


ANNEX 1

RISK ASSESSMENT

Essential health and safety requirements relating to design and construction of machinery

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This document was drafted according to the information in the 2006/42/EC Directive "*Machinery directive*" and it is a method to list and evaluate the Main health and safety requirements relating to the design and manufacturing of the machines.

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Prerequisite:
Art. 1.1.1
Definitions

Text:

For the purpose of this Annex:

- a) 'hazard' means a potential source of injury or damage to health;
- b) 'danger zone' means any zone within and/or around machinery in which a person is subject to a risk to his health or safety;
- c) 'exposed person' means any person wholly or partially in a danger zone;
- d) 'operator' means the person or persons installing, operating, adjusting, maintaining, cleaning, repairing or moving machinery;
- e) 'risk' means a combination of the probability and the degree of an injury or damage to health that can arise in a hazardous situation;
- f) 'guard' means a part of the machinery used specifically to provide protection by means of a physical barrier;
- g) 'protective device' means a device (other than a guard) which reduces the risk, either alone or in conjunction with a guard;
- h) 'intended use' means the use of machinery in accordance with the information provided in the instructions for use;
- i) 'reasonably foreseeable misuse' means the use of machinery in a way not intended in the instructions for use, but which may result from readily predictable human behaviour.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010	GENERIC RISK DUE TO MISUNDERSTANDING INFORMATION	MACHINE MANAGEMENT	<i>The definitions reported in point 1.1.1 of the appendix I of the 2006/42/EC Directive are included and used in the documents.</i>	USER MANUAL

Prerequisite: Art. 1.1.2 – a) Principles of safety integration	Text: Machinery must be designed and constructed so that it is fitted for its function, and can be operated, adjusted and maintained without putting persons at risk when these operations are carried out under the conditions foreseen but also taking into account any reasonably foreseeable misuse thereof. The aim of measures taken must be to eliminate any risk throughout the foreseeable lifetime of the machinery including the phases of transport, assembly, dismantling, disabling and scrapping.
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References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	NOT PROPER USE OF MACHINE	MACHINE	<p><i>The machine was designed and installed to function automatically: it can be supervised by one trained operator (more operator can be involved for operation of charge/discharge balnks/products/cases)</i></p> <p><i>Machine command are user-friendly and labelled</i></p> <p><i>A microprocessor system manages the machine functioning.</i></p> <p><i>Logic interlocks and electromechanical systems stop the machine functioning if an anomaly is detected.</i></p> <p><i>The user and maintenance manual defines the machine modes of use.</i></p> <p><i>It also describe the standard operative procedure like maintenance and change size; in this procedure are describe:</i></p> <p><i>Operator number</i></p> <p><i>Operator type</i></p> <p><i>Macchine state</i></p> <p><i>DPI requested</i></p> <p><i>Way to act the procedure</i></p> <p><i>Advertance and residual risk</i></p>	<p>Wiring diagram</p> <p>Pneumatic diagram</p> <p>USER MANUAL</p>

Prerequisite:
Art. 1.1.2 – b)
Principles of
safety
integration

Text:

In selecting the most appropriate methods, the manufacturer or his authorised representative must apply the following principles, in the order given:

- eliminate or reduce risks as far as possible (inherently safe machinery design and construction),
- take the necessary protective measures in relation to risks that cannot be eliminated,
- inform users of the residual risks due to any shortcomings of the protective measures adopted, indicate whether any particular training is required and specify any need to provide personal protective equipment.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	EXPOSURE TO RESIDUAL RISK	MACHINE	<p><i>All accessible parts are intrinsic safe</i></p> <p><i>All risks linked to dangerous are reduced by proper guard: machine can run only if guard are closed, operative and no fault are detected</i></p> <p><i>In order to reduce residual risks are available procedure described in user manual</i></p> <p><i>Accessing to mobile dangerous machine parts requires: stopping the machine</i></p> <p><i>command to unlock safety movable interlocked guard</i></p> <p><i>The devices installed stop in a time < to the time required for reach them (or in any case <1s) according to the opening of a mobile guard.</i></p> <p><i>All electrical live parts are protected from direct contact and have a minimum protection level of IP20, and the access to live parts contained in the electrical cabinet is subject to opening the doors with lock/electric switch</i></p> <p><i>Operator is advised with residual risk label.</i></p>	Wiring diagram Pneumatic diagram USER MANUAL

Prerequisite:
Art. 1.1.2 – c)
Principles of
safety
integration

Text:

When designing and constructing machinery and when drafting the instructions, the manufacturer or his authorised representative must envisage not only the intended use of the machinery but also any reasonably foreseeable misuse thereof.

The machinery must be designed and constructed in such a way as to prevent abnormal use if such use would engender a risk. Where appropriate, the instructions must draw the user's attention to ways — which experience has shown might occur — in which the machinery should not be used.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	GENERIC RISK DUE TO INCORRECT USE	MACHINE MANAGEMENT	<i>The user manual provides a description of the machine, its aim and its normal use. The operator is advised on the residual risks and is discouraged from operating in a manner that differs from the description</i>	USER MANUAL

Prerequisite:
Art. 1.1.2 – d)
Principles of
safety
integration

Text:
Machinery must be designed and constructed to take account of the constraints to which the operator is subject as a result of the necessary or foreseeable use of personal protective equipment.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISK OF ACCIDENT DUE TO THE DECREASE OF ATTENTION CAUSED BY FATIGUE	MACHINE MANAGEMENT	<p><i>The machine's level of automation and its simplicity determine that there is one area that is particularly hazardous for the operator: access to this zone is restricted to the opening of the interlocked mobile guards</i></p> <p><i>Effort required to the operator is reduce by design</i></p> <p><i>NIOSH assessment method is adopted</i></p>	USER MANUAL

Prerequisite:
Art. 1.1.2 – e)
Principles of
safety
integration

Text:
Machinery must be supplied with all the special equipment and accessories essential to enable it to be adjusted, maintained and used safely.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISKS WITH A MECHANICAL, ELECTRICAL AND PNEUMATIC ORIGIN	MACHINE PREPARATION AND MAINTENANCE	<p><i>The machine was designed and manufactured so it could be efficiently adjusted and maintained using ordinary tools.</i></p> <p><i>The format change operations are described in the user manual.</i></p> <p><i>The maintenance operations must be carried out exclusively by specialised technical personnel with qualifications that are greater than or equal to 1.</i></p> <p><i>All the interventions are described in the manual.</i></p>	USER MANUAL

Prerequisite: Art. 1.1.3 Materials and products	Text: The materials used to construct machinery or products used or created during its use must not endanger persons' safety or health. In particular, where fluids are used, machinery must be designed and constructed to prevent risks due to filling, use, recovery or draining.
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References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISKS OF A CHEMICAL ORIGIN	MACHINE PREPARATION AND MAINTENANCE	<p><i>The machine was manufactured mainly using steel, stainless steel, light alloys and plastic materials; there are no risks due to contact with the machine.</i></p> <p><i>The electrical components used, such as control elements, are provided with the EC marking.</i></p> <p><i>The only fluids used is pneumatic air supply and non toxic glue</i></p>	<p>Wiring diagram</p> <p>Pneumatic diagram</p> <p>USER MANUAL</p>

Prerequisite:
Art. 1.1.4
Lighting

Text:
Machinery must be supplied with integral lighting suitable for the operations concerned where the absence thereof is likely to cause a risk despite ambient lighting of normal intensity.
Machinery must be designed and constructed so that there is no area of shadow likely to cause nuisance, that there is no irritating dazzle and that there are no dangerous stroboscopic effects on moving parts due to the lighting.
Internal parts requiring frequent inspection and adjustment, and maintenance areas must be provided with appropriate lighting.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	GENERIC RISK DUE TO PHYSICAL STRESS	WORK AREA	<p><i>The machine is provided with transparent guards to increase the visibility inside the machine in order to eliminate potential blind stops that may generate risk.</i></p> <p><i>The device is devoid of actual light and, therefore, it must be connected to a zone that is adequately lit.</i></p>	USER MANUAL

Prerequisite:
Art. 1.1.5
Design of
machinery to
facilitate its
handling

Text:

Machinery, or each component part thereof, must:

- be capable of being handled and transported safely,
- be packaged or designed so that it can be stored safely and without damage.

During the transportation of the machinery and/or its component parts, there must be no possibility of sudden movements or of hazards due to instability as long as the machinery and/or its component parts are handled in accordance with the instructions. Where the weight, size or shape of machinery or its various component parts prevents them from being moved by hand, the machinery or each component part must:

- either be fitted with attachments for lifting gear, or
- be designed so that it can be fitted with such attachments, or
- be shaped in such a way that standard lifting gear can easily be attached.

Where machinery or one of its component parts is to be moved by hand, it must:

- either be easily moveable, or
- be equipped for picking up and moving safely.

