finger protection resolution were placed in a U-form around the operating area of the press with a cascaded control system. By installing the sender/receiver above and below, three-sided safeguarding - front, left and right - was achieved, which does not hinder the insertion and removal of parts, as is usually the case with a profile or frame. As soon as an operator reaches into the monitored area after the lifting movement of the press has started, i.e. during the pressing process, the light curtains detect the movement and send a signal to the SICK safety controller (Flexi Soft). It stops the process and starts the return stroke of the tool. Only after the error has been rectified and the protective device has been reset can the next pressing process be started manually with a start button. In addition to securely processing the signal, the safety controller evaluates the signals of further sensors and performs a plausibility check of the operational status.

Customer benefits

- Certified safety solutions prevent the risk of injury and protect against the risk of liability
- Non-contact safeguarding makes ergonomic and process-oriented operation possible
- Seamless cascading and U-form installation ensures barrier-free and thus ergonomic operation
- Secure sensor and control technology guarantees optimal system integration

With the use of safety light curtains and the safety controller from SICK, Neutrik's protection, ergonomic and process objectives were completely fulfilled. Compliance with the required protection level, i.e. performance level pl "e" as per EN ISO 13849-1 or SIL3 as per IEC 61508/EN 62061 guarantees the best possible protection against injury and the resulting risks of liability for providing unsafe operating equipment. The choice of electro-sensitive protective equipment and its horizontal installation ensures that no mechanical components get in the operator's way during insertion and removal of parts. By purchasing both the secure sensors and secure controllers from the same manufacturer, Neutrik avoided unnecessary interface and function risks and profited from the optimal integration of a secure complete system. Thus, in the future further work spaces will also be safeguarded and automated in this way.