

SAFETY AND HYGIENE REGULATIONS



Servei de Prevenció de Riscos Laborals
UNIVERSITAT POLITÈCNICA DE CATALUNYA

ADAPTATION OF WORK EQUIPMENT ACCORDING TO RD 1215/1997

CODE

SHR 202

Date:

July 2003

Revision:

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RECOMMENDATIONS ACCORDING TO ROYAL DECREE 1215/1997, ESTABLISHING MINIMUM HEALTH AND SAFETY REGULATIONS FOR OPERATORS OF WORK EQUIPMENT

Article 2 a). Definitions

Work equipment: any machine, apparatus, instrument or installation used for work.

Sole temporary provision. Adaptation of work equipment:

1. Work equipment that is available to employees in the company or place of work on the date that this Royal Decree comes into force must be adapted to meet the requirements established in Section 1 (General minimum regulations for work equipment) in Appendix I (Minimum regulations for work equipment) **within twelve months from the aforementioned date of coming into force.**

APPENDIX I: MINIMUM REGULATIONS FOR WORK EQUIPMENT

1. General minimum regulations for work equipment

1. Control devices for work equipment that could have an impact on safety must be clearly visible and identifiable and, when necessary, indicated with an appropriate sign. Control devices must be situated outside hazardous areas (with the exception of specific control devices when necessary), so that when they are operated they cannot cause any additional risks. Involuntary operation of control devices should not give rise to any additional risks. If necessary, the operator of the equipment must be able to make certain, from the main control position, that there are no workers in hazardous areas. If this is not possible, the start-up of the equipment must be preceded by a warning system, such as a visual or acoustic warning. Exposed workers must have sufficient time and means to move away rapidly from the hazards caused by the start-up or shut-down of the work equipment.
The control systems must be safe and selected taking into account any potential faults, disruptions or foreseeable requirements, under the expected conditions of use.
2. The work equipment can only be started up through voluntary action on a control device designed for this purpose. This must also be the case when work equipment is started up after a shut-down, regardless of the reason for the shut-down, and to make significant alterations to operating conditions (speed, pressure, etc.), except when the start-up or alterations do not represent any hazard to exposed workers or are the result of a normal sequence in an automatic cycle.



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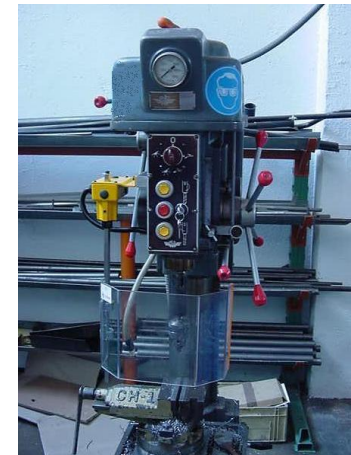
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3. Each piece of work equipment must have a control device that enables it to be totally shut-down under safe conditions. Each workplace must have a control device that enables all or part of the equipment to be shut down, depending on the existing risks, so that it remains safe. The command to shut-down the equipment must have priority over commands to start it up. Once the work equipment or dangerous parts have been shut-down, the electricity supply to the relevant control devices should be switched off. **If necessary, depending on the risks associated with a piece of work equipment and the normal shut-down time, the equipment may need to have an emergency stop device.**
4. Any work equipment that entails the risk of falling objects or projections must have suitable protection devices to guard against these risks.
5. Any work equipment that entails the risk of emissions of gases, vapours, liquids or dust must have suitable devices fitted to collect or extract the substance close to its source of emission.
6. If necessary for the health and safety of employees, a piece of work equipment and its components must be stabilised with fastenings or other means. When workers need to be situated on the work equipment to operate it, accessing and remaining on this equipment must not involve any hazards for their health and safety. In particular, if there is a risk of falling from a height of over 2 metres, the equipment must have rigid rails at a height of at least 90 centimetres, or any other system that provides equivalent protection.
7. If there is a risk of shattering or breakage of components of work equipment that could significantly affect the health or safety of employees, suitable protection measures must be adopted.
8. **If the moving parts of work equipment could lead to a risk of accident due to mechanical contact, they must be equipped with guards or devices that prevent access to hazardous zones or that stop dangerous manoeuvres before a person accesses these zones.** The guards and protection devices:
 - a. Must be solid and strong.
 - b. Should not cause additional hazards.
 - c. Should not be easy to override or put out of service.
 - d. Must be positioned far enough away from the hazardous area.
 - e. Should not restrict observation of the work cycle more than is absolutely necessary.
 - f. Should enable the actions that are required to fit or replace tools and to carry out maintenance work on the machine, by allowing access only to the sector in which the work needs to be done, if possible without the need to disassemble the guard or protection device.