Special arrangements must be made for the handling of tools and/or machinery parts which, even if lightweight, could be hazardous.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISK OF CRUSHING AND IMPACT	AREA OF MACHINE MOVEMENT	<p><i>The machine is designed to be lifted and moved with ropes and suitable lifting means (e.g. overhead travelling crane). Should there not be a suitable means for lifting, it is possible to use a forklift with shovel.</i></p> <p><i>The user manual describes the correct lifting and transport procedure, the means and equipment to use and the precautions to follow.</i></p> <p><i>The operator is required to use gloves, shoes and work clothes.</i></p> <p><i>The replaceable or adjustable parts are easy to grip or there are handles available.</i></p>	USER MANUAL

Prerequisite: Art. 1.1.6. Ergonomics	<p>Text:</p> <p>Under the intended conditions of use, the discomfort, fatigue and physical and psychological stress faced by the operator must be reduced to the minimum possible, taking into account ergonomic principles such as:</p> <ul style="list-style-type: none"> - allowing for the variability of the operator's physical dimensions, strength and stamina, - providing enough space for movements of the parts of the operator's body, - avoiding a machine-determined work rate, - avoiding monitoring that requires lengthy concentration, - adapting the man/machinery interface to the foreseeable characteristics of the operators.
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References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	GENERIC RISK DUE TO PHYSICAL STRESS	OPERATOR POSITION	<p><i>The machine can be connected in line: the machine is completely automatic, the operator must only command the START/STOP and adjust the parts according to the format when necessary.</i></p> <p><i>Also, the operator does not need to be present during the work cycle.</i></p> <p><i>The interventions are described in the manual.</i></p>	USER MANUAL

Prerequisite:
Art. 1.1.7.
Operating
positions

Text:

The operating position must be designed and constructed in such a way as to avoid any risk due to exhaust gases and/or lack of oxygen.

If the machinery is intended to be used in a hazardous environment presenting risks to the health and safety of the operator or if the machinery itself gives rise to a hazardous environment, adequate means must be provided to ensure that the operator has good working conditions and is protected against any foreseeable hazards.

Where appropriate, the operating position must be fitted with an adequate cabin designed, constructed and/or equipped to fulfil the above requirements. The exit must allow rapid evacuation. Moreover, when applicable, an emergency exit must be provided in a direction which is different from the usual exit.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
			<i>NOT RELEVANT</i>	

Prerequisite:
Art. 1.1.8.
Seating

Text:

Where appropriate and where the working conditions so permit, work stations constituting an integral part of the machinery must be designed for the installation of seats. If the operator is intended to sit during operation and the operating position is an integral part of the machinery, the seat must be provided with the machinery. The operator's seat must enable him to maintain a stable position. Furthermore, the seat and its distance from the control devices must be capable of being adapted to the operator.

If the machinery is subject to vibrations, the seat must be designed and constructed in such a way as to reduce the vibrations transmitted to the operator to the lowest level that is reasonably possible. The seat mountings must withstand all stresses to which they can be subjected. Where there is no floor beneath the feet of the operator, footrests covered with a slip-resistant material must be provided.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
			NOT RELEVANT	

Prerequisite:
Art. 1.2.1.
Safety and
reliability of
control systems

Text:

Control systems must be designed and constructed in such a way as to prevent hazardous situations from arising. Above all, they must be designed and constructed in such a way that:
— they can withstand the intended operating stresses and external influences, — a fault in the hardware or the software of the control system does not lead to hazardous situations, — errors in the control system logic do not lead to hazardous situations, — reasonably foreseeable human error during operation does not lead to hazardous situations.

Particular attention must be given to the following points:

— the machinery must not start unexpectedly, — the parameters of the machinery must not change in an uncontrolled way, where such change may lead to hazardous situations, — the machinery must not be prevented from stopping if the stop command has already been given, — no moving part of the machinery or piece held by the machinery must fall or be ejected, — automatic or manual stopping of the moving parts, whatever they may be, must be unimpeded, — the protective devices must remain fully effective or give a stop command, — the safety-related parts of the control system must apply in a coherent way to the whole of an assembly of machinery and/or partly completed machinery.

For cable-less control, an automatic stop must be activated when correct control signals are not received, including loss of communication.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 IEC EN 60204-1:2006 UNI EN ISO 13849-1:2015 UNI EN 415 serie	RISKS OF DIFFERENT ORIGIN	MACHINE	<p><i>Machine is equipped with proper control system (cable sizing, piping, cabinet, temperature control and so on)</i></p> <p><i>Safety circuit are all realized in Category 3, so in case of single fault it doesn't lead to safety function</i></p> <p><i>Machine error doesn't lead to safety function: they are detected and visualized on HMI panel</i></p> <p><i>When a command could lead to machine functioning it is not active in order to reduce possibility of human error</i></p> <p><i>Machine could start only if all safety circuit are operative and safety guard closed: to start any movement a reset command and a start command are necessary</i></p> <p><i>Stop command always has priority over the start command</i></p> <p><i>Uncontrolled fall of part and device is prevented by standard circuit for no dangerous movement and by safety circuit for dangerous movement</i></p> <p><i>The circuit reliability is obtained with regard to the indications provided within the EN 60204-1:2006 standard.</i></p> <p><i>The user manual describes the functioning modes and the command sequences to bring the machine into an operative state.</i></p>	Wiring diagram Pneumatic diagram USER MANUAL

Prerequisite:
Art. 1.2.2.
Control devices

Text:

Control devices must be:

- clearly visible and identifiable, using pictograms where appropriate,
- positioned in such a way as to be safely operated without hesitation or loss of time and without ambiguity,
- designed in such a way that the movement of the control device is consistent with its effect,
- located outside the danger zones, except where necessary for certain control devices such as an emergency stop or a teach pendant,
- positioned in such a way that their operation cannot cause additional risk,
- designed or protected in such a way that the desired effect, where a hazard is involved, can only be achieved by a deliberate action,
- made in such a way as to withstand foreseeable forces; particular attention must be paid to emergency stop devices liable to be subjected to considerable forces.

Where a control device is designed and constructed to perform several different actions, namely where there is no one-to-one correspondence, the action to be performed must be clearly displayed and subject to confirmation, where necessary.

(NEXT PAGE)

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 IEC EN 60204-1:2006 UNI EN 415 serie	RISKS WITH A MECHANICAL ORIGIN DUE TO UNPLANNED REACTIONS	MACHINE	<p><i>Command devices are connected to the control panel, they can be clearly identified and their function is marked with easy reading labels</i></p> <p><i>The machine is equipped with several pushbutton stations in accordance with use of the machine and risk assessment.</i></p> <p><i>The devices are easy to locate and their colour is in accordance with the instructions in the EN 60204-1:2006 standard.</i></p> <p><i>The manual refers to the wiring diagram, which identifies the control devices and describes their function and start mode.</i></p>	Wiring diagram Pneumatic diagram USER MANUAL

Prerequisite:
Art. 1.2.2.
Control devices

Text:

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Control devices must be so arranged that their layout, travel and resistance to operation are compatible with the action to be performed, taking account of ergonomic principles.

Machinery must be fitted with indicators as required for safe operation. The operator must be able to read them from the control position.

From each control position, the operator must be able to ensure that no-one is in the danger zones, or the control system must be designed and constructed in such a way that starting is prevented while someone is in the danger zone.

If neither of these possibilities is applicable, before the machinery starts, an acoustic and/or visual warning signal must be given. The exposed persons must have time to leave the danger zone or prevent the machinery starting up.

If necessary, means must be provided to ensure that the machinery can be controlled only from control positions located in one or more predetermined zones or locations.

Where there is more than one control position, the control system must be designed in such a way that the use of one of them precludes the use of the others, except for stop controls and emergency stops.

When machinery has two or more operating positions, each position must be provided with all the requisite control devices without the operators hindering or putting each other into a hazardous situation.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 IEC EN 60204-1:2006 UNI EN 415 serie	RISKS WITH A MECHANICAL ORIGIN DUE TO UNPLANNED REACTIONS	MACHINE	<p><i>It is only possible to start the machine by pressing the start button</i> <i>The buttons have a collar to prevent an involuntarily command</i> <i>The machine functions are displayed on the operator panel</i> <i>The user manual provides screenshots with explications.</i> <i>A series of video messages will inform the operator on the machine's functioning state.</i></p> <p><i>Machine is equipped with more controlled reset zone in order to ensure visibility on dangerous zone from reset command position</i></p>	Wiring diagram Pneumatic diagram USER MANUAL

Prerequisite:
Art. 1.2.3.
Starting

Text:

It must be possible to start machinery only by voluntary actuation of a control device provided for the purpose.

The same requirement applies:

- when restarting the machinery after a stoppage, whatever the cause,
- when effecting a significant change in the operating conditions.

