



MD Technical File

Related to CE Directive: 2006/42/EC Machinery Directive

Report Number: KT22071003MR

Date: July 10, 2022

Applicant : LIAOCHENG DONGCHANGFU KETAI LASER
EQUIPMENT CO.,LTD
A13-1 Luxi International Pioneer Park, 150 meters west

Address : Haiyuan Road, Yansi Street, Dongchangfu District,
Liaocheng City, Shandong Province, China

Manufacturer : LIAOCHENG DONGCHANGFU KETAI LASER
EQUIPMENT CO.,LTD
A13-1 Luxi International Pioneer Park, 150 meters west

Address : Haiyuan Road, Yansi Street, Dongchangfu District,
Liaocheng City, Shandong Province, China

Product : Laser Welding/Cleaning Machine

**Brand name/
Trade mark** : /

Model(s) : KT-50, KT-60, KT-100, KT-150, KT-200, KT-400,
KT-500, KT-1000, KT-1500, KT-2000, KT-3000
EN ISO 12100:2010, EN 60825-1:2014,

Standard(s) : EN ISO 11553-2:2008 EN 60204-1:2018,
EN ISO 11553-1:2020+A11:2020

Technical File No.	Issue Date:	Prepared By	Approved By
KT22071003MR	2022-07-10	Wallace Xu	Qirui Qu

Technical File FOR COMPLIANCE WITH

Essential health and safety requirements

EN ISO 12100:2010 Safety of machinery. General principles for design. Risk assessment and risk reduction

Registered Number	
Applicant	LIAOCHENG DONGCHANGFU KETAI LASER EQUIPMENT CO.,LTD
Applicant Address	A13-1 Luxi International Pioneer Park, 150 meters west Haiyuan Road, Yansi Street, Dongchangfu District, Liaocheng City, Shandong Province, China
Trade mark	Ketai
Machinery	
Product Name	Laser Welding/Cleaning Machine
Main Model	KT-1500
Series Model(s)	KT-50, KT-60, KT-100, KT-150, KT-200, KT-400, KT-500, KT-1000, KT-1500, KT-2000, KT-3000
File No.	KT22071003MR
Directive	2006/42/EC Machinery Directive
Standards Compliance	EN ISO 12100:2010, EN 60825-1:2014, EN ISO 11553-2:2008 EN ISO 11553-1:2020+A11:2020

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Part I: General

1.1 General description

In order to ensure the conformity for CE marking for these machines, some main European and/or International standards have been used to make assessment of conformity, they are - EN ISO 12100:2010 Safety of machinery — General principles for design — Risk assessment and risk reduction

1.2 Variations of the series products

Regarding the whole family of the series, they can be divided into different models according to their main features.

KT-50, KT-60, KT-100, KT-150, KT-200, KT-400, KT-500, KT-1000, KT-1500, KT-2000, KT-3000
To present the conformity of this series machine with Machinery Directive, we discuss the conformity systematically with the relative Directive and standards for KT-1500 as a basic evaluation in clause.

1.3 EU Representative

Company Name: HUBERTUS Tolczyk Sp. z o.o.

Address: Saturna 41, 15-680 Białystok, Poland

Contact person: Piotr Tolczyk

Tel. +48 661 680 570

1.4 Quality control system

In order to ensure the conformity of the series production, the LIAOCHENG DONGCHANGFU KETAI LASER EQUIPMENT CO.,LTD. has taken the related procedures mentioned below:

- (1) Apply for the consultant from the qualified body in Shanghai ZUOCE & BTS.
LIAOCHENG DONGCHANGFU KETAI LASER EQUIPMENT CO.,LTD. has applied for the certification from MD directive Notified body UDEM Uluslararası Belgelendirme Denetim Eğitim Merkezi San. ve Tic. A.Ş.(Notified Body number : 2292).
- (2) Carry out the inspection for parts and components according to the TCF
Before the assemblies of the series production, the QC engineers of LIAOCHENG DONGCHANGFU KETAI LASER EQUIPMENT CO.,LTD. has to check and inspect the technical specifications and intended functions of parts and components to ensure the

correct use of them according to the contents of TCF and principle described in the related technical information.

