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## Rewriting the rules for machine safety

### What will the new Operational Safety Ordinance change?

**The new version of the German Operational Safety Ordinance (BetrSichV) will mean machine operators will need to gear up to changes in the rules on machine and plant safety. These include the obligation to check safety gear regularly and adapt it to the state-of-the-art where necessary.**

It is part of the standardisation process that existing guidelines and ordinances are regularly checked, updated and adapted to technical progress. From this perspective, it was high time for a reworking of the Operational Safety Ordinance (BetrSichV) which came into force back in 2002. This has now been completed. The new version of BetrSichV was published in the Federal Law Gazette on 03 February 2015 and has been in force in Germany since 01 June 2015. Compared to the old version there are a few major changes, new rules and definitions which works managers need to know and take into consideration.

#### Increased responsibility for the operator

This includes more detail on the statement in section 3 that the operator needs to carry out a risk assessment. The exact wording: "Before using equipment, the employer must assess the risks occurring (risk assessment)

and derive the necessary, suitable safety measures. The execution of a CE mark on the equipment does not obviate the need to carry out a risk assessment." This requirement seems sensible, as the application and use of the machine could present risks that the manufacturers of the machine are not familiar with and therefore cannot counter with appropriate protective measures. It is now the responsibility of the operator to determine these (residual) risks (Figure 1).

#### Adapting safety equipment to the state-of-the-art

The fundamental changes relative to the old BetrSichV also include the stipulation in section 3 that the risk assessment should be regularly checked and updated if necessary. The exact wording states that, "In the process, the measures must be adjusted in accordance with the ongoing development of the state of technology." This was not previously the operator's responsibility. So they are bound to monitor the state-of-the-art and update the safety measures and equipment where required. According to section 10, paragraph 1, this applies "for the entire service life" of the machine. This means that a safety technology retrofit may be required in practice, which is a new role for works managers, maintenance engineers and/or safety engineers.

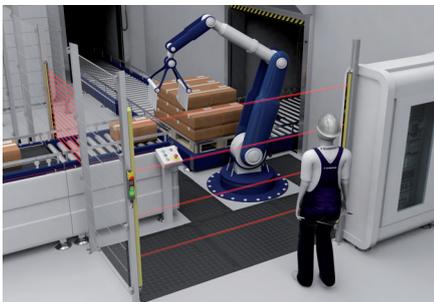
When producing or updating risk assessments, the works manager can use the "Technical Rules for Operational Safety" as a guide. TRBS 1111 "Risk Assessment" provides basic instructions on the subject, while

the TRBS 2000 series give more specific information on individual hazard classes. These technical rules can be downloaded from the homepage of the Federal Ministry for Industrial Safety and Occupational Health ([www.baua.de](http://www.baua.de)).

#### Greater consideration of manipulation protection

Another new aspect is the greater consideration of the manipulation of safety equipment in section 6 of BetrSichV. A clear connection between the "Operator Ordinance" and the new standard DIN EN ISO 14119 can be seen here. The BetrSichV ordinance states: "The employer shall ensure that (...) protection devices cannot be tampered with or bypassed."

These new regulations are very welcome, as in practice protection devices are manipulated in around one third of companies. This is evidenced by numerous investigations commissioned by trade unions and comparable institutions. The risk can be minimised by means of a few relatively simple measures. The measures are initially at the design level: Machine



**01 New rules on machine safety come into force with the revised BetrSichV. For example, operators now have to determine the (residual) risks**



**02 Coded electromechanical safety switchgear offers increased manipulation protection**

constructors should integrate the safety functions into the machines or processes so they have no impact on the operators. This reduces the temptation to manipulate them to a minimum. Ergonomics is one of the factors that play an important role here. At the same time, the design engineers have access to safety switchgear which allows increased manipulation protection, and this is the next level. For example, they can opt for coded electro-mechanical safety switches (Figure 2) or for electronic safety sensor with different code variants (Figure 3).

**Explanation of terms:  
What is a “significant change”?**

The revised BetrSichV also answers the questions of what represents a “significant change” to a machine. This question has led to extensive discussion and uncertainty in the past. The background: If a machine operator makes a change of this kind by, for example, integrating multiple incomplete machines into one whole machine or interlinking them into a system, he then becomes a manufacturer and thus needs to comply with all the directives and standards of machine safety applicable to a

manufacturer. Conversions to existing machines also beg the question as to whether it is a significant change or not.

By definition, a change of this kind can be deemed to exist if a functional change (intended use), an increase in performance, a change in safety technology has taken place, although an improvement in safety technology is explicitly not considered a significant change.

**Key question: Are there any new hazards?**

In accordance with an interpretation paper published in the Joint Ministerial Gazette (GMBI 2015, p. 183) on 09 April 2015 by the Federal Ministry for Employment and Social Affairs (MBAS), which was produced in cooperation with the BAuA (Federal Ministry for Industrial Safety and Occupational Health), a significant change is based on whether there are new hazards. If this hazard leads to a new risk and the existing protective measures are not sufficient and a safe situation cannot be produced by using simple safety equipment, then this, by definition, is a significant change.

**New rules for machine operators**

The brief overview shows for machine operators, the new BetrSichV incorporates a few changes which are practical and the implementation of which will improve machine safety in practice. Clear attempts have also been made to clarify issues that were previously unclear and pick up on current issues, such as the manipulation of safety functions. However, further questions will no doubt arise during implementation. The Schmersal Group will continue to monitor this process and offer seminars at its tec.nicum training centre and other course locations which provide extensive information on BetrSichV and other standards which are significant to machine users (see box).

At the same time, the Schmersal Group has a “Schmersal Safety Services” service package to offer consultancy on machine and plant safety. The package includes services such as a stock-take of machines and systems by qualified, trained employees and the development of a catalogue of measures to implement any improvement measures necessary.

**Seminar on the requirements for used machines**

From a machine safety perspective, what needs to be done if a machine operator is upgrading or converting an existing machine? Again from a safety perspective, what aspects need to be checked when purchasing a second-hand machine? These questions are at the heart of a seminar which forms part of this year’s training programme at the Schmersal Group’s tec.nicum in Wuppertal. The seminar sets out the technical framework conditions and also covers the new Operational Safety Ordinance and the Use of Work Equipment Directive, as well as the interpretation paper published by the Federal Ministry for Employment and Social Affairs (MBAS) on “Significant changes to machines”. Participants are also given practical tips on handling retrofitting projects based on case examples from the field. The next date for the one-day seminar is on 24/09/2015 in Bietigheim-Bissingen.



**03 Safety sensors with RSS technology. The RSS 16 shown is also perfect for retrofitting to existing machines, because it has the same housing dimensions as the AZ 16, which has been installed millions of times over.**

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