However, the restarting of the machinery or a change in operating conditions may be effected by voluntary actuation of a device other than the control device provided for the purpose, on condition that this does not lead to a hazardous situation.

For machinery functioning in automatic mode, the starting of the machinery, restarting after a stoppage, or a change in operating conditions may be possible without intervention, provided this does not lead to a hazardous situation.

Where machinery has several starting control devices and the operators can therefore put each other in danger, additional devices must be fitted to rule out such risks. If safety requires that starting and/or stopping must be performed in a specific sequence, there must be devices which ensure that these operations are performed in the correct order.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 IEC EN 60204-1:2006 UNI EN 415 serie	RISKS WITH A MECHANICAL ORIGIN DUE TO UNPLANNED REACTIONS	MACHINE	<p><i>Due to the machine's electro mechanical circuit, the machine can only function if all the interlocked protections are closed and the protection circuit is reactivated by applying pressure onto the blue RESET button. Starting the machine always requires pressing the START button. All hazardous movements are inhibited when the GUARDS are OPEN.</i></p> <p><i>Following a normal stop due to an anomaly, emergency or temporary absence of power, the operator is always require to reactivate the electromechanical safety circuit by pressing the RESET button before pressing the START button.</i></p> <p><i>The user manual provides instructions on using the RESET button to guide the operator in overcoming any inconveniences and allowing the machine to restart.</i></p>	Wiring diagram Pneumatic diagram USER MANUAL

Prerequisite: Art. 1.2.4.1 Normal stop	Text: Machinery must be fitted with a control device whereby the machinery can be brought safely to a complete stop. Each workstation must be fitted with a control device to stop some or all of the functions of the machinery, depending on the existing hazards, so that the machinery is rendered safe. The machinery's stop control must have priority over the start controls. Once the machinery or its hazardous functions have stopped, the energy supply to the actuators concerned must be cut off.
Art. 1.2.4.2 Operational stop	Where, for operational reasons, a stop control that does not cut off the energy supply to the actuators is required, the stop condition must be monitored and maintained.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 IEC EN 60204-1:2006 UNI EN 415 serie	RISKS WITH A MECHANICAL ORIGIN DUE TO UNPLANNED REACTIONS	MACHINE	<i>The normal machine stop can be obtained by pressing the "STOP" button adjacent to the START button. The STOP button has priority over the START button.</i> The user manual refers to the wiring diagram, which identifies the connection of the control device and illustrates its function.	Wiring diagram Pneumatic diagram USER MANUAL

**Prerequisite:
Art. 1.2.4.3
Emergency stop**

Text:

Machinery must be fitted with one or more emergency stop devices to enable actual or impending danger to be averted.

The following exceptions apply:

— machinery in which an emergency stop device would not lessen the risk, either because it would not reduce the stopping time or because it would not enable the special measures required to deal with the risk to be taken, — portable hand-held and/or hand-guided machinery.

The device must:

— have clearly identifiable, clearly visible and quickly accessible control devices, — stop the hazardous process as quickly as possible, without creating additional risks, — where necessary, trigger or permit the triggering of certain safeguard movements.

Once active operation of the emergency stop device has ceased following a stop command, that command must be sustained by engagement of the emergency stop device until that engagement is specifically overridden; it must not be possible to engage the device without triggering a stop command; it must be possible to disengage the device only by an appropriate operation, and disengaging the device must not restart the machinery but only permit restarting. The emergency stop function must be available and operational at all times, regardless of the operating mode. Emergency stop devices must be a back-up to other safeguarding measures and not a substitute for them.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 IEC EN 60204-1:2006 UNI EN ISO 13850:2015 UNI EN 415 serie	RISKS WITH A MECHANICAL ORIGIN DUE TO UNPLANNED REACTIONS	MACHINE	<p><i>The red/yellow emergency pushbutton are connected for the machine stop and they comply with the user function: are placed as use of machine require in according to the risk assessment</i></p> <p><i>The emergency command is carried out in accordance with the UNI EN ISO 13850: machine stops completely.</i></p>	Wiring diagram Pneumatic diagram USER MANUAL

Prerequisite: Art. 1.2.4.4 Assembly of machinery	Text: In the case of machinery or parts of machinery designed to work together, the machinery must be designed and constructed in such a way that the stop controls, including the emergency stop devices, can stop not only the machinery itself but also all related equipment, if its continued operation may be dangerous.
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References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 IEC EN 60204-1:2006 UNI EN ISO 11161:2010 UNI EN 415 serie	RISKS WITH A MECHANICAL ORIGIN DUE TO UNPLANNED REACTIONS	MACHINE ASSEMBLY	<i>In case of assembly machines or machine parts, necessary safety signals are exchanged in accordance with UNI EN ISO 13849-1:2015</i> <i>Safety function implemented are</i> - emergency stop function depending on span of control zone - safety function initiated by safety guard when opening of this guard exposes operator to multiple machine dangerous contact	Wiring diagram Pneumatic diagram USER MANUAL

Prerequisite:
Art. 1.2.5.
Selection of
control or
operating
modes

Text:

The control or operating mode selected must override all other control or operating modes, with the exception of the emergency stop.

If machinery has been designed and constructed to allow its use in several control or operating modes requiring different protective measures and/or work procedures, it must be fitted with a mode selector which can be locked in each position. Each position of the selector must be clearly identifiable and must correspond to a single operating or control mode.

The selector may be replaced by another selection method which restricts the use of certain functions of the machinery to certain categories of operator.

(NEXT PAGE)

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 IEC EN 60204-1:2006 UNI EN ISO 13849-1:2015 UNI EN 415 serie	RISKS WITH A MECHANICAL ORIGIN DUE TO UNPLANNED REACTIONS	MACHINE	<i>The machine has the option of functioning under various configurations based on the size selected</i> <i>The machine has two operational modes: manual/automatic</i> <i>The risk reduction strategy does not depend by command mode</i> <i>Movements are not possible when the guards are open.</i>	Wiring diagram Pneumatic diagram USER MANUAL

Prerequisite:
Art. 1.2.5.
Selection of
control or
operating
modes

Text:

If, for certain operations, the machinery must be able to operate with a guard displaced or removed and/or a protective device disabled, the control or operating mode selector must simultaneously:

- disable all other control or operating modes,
- permit operation of hazardous functions only by control devices requiring sustained action,
- permit the operation of hazardous functions only in reduced risk conditions while preventing hazards from linked sequences,
- prevent any operation of hazardous functions by voluntary or involuntary action on the machine's sensors.

If these four conditions cannot be fulfilled simultaneously, the control or operating mode selector must activate other protective measures designed and constructed to ensure a safe intervention zone.

In addition, the operator must be able to control operation of the parts he is working on from the adjustment point.

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References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
			<i>Described on the previous page</i>	

Prerequisite:
Art. 1.2.6.
Failure of the
power supply

Text:

The interruption, the re-establishment after an interruption or the fluctuation in whatever manner of the power supply to the machinery must not lead to dangerous situations.

Particular attention must be given to the following points:

- the machinery must not start unexpectedly,
- the parameters of the machinery must not change in an uncontrolled way when such change can lead to hazardous situations,
- the machinery must not be prevented from stopping if the command has already been given,
- no moving part of the machinery or piece held by the machinery must fall or be ejected,
- automatic or manual stopping of the moving parts, whatever they may be, must be unimpeded,
- the protective devices must remain fully effective or give a stop command.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 1037:2008 UNI EN 4414:2012 UNI EN 415 serie	RISKS WITH A MECHANICAL ORIGIN DUE TO UNPLANNED REACTIONS	MACHINE	<i>A circuit failure or electric power interruption causes the machine stop.</i> <i>A drop or rise in pneumatic power pressure causes the machine stop.</i> <i>Reactivating the normal power conditions does not cause the machine to restart immediately as it will be subject to the normal start procedure as provided for and described in the user manual.</i>	Wiring diagram Pneumatic diagram USER MANUAL

Prerequisite:
Art. 1.3.1.
Risk of loss of
stability

Text:
Machinery and its components and fittings must be stable enough to avoid overturning, falling or uncontrolled movements during transportation, assembly, dismantling and any other action involving the machinery.
If the shape of the machinery itself or its intended installation does not offer sufficient stability, appropriate means of anchorage must be incorporated and indicated in the instructions.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISK OF CRUSHING AND IMPACT	MACHINE	<i>The manual provides instructions to align and position the machine in installation area. The manual provides instructions for the correct machine use, cleaning, maintenance and dismantling.</i>	Wiring diagram Pneumatic diagram USER MANUAL