(3) Carry out the inspection & testing for the products before packing

Before packing the products, the QC engineers of LIAOCHENG DONGCHANGFU KETAI LASER EQUIPMENT CO.,LTD. have to do the necessary inspection and testing to ensure the conformity of related requirements, in particularly, the testing and inspection of electrical characteristics and outer feature.

(4) Carry out the inspection for the packing

After finishing the necessary inspection and testing for the products, an inspection for the packing has to be done to ensure the necessary elements being included in this packing before shipment.

(5) Provision for the change of design

Any change of the products described in this TCF must be checked in detail and written down again in the TCF by the designer of LIAOCHENG DONGCHANGFU KETAI LASER EQUIPMENT CO.,LTD. if the change may effects the related electrical or mechanical characteristics.

(6) Provision for the Quality Assurance

For the provisions of internal control measures to ensure the conformity of series production of the machines, LIAOCHENG DONGCHANGFU KETAI LASER EQUIPMENT CO.,LTD. has built an internal quality control system in accordance with the international standards.

Part II: Assessment of conformity

2.1 Essential health and safety requirements

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
1	Essential health and safety requirements	-
1.1	General remarks	-
1.1.1	Definitions	-
1.1.2	Principles of safety integration	-
a)	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.	Pass. These requirements have been taken into account during design.
	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.	Pass. These requirements have been taken into account during design.
b)	In selecting the most appropriate methods, the manufacturer or his authorized representative must apply the following principles, in the order given:	-
	- eliminate or reduce risks as far as possible	Pass Manufacturer has provided enough protections to eliminate or reduce risks.
	- take the necessary protection measure in relation to risks that can't be eliminated	Pass. Safety guards are used.
	- inform users of the residual risks due to any shortcomings of the protection measures adopted, indicate whether any particular training is required and specify any need to provide personal protection equipment	Pass.
c)	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.	Pass.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	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.	Pass.
d)	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.	Pass.
e)	Machinery must be supplied with all the special equipment and accessories essential to enable it to be adjusted, maintained and used safely.	Pass. These requirements have been taken into account during the design of the machine.
1.1.3	Materials and products	-
	The materials used to construct machinery or products used or created during its use must not endanger persons' safety or health.	Pass. Materials and products do 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.	Pass. These requirements have been taken into account during the design of the machine.
1.1.4	Lighting	-
	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.	Pass.
	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.	Pass. There is no this kind of risk has been found.
	Internal parts requiring frequent inspection, and adjustment and maintenance areas, must be provided with appropriate lighting	Pass No this kind risk in the machine
1.1.5	Design of machinery to facilitate its handling	-

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	Machinery or each component part thereof must:	-
	- be capable of being handled and transported safely,	Not applicable
	- be packaged or designed so that it can be stored safely and without damage.	Not applicable
	Where the weight, size or shape of machinery or its various component parts prevents them from being moved by hand, the machinery or each components part must:	-
	- either be fitted with attachments for lifting gear	Pass. These requirements have been taken into account during the design of the machine.
	- be designed so that it can be fitted with such attachments, or	Pass.
	- be shaped in such a way that standard lifting gear can easily be attached	Pass.
	Where machinery or one of its component parts is to be moved by hand, it must:	-
	- either be easily movable, or	Pass
	- be equipped for picking up and moving in complete safety	Pass
	Special arrangement must be made for the handling of tools and/or machinery parts, even if lightweight, which could be dangerous	Pass
1.1.6	Ergonomics	-
	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 principle ssuch as:	Pass. These requirements have been complied with
	– allowing for the variability of the operator’s physical dimensions, strength and stamina,	Pass These requirements have been complied with by appropriate design.
	– providing enough space for movements of the parts of the	Pass

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	operator's body,	
	– avoiding a machine-determined work rate,	Pass
	– avoiding monitoring that requires lengthy concentration,	Pass No such situation in the machine
	– adapting the man/machinery interface to the foreseeable characteristics of the operators.	Pass. These requirements have been complied with
1.1.7	Operating positions	-
	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.	Pass. Manufacturer has provided enough safety devices to eliminate or reduce risks.
	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.	Pass These requirements have been complied with
	Where appropriate, the operating position must be fitted with an adequate cabin designed, constructed and/or equipped to fulfill the above requirements.	Pass No this of need
	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.	Pass No this kind risk in the machine
1. 1. 8	Seating	-
	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.	Not applicable
	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	Not applicable
	The operator's seat must enable him to maintain a stable position. Furthermore,	Not applicable

