

# Machinery health and safety checklist



Theatre Advisory Group

Name of Production:	
Machinery Identification:	
Description of Machinery:	
Assessor:	
Date of Assessment:	

Check:	Risk eliminated via:			
	Relevant?	Design?	Technical Protection?	Information /Instruction?
Has the machine been designed so construction materials or materials used during its use do not pose a risk?				
Can the machine and its component parts be handled without risk?				
Is the machine designed with a means of preventing a person from being enclosed within it?				
Have parts of the machine, where persons are liable to move about or stand, been designed to prevent slips, trips and falls?				
Have precautions been taken to prevent risks from falling or ejected objects?				
Has the machine been designed in such a way so that it is not possible to make a mistake when fitting parts together?				
Are accessible parts of the machine free from unnecessary sharp edges, sharp angles and rough surfaces?				
Where the machine is intended to carry out several different operations with manual removal of the workpiece between each operation, is it designed so that each element can be used separately without risk?				
Have the moving parts of the machine been designed and constructed in such a way as to prevent risk of contact which could lead to injury or, where risks persist, been fitted with guard or other protective devices?				
Have guards/ protective devices designed to protect against risks been chosen on the basis of the type of risk?				
Are guards for moving transmission parts fixed or interlocking, moveable ones?				
Where moving parts can be made inaccessible during normal operation, have fixed or interlocking moveable guards or protective devices been used to do this?				

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Where moving parts cannot be made completely inaccessible, have adjustable guard been used?				
When a part of the machine has stopped is drift away from the stopping position prevented?				
Are guards and protective devices of robust construction, securely held in place, do not give rise to any other hazard, not easy to by-pass or render non-operational, located at an adequate distance from any danger zone, cause minimal obstruction to the view of the machine process and protect against the ejection or falling of materials?				
Do guards and protective devices enable essential work to be carried out in the installation or for maintenance purposes by restricting access exclusively to the area where the work has to be done without the removal of the guard or protective device?				
Can fixed guards only be undone with a tool?				
Do fixings remain fixed to the fixed guard or the machine when the guard is removed?				
Do interlocking moveable guards remain attached to the machine when open, as far as is possible?				
Are interlocking guards designed and constructed in such a way that they can be adjusted only by means of an intentional act?				
Do interlocking moveable guards associated with an interlocking device prevent the start of hazardous machinery until they are closed, and give a stop command when they are not closed?				
Is the control system designed and constructed so that it can withstand the intended operating stresses and external influences?				
Where it is possible for an operator to reach a danger zone before the hazardous machinery functions have ceased, does a guard prevent the start of hazardous machinery functions until the guard is closed and locked, and keep the guard closed and locked until the risk of injury has ceased?				
Can adjustable guards be readily adjusted without tools?				
Do protective devices prevent start up or continue operation when an operator is in the danger zone, and give a stop command if they fail?				
Is the control system designed and constructed so that a fault in hardware or software does not lead to risk?				
Is the control system designed and constructed so that errors in the control system logic do not lead to risk?				
Is the control system designed and constructed so that reasonably foreseeable human error does not lead to risk?				
Does the design of the control system ensure that the machine does not start unexpectedly?				

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Does the design of the control system ensure that the parameters of the machine do not change in an uncontrolled way?				
Does the design of the control system ensure that stopping is not prevented if a stop command has already been given?				
Does the design of the control system ensure that moving parts or pieces held by the machine do not fall and are not ejected?				
Does the design of the control system ensure that automatic or manual stopping of moving parts is unimpeded?				
Does the design of the control system ensure that safety protection devices remain fully effective or give a stop command?				
Have safety-related parts of the control system been applied in a coherent way to the whole of an assembly of machinery?				
For cable-less control, is an automatic stop activated when correct control signals are not received, including loss of communication?				
From each control position is the operator able to ensure that no one is in any danger zone, or does the control system ensure that starting is prevented if someone is in a danger zone?				
Where a machine has multiple operating positions, is each position provided with all the required control devices without the operators putting each other at risk?				
Has the machine been fitted with a control device to be brought safely to a complete stop?				
Are control devices clearly visible and identifiable?				
Are the stop controls designed so that they stop not only the machine, but all related equipment if its continued operation may cause risk?				
Does selection of one control mode override all other control modes?				
If different modes require different levels of protection, does the machine have a mode selector which can be locked in each position, and is each position of the selector clearly identifiable and correspond to a single operating or control mode?				
If a mode is required where safeguards are neutralised does it disable all other modes? Or does operation of hazardous functions is only by control devices requiring sustained action? Or operation of hazardous functions only occurs if risk is reduced? Or hazards from linked sequences are prevented? Or action on the machine's sensors does not cause a hazard?				
Has the machine been designed so that an interruption, the re-establishment after an interruption, or fluctuations of the power supply to the machine do not lead to risk?				