Prerequisite: Art. 1.3.2. Risk of break-up during operation	<p>Text:</p> <p>The various parts of machinery and their linkages must be able to withstand the stresses to which they are subject when used.</p> <p>The durability of the materials used must be adequate for the nature of the working environment foreseen by the manufacturer or his authorised representative, in particular as regards the phenomena of fatigue, ageing, corrosion and abrasion.</p> <p>The instructions must indicate the type and frequency of inspections and maintenance required for safety reasons. They must, where appropriate, indicate the parts subject to wear and the criteria for replacement.</p> <p>(NEXT PAGE)</p>
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References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN ISO 4414:2012 UNI EN 415 serie	RISK OF CUTTING, CRUSHING AND IMPACT	MACHINE	<p><i>Respecting the manufacturing performance requires a rigid structure. This means that the machine has the correct dimensions in order to resist the prevented stress and the consequences of failures or anomalies.</i></p> <p><i>The choice of materials and dimensions are based on years of experience, dimensioning and checks.</i></p> <p><i>The guards are dimensioned so that they protect the operator from the remote possibility of ejecting the product (whose associated energy is still inferior to 4J)</i></p> <p><i>The user and maintenance manual reports on the position and describes the maintenance points, the maintenance procedure and the periodic controls to be carried out in order to avoid incurring risks due to breakdowns caused by material fatigue or wear.</i></p>	Wiring diagram Pneumatic diagram USER MANUAL

<p>Prerequisite: Art. 1.3.2. Risk of break-up during operation</p>	<p>Text: (FOLLOWS FROM PREVIOUS PAGE)</p> <p>Where a risk of rupture or disintegration remains despite the measures taken, the parts concerned must be mounted, positioned and/or guarded in such a way that any fragments will be contained, preventing hazardous situations.</p> <p>Both rigid and flexible pipes carrying fluids, particularly those under high pressure, must be able to withstand the foreseen internal and external stresses and must be firmly attached and/or protected to ensure that no risk is posed by a rupture.</p> <p>Where the material to be processed is fed to the tool automatically, the following conditions must be fulfilled to avoid risks to persons:</p> <ul style="list-style-type: none"> — when the workpiece comes into contact with the tool, the latter must have attained its normal working condition, — when the tool starts and/or stops (intentionally or accidentally), the feed movement and the tool movement must be coordinated.
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References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
<p>UNI EN ISO 12100:2010</p> <p>UNI EN ISO 4414:2012</p> <p>UNI EN 415 serie</p>	<p>RISK OF CUTTING, CRUSHING AND IMPACT</p>	<p>PNEUMATIC CIRCUIT</p>	<p><i>The pneumatic circuit provides a Filter-Regulator unit to regulate the compressed air at the entrance to the connection with the costumer network. This guarantees the maintenance of the pressure level within the parameters provided by the manufacturer.</i></p> <p><i>The pneumatic circuit is always discharged of residual power with a quick exhaust valve in accordance with the UNI EN ISO 13849-1:2015 in case of emergency and/or access to dangerous parts</i></p> <p><i>The circuit wiring uses the usual quick-connection commercial systems, which are suitable for the operation pressure; the pneumatic pipe pathways are accurate in order to avoid abrasions or engaging with protruding or mobile parts.</i></p>	<p>Wiring diagram</p> <p>Pneumatic diagram</p> <p>USER MANUAL</p>

Prerequisite:
Art. 1.3.3.
Risks due to
falling or
ejected objects

Text:
Precautions must be taken to prevent risks from falling or ejected objects.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 4414:2012 UNI EN 415 serie	RISK OF IMPACT	MACHINE	<i>During the machine function, the operator is isolated from the working zone due to the interpositioned fixed and mobile guards.</i> <i>The position of bodies fitted with a vertical motor is guaranteed thanks to the correct dimensioning of the devices</i>	Wiring diagram Pneumatic diagram USER MANUAL

Prerequisite:
Art. 1.3.4.
Risks due to
surfaces, edges
or angles

Text:
Insofar as their purpose allows, accessible parts of the machinery must have no sharp edges, no sharp angles and no rough surfaces likely to cause injury.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISK OF CUTTING, ABRASION AND TRAPPING	MACHINE	<i>All the parts that come into contact with the operator for normal use or adjustments are accurately rounded and finished, including the parts that cannot directly be seen; the ridges are blunted and do not cause a risk of injury due to accidental contact if said contact is soft. All the parts are overall suitably finished and do not have sharp strings or filaments or surfaces that are rough enough to cause injury upon contact.</i>	USER MANUAL

Prerequisite:

Art. 1.3.5.
Risks related to
combined
machinery

Text:

Where the machinery is intended to carry out several different operations with manual removal of the piece between each operation (combined machinery), it must be designed and constructed in such a way as to enable each element to be used separately without the other elements constituting a risk for exposed persons.

For this purpose, it must be possible to start and stop separately any elements that are not protected.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
			NOT RELEVANT	

Prerequisite:
Art. 1.3.6.
Risks related to
variations in
operating
conditions

Text:
Where the machinery performs operations under different conditions of use, it must be designed and constructed in such a way that selection and adjustment of these conditions can be carried out safely and reliably.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN ISO 13849-1:2015 UNI EN 415 serie	RISKS OF A MECHANICAL ORIGIN	MACHINE	<i>The machine has parts that must be adjusted in order to allow for manufacturing using various size.</i> <i>The procedures and the behaviour to adopt are described in the user manual.</i> <i>The potential fault/error/failure is not recognised by the machine but in no case should it create a risk for the operator</i> <i>There are not currently any machine start prohibition devices carried out in accordance with UNI EN ISO 13849-1:2015</i>	USER MANUAL

Prerequisite:
Art. 1.3.7.
Risks related to
moving parts

Text:
The moving parts of machinery must be designed and constructed in such a way as to prevent risks of contact which could lead to accidents or must, where risks persist, be fitted with guards or protective devices.
All necessary steps must be taken to prevent accidental blockage of moving parts involved in the work. In cases where, despite the precautions taken, a blockage is likely to occur, the necessary specific protective devices and tools must, when appropriate, be provided to enable the equipment to be safely unblocked.
The instructions and, where possible, a sign on the machinery shall identify these specific protective devices and how they are to be used.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISK OF CRUSHING, DRAGGING, SHEARING AND IMPACT	MACHINE	<p><i>The machine motor transmission parts are only accessible by opening the interlocked mobile guards and/or removing the fixed guards where present.</i></p> <p><i>The adopted risk prevention strategy prevents the segregation of the machine's mobile parts through a combination of fixed and mobile guards, which are electrically interlocked with the control system.</i></p> <p><i>The user manual identifies the protections present in the machine.</i></p> <p><i>There are warning/prohibition/obligation pictograms on the machine areas where there are residual risks</i></p>	<p>Wiring diagram</p> <p>Layout</p> <p>USER MANUAL</p>

Prerequisite:
Art. 1.3.8.1.
Moving
transmission
parts

Text:
Guards designed to protect persons against the hazards generated by moving transmission parts must be:
— either fixed guards as referred to in section 1.4.2.1, or
— interlocking movable guards as referred to in section 1.4.2.2.
Interlocking movable guards should be used where frequent access is envisaged.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISK OF CRUSHING, DRAGGING, SHEARING, IMPACT AND ABRASION	MACHINE	<i>The guards are designed to guarantee maximum access for maintenance interventions by maintaining the prerequisites listed in the previous point.</i> <i>The user manual identifies the protections present in the machine.</i>	Wiring diagram Layout USER MANUAL

Prerequisite: Art. 1.3.8.2. Moving parts involved in the process	<p>Text:</p> <p>Guards or protective devices designed to protect persons against the hazards generated by moving parts involved in the process must be:</p> <ul style="list-style-type: none"> — either fixed guards as referred to in section 1.4.2.1, or — interlocking movable guards as referred to in section 1.4.2.2, or — protective devices as referred to in section 1.4.3, or — a combination of the above. <p>However, when certain moving parts directly involved in the process cannot be made completely inaccessible during operation owing to operations requiring operator intervention, such parts must be fitted with:</p> <ul style="list-style-type: none"> — fixed guards or interlocking movable guards preventing access to those sections of the parts that are not used in the work, and — adjustable guards as referred to in section 1.4.2.3 restricting access to those sections of the moving parts where access is necessary.
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References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN ISO 14119:2013 UNI EN ISO 13857:2008 UNI EN 415 serie	RISK OF CRUSHING, DRAGGING, SHEARING, IMPACT AND ABRASION	MACHINE	<p><i>The adopted risk prevention strategy prevents the segregation of the machine's mobile parts through a combination of fixed and mobile guards, which are electrically interlocked with the control system.</i></p> <p><i>The distances according to the references to legislation are respected.</i></p> <p><i>The user manual identifies the protections present in the machine.</i></p>	Wiring diagram Layout USER MANUAL

Prerequisite:
Art. 1.3.9.
Risks of
uncontrolled
movements

Text:

When a part of the machinery has been stopped, any drift away from the stopping position, for whatever reason other than action on the control devices, must be prevented or must be such that it does not present a hazard.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 14119:2013 UNI EN ISO 13857:2008 UNI EN 415 serie	RISK OF CRUSHING	MACHINE	<p><i>Accessing the machine causes the mobile parts to stop</i></p> <p><i>The devices are prevented from deviating from their stop position by positioning the machine correctly: in any case, if a mobile part deviates from the stop position then this does not put the operator at risk.</i></p> <p><i>The devices that are subject to the force of gravity are maintained in position with brakes/stops/storage of energy with a positive logic unit</i></p>	Wiring diagram Pneumatic diagram USER MANUAL

Prerequisite:
Art. 1.4.1.
General
requirements

Text:

Guards and protective devices must:

- be of robust construction,
- be securely held in place,
- not give rise to any additional hazard,
- not be easy to by-pass or render non-operational,
- be located at an adequate distance from the danger zone,
- cause minimum obstruction to the view of the production process, and
- enable essential work to be carried out on the installation and/or replacement of tools and for maintenance purposes by restricting access exclusively to the area where the work has to be done, if possible without the guard having to be removed or the protective device having to be disabled.