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9. A piece of equipment's work and maintenance areas and points must be appropriately lit, in accordance with the tasks that are carried out in them.
10. Parts of work equipment that reach high or very low temperatures must be protected when necessary against contact hazards or the proximity of workers.
11. The work equipment's alarms must be perceptible, easy to understand and unambiguous.
12. All work equipment must have clearly identifiable devices so that it can be disconnected from each of its sources of electricity supply.
13. The work equipment must be labelled with any warnings and signs that are essential to ensure the safety of employees.
14. All work equipment must be suitable to protect workers against the hazards of fire, overheating of the equipment or emissions of gases, powders, liquids, vapours or other substances that the machinery may produce, use or store. Work equipment that is exposed to the weather or used in aggressive industrial conditions that represent a hazard for the health and safety of workers must be designed to work in these conditions and have the required protection systems, such as cabs or other elements.
15. All work equipment must be suitable to prevent the risk of explosion, either of the work equipment or of the substances that it produces, uses or stores.
16. All work equipment must be designed to protect exposed workers from the risk of direct or indirect contact with electricity. In all cases, the electrical parts of the work equipment must be adapted to meet the provisions in the specific corresponding regulations.
17. All work equipment that entails risks of noise, vibrations or radiation must have the appropriate protection or devices to limit the generation and propagation of these physical agents as much as possible.
18. Work equipment for storage, decanting and treatment of corrosive or high temperature liquids must have suitable protection to prevent accidental contact between these liquids and the workers.
19. Manual tools must be made from strong materials and the joints between components must be solid to prevent breakage or projections of fragments of the tools. The handles must be of a suitable size, without sharp edges or slippery surfaces. If necessary, they should be insulated.



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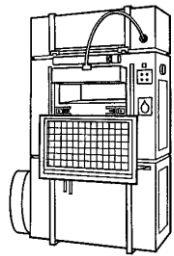
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SOME EXAMPLES OF PROTECTION DEVICES AND GUARDS

SCREEN PROTECTION DEVICE

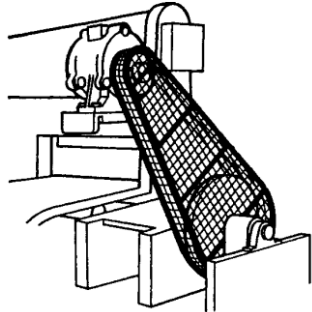


THIS GUARD IS FITTED SO THAT:

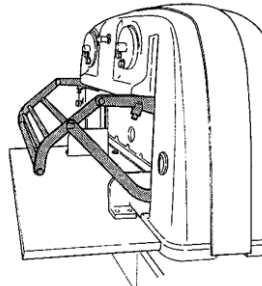
Opening the screen shuts down the machine.

Closing the screen does not on its own cause the machine to start up.

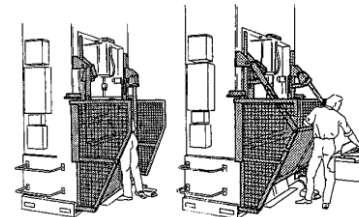
FIXED GUARD WITH SURROUND



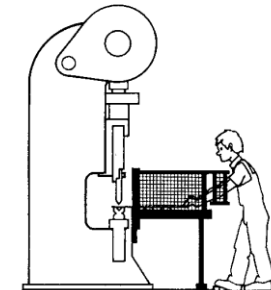
FIXED GUARD TO KEEP HANDS AWAY



ADJUSTABLE GUARD TO KEEP THE BODY AWAY

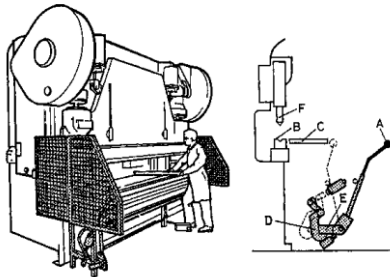


FIXED GUARD TO KEEP WORKERS AT A DISTANCE



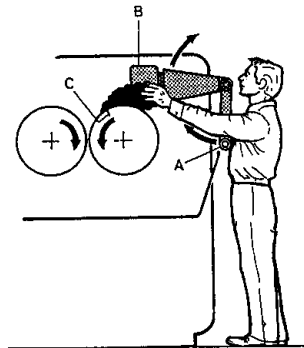
PROTECTION VIA SENSITIVE DEVICES (I)

PRESENCE-SENSING BAR



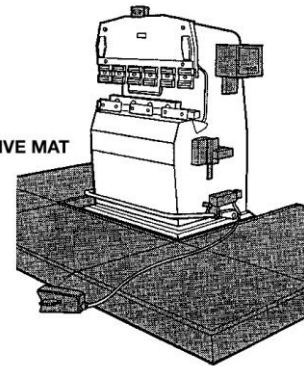
PROTECTION VIA SENSITIVE DEVICES (II)

PRESENCE-SENSING BAR



PROTECTION VIA SENSITIVE DEVICES (III)

SENSITIVE MAT



PROTECTION VIA SENSITIVE DEVICES (IV)

INTANGIBLE BARRIER