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Will the machine be safe to use when the user is wearing PPE?				
Does the design minimise discomfort, fatigue, physical and psychological stress faced by the operator?				
Can the machine be adapted to suit different operators?				
Does the operator's seat allow the operator to maintain a stable position, adaptable and minimizing the transmission of any vibration?				
Are control devices positioned so that they can be operated safely?				
Are control devices designed so movement of the device is consistent with its effect?				
Are control devices located outside of danger zones?				
Are control devices positioned so their operation cannot cause additional risk?				
Are control devices designed so that deliberate action is required for actuation?				
Are control devices made to withstand foreseeable forces?				
Do control devices that perform several different actions display the action to be performed?				
Are indicators required for safe operation legible from the control position?				
If a mode is required where safeguards are neutralised, are controls placed next to the operator's position?				
Is the machine fit for function during transport, assembly, normal use, dismantling, decommissioning and disposal?				
Will the machine be safe during foreseeable misuse?				
Has the equipment essential to enable the machine to be adjusted, maintained and used safely been supplied with the machine?				
Is it possible to carry out adjustment, maintenance, repair, cleaning and servicing operations safely?				
Has machinery been designed to allow safe access to all areas where intervention is necessary during operation, adjustment and maintenance of the machinery				
Has the machine been designed so that the need for operator intervention is limited or if operator intervention cannot be avoided, is it possible to carry it out easily and safely?				
Where a stop control that does not cut off the energy supply to the actuators is required, is the stop condition monitored and maintained?				

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Is the machine and its components and fittings stable enough to avoid overturning, falling or uncontrolled movements during transportation, assembly, dismantling or other action?				
Are the parts of the machine and their linkages able to withstand the stresses to which they are subject when used?				
Do the instructions indicate the type and frequency of inspection and maintenance required for safety reasons, and do they indicate the parts subject to wear and the criteria for replacement?				
Where the machine performs operations under different conditions of use, is it designed so that selection and adjustment of these conditions can be carried out safely and reliably?				
Has lighting integral for safe use or maintenance been provided?				
Is the operating position designed and constructed in such a way as to avoid any risk from exhaust gases or lack of oxygen or other risks?				
Have steps been taken to eliminate any risk of injury arising from contact with or proximity to machinery parts or materials, or ejected materials at high or very low temperatures?				
Has the machine been designed to avoid any risk of fire?				
Has the machine been designed to avoid any risk of explosion?				
Has machine been designed so that external radiation does not interfere with its operation?				
Is the machine designed so that risks from hazardous materials and substances can be avoided?				
Where the machine contains hazardous substances, is it possible to clean internal parts without risk?				
Is electrical equipment safe, and does it comply with the requirements of the Low Voltage Directive 2014/35/EU?				
Does the machine prevent or limit the build-up of electrostatic charges?				
Where the machine is powered by sources of energy other than electricity has it been designed to avoid all potential risks associated with such sources of energy?				
Has the machine been fitted with the means to isolate it from all energy sources and, after the energy is cut off, is it possible to dissipate stored energy without risk?				
Has the machine been designed so that risk from any vibration produced is reduced to the lowest level?				
Do the instructions state the noise output if it is over 70dB(A)?				
Has any undesirable radiation emission from the machine been eliminated or reduces to levels that do not cause harm?				

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Where laser equipment is used as part of the machine, has the risk of accidental radiation; radiation from reflection; and secondary been eliminated or reduce to levels that do not cause harm?				
Is the machine designed so that external radiation will not interfere with safe operation?				
Where there is a risk of lightning strike, has a system to conduct the resultant electrical charge to earth been fitted?				
Where risks remain despite the safe design measures and safeguarding and complementary protective measures adopted, have warnings and warning devices been provided?				
Has one or more clearly identifiable and quickly accessible emergency stop been provided?				
Has information and warnings on the machine been provided in the form of readily understandable symbols, pictograms or signs translated into the language of the receiving country?				
Where the health and safety of persons may be endangered by a fault in the operation of unsupervised machinery, has the machine been equipped with an acoustic or light signal warning?				
Has the information needed to control the machine been provided in a form that is unambiguous and easily understood without overloading the operator?				
Has the machine been supplied with instructions in the language of the receiving country?				
Do the instructions include putting into service safely, safe use, handling, assembly, dismantling, adjustment, maintenance and cleaning?				
Has the machine been marked with a CE mark, where applicable?				