In addition, guards must, where possible, protect against the ejection or falling of materials or objects and against emissions generated by the machinery.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISKS OF A MECHANICAL ORIGIN	MACHINE	<p><i>The fixed protections that separate the parts only require control during the maintenance phases, they can be made of steel sheet (flat or template, as required) and/or methacrylate panels (or polycarbonate) that are firmly fastened with screws.</i></p> <p><i>The mobile protections that segregate the inside of the machine are made of methacrylate (or polycarbonate) and they are bound to the structure with joints or on sliding guides: they are fitted with an interlock device.</i></p> <p><i>All the mobile protections that are fitted with a lock for the interlock devices have a functional logic unit.</i></p>	Wiring diagram USER MANUAL

Prerequisite:
Art. 1.4.2.1.
Fixed guards

Text:
Fixed guards must be fixed by systems that can be opened or removed only with tools.
Their fixing systems must remain attached to the guards or to the machinery when the guards are removed.
Where possible, guards must be incapable of remaining in place without their fixings.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN ISO 14120:2015 UNI EN 415 serie	RISKS OF A MECHANICAL ORIGIN	MACHINE	<i>The fixed protections that separate the parts only require control during the maintenance phases, they can be made of steel sheet (flat or template, as required) and/or methacrylate panels (or polycarbonate) that are firmly fastened with screws If there are no screws then the protection cannot remain in position.</i>	USER MANUAL

Prerequisite:
Art. 1.4.2.2.
Interlocking
movable guards

Text:

Interlocking movable guards must:

- as far as possible remain attached to the machinery when open,
- be designed and constructed in such a way that they can be adjusted only by means of an intentional action.

Interlocking movable guards must be associated with an interlocking device that:

- prevents the start of hazardous machinery functions until they are closed and
- gives a stop command whenever they are no longer closed.

Where it is possible for an operator to reach the danger zone before the risk due to the hazardous machinery functions has ceased, movable guards must be associated with a guard locking device in addition to an interlocking device that:

- prevents the start of hazardous machinery functions until the guard is closed and locked, and
- keeps the guard closed and locked until the risk of injury from the hazardous machinery functions has ceased.

Interlocking movable guards must be designed in such a way that the absence or failure of one of their components prevents starting or stops the hazardous machinery functions.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 14119:2013 UNI EN 415 serie	RISKS OF A MECHANICAL ORIGIN	MACHINE	<p><i>The mobile protections that segregate the inside of the machine are made of methacrylate (or polycarbonate) and they are bound to the structure with joints or on sliding guides: they are fitted with an interlock device.</i></p> <p><i>All the mobile protections that are fitted with a lock for the interlock devices have a functional logic unit.</i></p>	Wiring diagram USER MANUAL

Prerequisite:
Art. 1.4.2.3.
Adjustable
guards
restricting
access

Text:
Adjustable guards restricting access to those areas of the moving parts strictly necessary for the work must be:
— adjustable manually or automatically, depending on the type of work involved, and
— readily adjustable without the use of tools.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
			NOT RELEVANT	

Prerequisite:
Art. 1.4.3.
Special
requirements
for protective
devices

Text:
Protective devices must be designed and incorporated into the control system in such a way that:
— moving parts cannot start up while they are within the operator's reach,
— persons cannot reach moving parts while the parts are moving, and
— the absence or failure of one of their components prevents starting or stops the moving parts.
Protective devices must be adjustable only by means of an intentional action.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
			<i>NOT RELEVANT</i>	

Prerequisite: Art. 1.5.1. Electricity supply	Text: Where machinery has an electricity supply, it must be designed, constructed and equipped in such a way that all hazards of an electrical nature are or can be prevented. The safety objectives set out in Directive 73/23/EEC shall apply to machinery. However, the obligations concerning conformity assessment and the placing on the market and/or putting into service of machinery with regard to electrical hazards are governed solely by this Directive.
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References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
IEC EN 60204-1:2006 UNI EN 415 serie	RISKS DUE TO ELECTROCUTION AND FIRE	MACHINE	<p><i>The electrical equipment and its application to the device (wiring) is manufactured in accordance with the EN 60204-1 standard</i></p> <p><i>The electrical cases and all the casings of electrical control components have an IP54 minimum protection level.</i></p> <p><i>The casings of the live parts can only be opened using tools.</i></p> <p><i>The electrical components that are used are supplied with a declaration of conformity.</i></p> <p><i>The user and maintenance manual describes the safe modes of connection to the electric network.</i></p>	Wiring diagram USER MANUAL (DDC copy)

Prerequisite:
Art. 1.5.2.
Static electricity

Text:
Machinery must be designed and constructed to prevent or limit the build-up of potentially dangerous electrostatic charges and/or be fitted with a discharging system.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
IEC EN 60204-1:2006 UNI EN 415 serie	RISKS DUE TO ELECTROCUTION AND FIRE	MACHINE	<i>The metal machine structure and the connection to the ground conductor for all large masses and surfaces prevents electrostatic charges from forming.</i>	Wiring diagram USER MANUAL

Prerequisite: Art. 1.5.3. Energy supply other than electricity	Text: Where machinery is powered by source of energy other than electricity, it must be so designed, constructed and equipped as to avoid all potential risks associated with such sources of energy.
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References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN ISO 4414:2012 UNI EN 415 serie	RISK OF IMPACT	MACHINE	<p><i>The pneumatic device entrance is equipped with a pressure regulator and filter unit with a pressure gauge that makes it possible to adapt the supply characteristics. A downstream unit pressure switch, fitted with an electrical contact, monitors the pneumatic power supply conditions. The pneumatic circuit is always discharged of residual power with a quick exhaust valve in accordance with the UNI EN ISO 13849-1:2015 in case of emergency and/or access to dangerous parts</i></p> <p><i>The user and maintenance manual describes the connection and adjustment modes.</i></p> <p><i>The materials used to manufacture the pneumatic device were selected for their resistance to stress due to use, and their maintenance requirements; the disposition on the machine, at the edge, is implemented to avoid the feed pipes remaining trapped between moving parts, narrowing, or breaking or detaching from a connector, which could hit the operator or any exposed individual.</i></p>	Wiring diagram Pneumatic diagram USER MANUAL

Prerequisite:
Art. 1.5.4.
Errors of fitting

Text:
Errors likely to be made when fitting or refitting certain parts which could be a source of risk must be made impossible by the design and construction of such parts or, failing this, by information given on the parts themselves and/or their housings. The same information must be given on moving parts and/or their housings where the direction of movement needs to be known in order to avoid a risk.
Where necessary, the instructions must give further information on these risks.
Where a faulty connection can be the source of risk, incorrect connections must be made impossible by design or, failing this, by information given on the elements to be connected and, where appropriate, on the means of connection.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISKS OF A MECHANICAL, PNEUMATIC AND ELECTRICAL ORIGIN	MACHINE	<p><i>The machine is supplied with pictograms provided in the manual.</i></p> <p><i>The manual provides the instructions regarding dismantling components for adjustment and maintenance operations</i></p> <p><i>The instructions on the pneumatic and wiring diagrams reduce the risk deriving from their new wiring</i></p>	<p>Wiring diagram</p> <p>Pneumatic diagram</p> <p>USER MANUAL</p>

Prerequisite:
Art. 1.5.5.
Extreme
temperatures

Text:
Steps must be taken to eliminate any risk of injury arising from contact with or proximity to machinery parts or materials at high or very low temperatures.
The necessary steps must also be taken to avoid or protect against the risk of hot or very cold material being ejected.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
			NOT RELEVANT	

Prerequisite:
Art. 1.5.6.
Fire

Text:
Machinery must be designed and constructed in such a way as to avoid any risk of fire or overheating posed by the machinery itself or by gases, liquids, dust, vapours or other substances produced or used by the machinery.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN 415 serie			<i>Despite the machine working on protects that are potentially inflammable (due to paper/cardboard), the machine is COMPLETELY DEVOID of a source of ignition.</i>	

Prerequisite:
Art. 1.5.7.
Explosion

Text:

Machinery must be designed and constructed in such a way as to avoid any risk of explosion posed by the machinery itself or by gases, liquids, dust, vapours or other substances produced or used by the machinery.

Machinery must comply, as far as the risk of explosion due to its use in a potentially explosive atmosphere is concerned, with the provisions of the specific Community Directives.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN 415 serie			<p><i>The machine cannot operate in environments that are subject to the formation of an explosive atmosphere.</i></p> <p><i>The manual explicitly forbids using the machine in such an environment.</i></p>	USER MANUAL

Prerequisite:
Art. 1.5.8.
Noise

Text:
Machinery must be designed and constructed in such a way that risks resulting from the emission of airborne noise are reduced to the lowest level, taking account of technical progress and the availability of means of reducing noise, in particular at source.
The level of noise emission may be assessed with reference to comparative emission data for similar machinery.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISKS DUE TO: LOSS OF HEARING ACUITY AND FATIGUE	MACHINE	<i>The airborne sound emitted by the machine is lower than 80dB. The manual reports information on the detected values</i>	USER MANUAL

Prerequisite:
Art. 1.5.9.
Vibrations

Text:
Machinery must be designed and constructed in such a way that risks resulting from vibrations produced by the machinery are reduced to the lowest level, taking account of technical progress and the availability of means of reducing vibration, in particular at source.
The level of vibration emission may be assessed with reference to comparative emission data for similar machinery.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
			<i>NOT RELEVANT</i>	

Prerequisite:
Art. 1.5.10.
Radiations

Text:
Undesirable radiation emissions from the machinery must be eliminated or be reduced to levels that do not have adverse effects on persons.
Any functional ionising radiation emissions must be limited to the lowest level which is sufficient for the proper functioning of the machinery during setting, operation and cleaning. Where a risk exists, the necessary protective measures must be taken.
Any functional non-ionising radiation emissions during setting, operation and cleaning must be limited to levels that do not have adverse effects on persons.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
CEI EN 61000-6-4:2006 CEI EN 61000-6-2:2016 UNI EN 415 serie	RISK DUE TO ELECTROMAGNETIC RADIATION	MACHINE	<i>The devices are EC certified and comply with the 2015/30/EC directive Intallation is realized in order to reduce influences</i>	INVERTER manual DRIVER manual Wiring diagram

Prerequisite:
Art. 1.5.11.
External
radiations

Text:
Machinery must be designed and constructed in such a way that external radiation does not interfere with its operation.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 IEC EN 60204-1:2006 UNI EN 415 serie	RISKS WITH A MECHANICAL ORIGIN DUE TO UNPLANNED REACTIONS	MACHINE	<i>The electronic equipment that controls and governs the machine is equipped with declarations of conformity relating to the electromagnetic compatibility.</i> <i>The equipment is used and connected based on the manufacturer's instructions.</i>	Wiring diagram

Prerequisite:
Art. 1.5.12.
Laser radiations

Text:

Where laser equipment is used, the following should be taken into account:

- laser equipment on machinery must be designed and constructed in such a way as to prevent any accidental radiation,
- laser equipment on machinery must be protected in such a way that effective radiation, radiation produced by reflection or diffusion and secondary radiation do not damage health,
- optical equipment for the observation or adjustment of laser equipment on machinery must be such that no health risk is created by laser radiation.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
			NOT RELEVANT	

Prerequisite:
Art. 1.5.13.
Emissions of
hazardous
materials and
substances

Text:

Machinery must be designed and constructed in such a way that risks of inhalation, ingestion, contact with the skin, eyes and mucous membranes and penetration through the skin of hazardous materials and substances which it produces can be avoided.

Where a hazard cannot be eliminated, the machinery must be so equipped that hazardous materials and substances can be contained, evacuated, precipitated by water spraying, filtered or treated by another equally effective method.

Where the process is not totally enclosed during normal operation of the machinery, the devices for containment and/or evacuation must be situated in such a way as to have the maximum effect.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
			<i>NOT RELEVANT</i>	

Prerequisite:
Art. 1.5.14.
Risk of being
trapped in a
machine

Text:
Machinery must be designed, constructed or fitted with a means of preventing a person from being enclosed within it or, if that is impossible, with a means of summoning help.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISKS WITH A MECHANICAL ORIGIN DUE TO UNPLANNED REACTIONS	MACHINE	<p><i>The machine does not have any blind spots and/or trapping area and all the protections available are transparent.</i></p> <p><i>If there are blind spots then there are localised reset controls by the hidden access areas</i></p>	Layout USER MANUAL

Prerequisite:

Art. 1.5.15.
Risk of slipping,
tripping or
falling

Text:

Parts of the machinery where persons are liable to move about or stand must be designed and constructed in such a way as to prevent persons slipping, tripping or falling on or off these parts.
Where appropriate, these parts must be fitted with handholds that are fixed relative to the user and that enable them to maintain their stability.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
			NOT RELEVANT	

Prerequisite:
Art. 1.5.16.
Lightning

Text:
Machinery in need of protection against the effects of lightning while being used must be fitted with a system for conducting the resultant electrical charge to earth.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISKS DUE TO ELECTROCUTION	MACHINE	<i>The electrical equipment is fitted with an equipotential system. The electrical equipment, the metal structure and the metal components have an earthing system.</i>	Wiring diagram USER MANUAL

Prerequisite: Art. 1.6.1. Machinery maintenance	<p>Text:</p> <p>Adjustment and maintenance points must be located outside danger zones. It must be possible to carry out adjustment, maintenance, repair, cleaning and servicing operations while machinery is at a standstill.</p> <p>If one or more of the above conditions cannot be satisfied for technical reasons, measures must be taken to ensure that these operations can be carried out safely (see section 1.2.5).</p> <p>In the case of automated machinery and, where necessary, other machinery, a connecting device for mounting diagnostic fault-finding equipment must be provided.</p> <p>Automated machinery components which have to be changed frequently must be capable of being removed and replaced easily and safely. Access to the components must enable these tasks to be carried out with the necessary technical means in accordance with a specified operating method.</p>
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References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISKS OF A MECHANICAL ORIGIN	MACHINE	<p><i>All mechanical adjustment, lubrication and maintenance operations must be carried out when the machine is stopped and isolated from power sources.</i></p> <p><i>Therefore, there are switches that create isolation from the electrical power line and a disconnect tap with a discharge for the pneumatic device isolation and depressurisation.</i></p> <p><i>The user manual has a chapter dedicated to machine cleaning and ordinary maintenance operation, including how they should be carried out safely, and the maintenance interventions to carry out, as well as their frequency.</i></p> <p><i>The user manual identifies the requirements for the professional requirements for the operators that operate on the machine.</i></p>	USER MANUAL

Prerequisite:
Art. 1.6.2.
Access to
operating
positions and
servicing points

Text:
Machinery must be designed and constructed in such a way as to allow access in safety to all areas where intervention is necessary during operation, adjustment and maintenance of the machinery.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISKS OF A MECHANICAL ORIGIN	MACHINE	<i>The machine was manufactured to provide maximum access to the parts that require adjustment/maintenance/replacement</i>	USER MANUAL

Prerequisite:
Art. 1.6.3.
Isolation of
energy sources

Text:

Machinery must be fitted with means to isolate it from all energy sources. Such isolators must be clearly identified. They must be capable of being locked if reconnection could endanger persons. Isolators must also be capable of being locked where an operator is unable, from any of the points to which he has access, to check that the energy is still cut off.

In the case of machinery capable of being plugged into an electricity supply, removal of the plug is sufficient, provided that the operator can check from any of the points to which he has access that the plug remains removed.

After the energy is cut off, it must be possible to dissipate normally any energy remaining or stored in the circuits of the machinery without risk to persons.

As an exception to the requirement laid down in the previous paragraphs, certain circuits may remain connected to their energy sources in order, for example, to hold parts, to protect information, to light interiors, etc. In this case, special steps must be taken to ensure operator safety.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 IEC EN 60204-1:2006 UNI EN ISO 4414:2012 UNI EN 415 serie	RISKS OF A MECHANICAL, PNEUMATIC AND ELECTRICAL ORIGIN	MACHINE	<p><i>The general isolation of the machine from the electric power supply is obtained by operating on the appropriate general switch of disconnect switch on the fuse-box that can be locked with a padlock to prevent unwanted operations.</i></p> <p><i>The isolation from the pneumatic power source can be obtained by operating on the disconnect valve that is positioned upstream from the Filter-Regulator entrance unit that can be locked with a padlock to prevent unwanted operations.</i></p> <p><i>Rotate the isolation lever of the pneumatic device from the network to then depressurize the machine's pneumatic circuit.</i></p>	Wiring diagram Pneumatic diagram USER MANUAL

Prerequisite:
Art. 1.6.4.
Operator
intervention

Text:
Machinery must be so designed, constructed and equipped that the need for operator intervention is limited.
If operator intervention cannot be avoided, it must be possible to carry it out easily and safely.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISKS OF A MECHANICAL ORIGIN	MACHINE	<i>The machine is designed and manufactured to operate without supervision by the operator. The machine has a complex and high performance; therefore, consequently, the operator interventions are limited. Each adjustment, operational condition reactivation or maintenance activity requires stopping the machine and then accessing according to the control circuit logic unit.</i>	Wiring diagram USER MANUAL

Prerequisite:
Art. 1.6.5.
Cleaning of
internal parts

Text:
The machinery must be designed and constructed in such a way that it is possible to clean internal parts which have contained dangerous substances or preparations without entering them; any necessary unblocking must also be possible from the outside. If it is impossible to avoid entering the machinery, it must be designed and constructed in such a way as to allow cleaning to take place safely.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISKS OF A MECHANICAL ORIGIN	MACHINE	<i>The manual provides instructions on the machine's required cleaning operations.</i> <i>Each cleaning operation requires shutting off the machine power and then accessing according to the control circuit logic unit.</i>	Wiring diagram Pneumatic diagram USER MANUAL

Prerequisite:
Art. 1.7.1.
Information and
warnings on the
machinery

Text:
Information and warnings on the machinery should preferably be provided in the form of readily understandable symbols or pictograms. Any written or verbal information and warnings must be expressed in an official Community language or languages, which may be determined in accordance with the Treaty by the Member State in which the machinery is placed on the market and/or put into service and may be accompanied, on request, by versions in any other official Community language or languages understood by the operators.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISKS OF A MECHANICAL ORIGIN	MACHINE	<i>The machine is equipped with prohibition, danger and obligation pictograms based on the zone requirements. The manual includes all the pictograms in use and their position.</i>	USER MANUAL

Prerequisite:
Art. 1.7.1.1
Information and
information
devices

Text:
The information needed to control machinery must be provided in a form that is unambiguous and easily understood. It must not be excessive to the extent of overloading the operator.
Visual display units or any other interactive means of communication between the operator and the machine must be easily understood and easy to use.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISKS OF A MECHANICAL ORIGIN	MACHINE	<p><i>The operator interface software provides for the use of hierarchical windows, each of which is linked to an objective in order to avoid jumbling different pieces of information in one screen.</i></p> <p><i>The user manual shows an illustration of each window and the elements inside the windows.</i></p> <p><i>Abnormal functioning or alarms are displayed on the monitor.</i></p> <p><i>The operator must read the manual before using the machine.</i></p>	USER MANUAL

Prerequisite:
Art. 1.7.1.2
Warning devices

Text:
Where the health and safety of persons may be endangered by a fault in the operation of unsupervised machinery, the machinery must be equipped in such a way as to give an appropriate acoustic or light signal as a warning.
Where machinery is equipped with warning devices these must be unambiguous and easily perceived. The operator must have facilities to check the operation of such warning devices at all times.
The requirements of the specific Community Directives concerning colours and safety signals must be complied with.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISKS OF A MECHANICAL ORIGIN	MACHINE	<p><i>Abnormal functioning or alarms are displayed on the monitor and this can generate a sound signal (depending on the severity of the error)</i></p> <p><i>The machine can be restarted only once the alarm cause has been resolved.</i></p> <p><i>The operator must read the manual before using the machine.</i></p>	USER MANUAL

Prerequisite:
Art. 1.7.2
Warning of
residual risks

Text:
Where risks remain despite the inherent safe design measures, safeguarding and complementary protective measures adopted, the necessary warnings, including warning devices, must be provided.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	RISKS OF A MECHANICAL AND ELECTRICAL ORIGIN	ELECTRICAL CABINET MACHINE	<p><i>On the door of the electrical cabinet, there are warning plates based on the electrical risk and the extent of the voltage.</i></p> <p><i>The user and maintenance manual shows the symbols used in the manual, as well as other warnings required to carry out the described operation.</i></p> <p><i>The manual includes a paragraph containing information on residual risks.</i></p> <p><i>All the machine openings include a "do not insert hands" sign</i> <i>All the fixed guards include a "do not start without the guard" sign</i></p>	USER MANUAL

**Prerequisite:
Art. 1.7.3
Marking of
machinery**

Text:

All machinery must be marked visibly, legibly and indelibly with the following minimum particulars:

- the business name and full address of the manufacturer and, where applicable, his authorised representative,
- designation of the machinery,
- the CE Marking (see Annex III),
- designation of series or type,
- serial number, if any,
- the year of construction, that is the year in which the manufacturing process is completed.

It is prohibited to pre-date or post-date the machinery when affixing the CE marking.

Furthermore, machinery designed and constructed for use in a potentially explosive atmosphere must be marked accordingly.

Machinery must also bear full information relevant to its type and essential for safe use. Such information is subject to the requirements set out in section 1.7.1.

Where a machine part must be handled during use with lifting equipment, its mass must be indicated legibly, indelibly and unambiguously.

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	GENERIC RISK DERIVING FROM A LACK OF INFORMATION	MACHINE	<p><i>There is an identification plate, a marking with the EC symbol and the year of manufacture indicated on the machine.</i></p> <p>The user and maintenance manual shows the plate and provides a copy of it with indications regarding the information on the plate.</p>	USER MANUAL

Prerequisite: Art. 1.7.4 Instructions	<p>Text:</p> <p>All machinery must be accompanied by instructions in the official Community language or languages of the Member State in which it is placed on the market and/or put into service.</p> <p>The instructions accompanying the machinery must be either 'Original instructions' or a 'Translation of the original instructions', in which case the translation must be accompanied by the original instructions.</p> <p>By way of exception, the maintenance instructions intended for use by specialised personnel mandated by the manufacturer or his authorised representative may be supplied in only one Community language which the specialised personnel understand.</p> <p>The instructions must be drafted in accordance with the principles set out below.</p>
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References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	GENERIC RISK DERIVING FROM A LACK OF INFORMATION	MACHINE	<p><i>The manual was drafted according to the following principles:</i></p> <p>General principles for the drafting of instructions</p> <p>a) The instructions must be drafted in one or more official Community languages. The words 'Original instructions' must appear on the language version(s) verified by the manufacturer or his authorised representative.</p> <p>b) Where no 'Original instructions' exist in the official language(s) of the country where the machinery is to be used, a translation into that/those language(s) must be provided by the manufacturer or his authorised representative or by the person bringing the machinery into the language area in question. The translations must bear the words 'Translation of the original instructions'.</p> <p>c) The contents of the instructions must cover not only the intended use of the machinery but also take into account any reasonably foreseeable misuse thereof.</p> <p>d) In the case of machinery intended for use by non-professional operators, the wording and layout of the instructions for use must take into account the level of general education and acumen that can reasonably be expected from such operators.</p> <p>Contents of the instructions</p> <p>Each instruction manual must contain, where applicable, at least the following information:</p> <p>a) the business name and full address of the manufacturer and of his authorised representative;</p> <p>b) the designation of the machinery as marked on the machinery itself, except for the serial number (see section 1.7.3);</p> <p>c) the EC declaration of conformity, or a document setting out the contents of the EC declaration of conformity, showing the particulars of the machinery, not necessarily including the serial number and the signature;</p> <p>d) a general description of the machinery;</p> <p>e) the drawings, diagrams, descriptions and explanations necessary for the use, maintenance and repair of the machinery and for checking its correct functioning;</p> <p>f) a description of the workstation(s) likely to be occupied by operators;</p> <p>g) a description of the intended use of the machinery;</p> <p style="text-align: right;">(NEXT PAGE)</p>	USER MANUAL

Prerequisite: Art. 1.7.4 Instructions	<p>Text:</p> <p>All machinery must be accompanied by instructions in the official Community language or languages of the Member State in which it is placed on the market and/or put into service.</p> <p>The instructions accompanying the machinery must be either 'Original instructions' or a 'Translation of the original instructions', in which case the translation must be accompanied by the original instructions.</p> <p>By way of exception, the maintenance instructions intended for use by specialised personnel mandated by the manufacturer or his authorised representative may be supplied in only one Community language which the specialised personnel understand.</p> <p>The instructions must be drafted in accordance with the principles set out below.</p>
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References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	GENERIC RISK DERIVING FROM A LACK OF INFORMATION	MACHINE	<p><i>(PROCEEDS FROM THE PREVIOUS PAGE)</i></p> <p><i>h) warnings concerning ways in which the machinery must not be used that experience has shown might occur;</i></p> <p><i>i) assembly, installation and connection instructions, including drawings, diagrams and the means of attachment and the designation of the chassis or installation on which the machinery is to be mounted;</i></p> <p><i>j) instructions relating to installation and assembly for reducing noise or vibration;</i></p> <p><i>k) instructions for the putting into service and use of the machinery and, if necessary, instructions for the training of operators;</i></p> <p><i>l) information about the residual risks that remain despite the inherent safe design measures, safeguarding and complementary protective measures adopted;</i></p> <p><i>m) instructions on the protective measures to be taken by the user, including, where appropriate, the personal protective equipment to be provided;</i></p> <p><i>n) the essential characteristics of tools which may be fitted to the machinery;</i></p> <p><i>o) the conditions in which the machinery meets the requirement of stability during use, transportation, assembly, dismantling when out of service, testing or foreseeable breakdowns;</i></p> <p><i>p) instructions with a view to ensuring that transport, handling and storage operations can be made safely, giving the mass of the machinery and of its various parts where these are regularly to be transported separately;</i></p> <p><i>q) the operating method to be followed in the event of accident or breakdown; if a blockage is likely to occur, the operating method to be followed so as to enable the equipment to be safely unblocked;</i></p> <p><i>r) the description of the adjustment and maintenance operations that should be carried out by the user and the preventive maintenance measures that should be observed;</i></p> <p><i>s) instructions designed to enable adjustment and maintenance to be carried out safely, including the protective measures that should be taken during these operations;</i></p> <p><i>t) the specifications of the spare parts to be used, when these affect the health and safety of operators;</i></p> <p><i>(NEXT PAGE)</i></p>	USER MANUAL

Prerequisite: Art. 1.7.4 Instructions	<p>Text:</p> <p>All machinery must be accompanied by instructions in the official Community language or languages of the Member State in which it is placed on the market and/or put into service.</p> <p>The instructions accompanying the machinery must be either 'Original instructions' or a 'Translation of the original instructions', in which case the translation must be accompanied by the original instructions.</p> <p>By way of exception, the maintenance instructions intended for use by specialised personnel mandated by the manufacturer or his authorised representative may be supplied in only one Community language which the specialised personnel understand.</p> <p>The instructions must be drafted in accordance with the principles set out below.</p>
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References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
UNI EN ISO 12100:2010 UNI EN 415 serie	GENERIC RISK DERIVING FROM A LACK OF INFORMATION	MACHINE	<p>(PROCEEDS FROM THE PREVIOUS PAGE)</p> <p><i>u) the following information are related to the emission of airborne sound:</i></p> <ul style="list-style-type: none"> — the weighted emitted sound pressure level A in the work areas, if it exceeds 70 dB(A); if the level does not exceed 70 dB(A), then it must be indicated, — the maximum weighted immediate sound pressure value C in the work areas, if it exceeds 63 Pa (130 dB with respect to 20 µPa), — the weighted level of sound power emitted by the machine, if the sound pressure level of the weighted emission A in the work areas exceeds 80 dB(A). <p><i>The aforementioned values must either be those effectively measured on the machine in question or those established based on the measurements effectively taken on a technically comparable machine that represents the machine being produced.</i></p> <p><i>When dealing with a machine with very large dimensions, levels of sound pressure from the weighted emission A may be indicated instead of the weighted sound power level A at various points around the machine.</i></p> <p><i>When the harmonised rules are not applied, the sound data must be measured using the most appropriate measuring code according to the machine. Whenever sound emission values are indicated, any uncertainty related to said values must be indicated. The functioning conditions for the machine during the measuring as well as the methods used to carry out the operation must be described.</i></p> <p><i>If the work area or areas are not or cannot be defined then the weighted sound pressure levels A must be measured at 1 m from the machine surface and at 1.60m height from the ground or the access platform. The position and the maximum sound pressure value must be indicated.</i></p> <p><i>If there are specific instructions from the community that provide different indications on measuring the sound pressure level or the sound power level then these instructions are applied and the corresponding instructions in this point are not applied;</i></p> <p><i>v) if the machine can emit non-ionising radiation that may be harmful to individuals, and particularly if they carry active or inactive implantable medical devices, and the information regarding the radiation emitted for the operator and exposed individuals.</i></p>	USER MANUAL

Prerequisite:

Art. 2
SUPPLEMENTARY
ESSENTIAL HEALTH
AND SAFETY
REQUIREMENTS
FOR CERTAIN
CATEGORIES OF
MACHINERY

Text:

Foodstuffs machinery, machinery for cosmetics or pharmaceutical products, hand-held and/or hand-guided machinery, portable fixing and other impact machinery, machinery for working wood and material with similar physical characteristics must meet all the essential health and safety requirements described in this chapter :

Art. 2.1 FOODSTUFFS MACHINERY AND MACHINERY FOR COSMETICS OR PHARMACEUTICAL PRODUCTS

Art. 2.2 PORTABLE HAND-HELD AND/OR HAND-GUIDED MACHINERY

Art. 2.3 MACHINERY FOR WORKING WOOD AND MATERIAL WITH SIMILAR PHYSICAL CHARACTERISTICS

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
DIR. 2006/42/EC - Art.2 - Art.2.1 - Art.2.2 - Art.2.3			<i>The machine can operate on food packages.</i> <i>The product contained in the packages does not come into contact with the machine</i> <i>The machine does not damage the packages</i>	

Prerequisite:

Art. 3
SUPPLEMENTARY
ESSENTIAL HEALTH
AND SAFETY
REQUIREMENTS TO
OFFSET HAZARDS
DUE TO
THE MOBILITY OF
MACHINERY

Text:

Machinery presenting hazards due to its mobility must meet all the essential health and safety requirements described in this chapter:

Art. 3.1 GENERAL

Art. 3.2 WORK POSITIONS

Art. 3.3 CONTROL SYSTEMS

Art. 3.4 PROTECTION AGAINST MECHANICAL HAZARDS

Art. 3.5 PROTECTION AGAINST OTHER HAZARDS

Art. 3.6 INFORMATION AND INDICATIONS

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
DIR. 2006/42/EC - Art.3 - Art.3.1 - Art.3.2 - Art.3.3 - Art.3.4 - Art.3.5 - Art.3.6			NOT RELEVANT	

Prerequisite:

Art. 4
SUPPLEMENTARY
ESSENTIAL HEALTH
AND SAFETY
REQUIREMENTS TO
OFFSET HAZARDS
DUE TO
LIFTING
OPERATIONS

Text:

Machinery presenting hazards due to lifting operations must meet all the essential health and safety requirements described in this chapter:

Art. 4.1 GENERAL

Art. 4.2 REQUIREMENTS FOR MACHINERY WHOSE POWER SOURCE IS OTHER THAN MANUAL EFFORT

Art. 4.3 INFORMATION AND MARKINGS

Art. 4.4 INSTRUCTIONS

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
DIR. 2006/42/EC - Art.4 - Art.4.1 - Art.4.2 - Art.4.3 - Art.4.4			NOT RELEVANT.	

Prerequisite:

Art. 5
SUPPLEMENTARY
ESSENTIAL HEALTH
AND SAFETY
REQUIREMENTS FOR
MACHINERY
INTENDED
FOR UNDERGROUND
WORK

Text:

Machinery intended for underground work must meet all the essential health and safety requirements

described in this chapter:

Art. 5.1 RISKS DUE TO LACK OF STABILITY

Art. 5.2 MOVEMENT

Art. 5.3 CONTROL DEVICES

Art. 5.4 STOPPING

Art. 5.5 FIRE

Art. 5.6 EXHAUST EMISSIONS

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
DIR. 2006/42/EC - Art.5 - Art.5.1 - Art.5.2 - Art.5.3 - Art.5.4 - Art.5.5 - Art.5.6			NOT RELEVANT	

Prerequisite:

Art. 6
SUPPLEMENTARY
ESSENTIAL HEALTH
AND SAFETY
REQUIREMENTS FOR
MACHINERY
PRESENTING
PARTICULAR HAZARDS
DUE TO THE LIFTING
OF PERSONS

Text:

Machinery presenting hazards due to the lifting of persons must meet all the relevant essential health and safety requirements described in this chapter:

Art. 6.1 GENERAL

Art. 6.2 CONTROL DEVICES

Art. 6.3 RISKS TO PERSONS IN OR ON THE CARRIER

Art. 6.4 MACHINERY SERVING FIXED LANDINGS

Art. 6.5 MARKINGS

References to legislation	Nature of the risk	Localisation of the risk	Implemented solutions	Document references
DIR. 2006/42/EC - Art.6 - Art.6.1 - Art.6.2 - Art.6.3 - Art.6.4 - Art.6.5			NOT RELEVANT	