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	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.	Not applicable
1.2	CONTROL SYSTEMS	-
1.2.1	Safety and reliability of control systems	-
	Control systems must be designed and constructed in such a way as to prevent hazardous situations from arising.	Pass. The control system for this machine is safe and reliable by appropriate designing
	Above all, they must be designed and constructed in such a way that:	-
	- they can withstand the intended operating stresses and external influences,	Pass. They were designed have enough strength, and they can withstand related effects during normal operation.
	-a fault in the hardware or the software of the control system does not lead to hazardous situations,	Pass
	- errors in logic don't lead to dangerous situations	Pass. .
	-reasonably foreseeable human error during operation does not lead to hazardous situations.	Pass
	Particular attention must be given to the following points:	-
	– the machinery must not start unexpectedly	Pass These requirements have been complied with
	– the parameters of the machinery must not change in an uncontrolled way,	Pass These requirements have

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	where such change may lead to hazardous situations,	been complied with
	– the machinery must not be prevented from stopping if the stop command has already been given,	Pass These requirements have been complied with
	– no moving part of the machinery or piece held by the machinery must fall or be ejected,	Pass No this kind of hazard in the machine
	– automatic or manual stopping of the moving parts, whatever they may be, must be unimpeded,	Pass These requirements have been complied with
	– the protective devices must remain fully effective or give a stop command,	Pass
	– 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.	Pass These requirements have been complied with
	For cable-less control, an automatic stop must be activated when correct control signals are not received, including loss of communication.	Not applicable No cable-less control in the machine
1.2.2	Control devices	-
	Control devices must be:	-
	- clearly visible and identifiable, using pictograms where appropriate,	Pass. Appropriate labels and markings are provided.
	- positioned in such a way as to be safely operated without hesitation or loss of time and without ambiguity,	Pass. The information is identified clearly and can be easily under understood.
	- designed in such a way that the movement of the control device is consistent with its effect,	Pass These requirements have been complied with by appropriate design.
	- located outside the danger zones, except where necessary	Pass.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	for certain control devices such as an emergency stop or a teach pendant,	All control devices have been located outside the danger zones.
	- positioned in such a way that their operation cannot cause additional risk,	Pass. All operation of control devices won't 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,	Pass. Appropriate safety devices have been used to comply with this requirement.
	- made in such a way as to withstand foreseeable forces; particular attention must be paid to emergency stop devices liable to be	Pass. The emergency stop and other control devices have enough strength to withstand foreseeable strain.
	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.	Not applicable.
	their layout, travel and resistance to operation are compatible with the action to be performed, taking account of ergonomic principles.	Pass. These requirements have been complied with by appropriate design.
	Machinery must be fitted with indicators as required for safe operation. The operator must be able to read them from the control position.	Pass. These requirements have been complied with by appropriate design.
	The operator must be able to read them from the control position	Pass. The indicators are visible in 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	Pass. The danger zones are visible for the operator in the

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	must be designed and constructed in such a way that starting is prevented while someone is in the danger zone.	main control position.
	If neither of these possibilities is applicable, before the machinery starts,	Pass.
	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.	Pass. Emergency stop, main switch and other related devices have been provided for the exposed person.
	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.	Pass
	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.	Pass
	When machinery has two or more operating positions, each position must be provided with all the required control devices without the operators hindering or putting each other into a hazardous situation.	Pass These requirements have been complied with by appropriate design
1.2.3	Starting	-
	It must be possible to start machinery only by voluntary actuation of a control provided for the purpose	Pass. Devices preventing unintended starting have been provided.
	The same requirement applies:	-
	- when restarting the machinery after stoppage, whatever the cause	Pass.
	- when effecting a significant change in the operating conditions	Pass. This requirement has been complied with.
	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.	- Pass. This requirement has been complied with.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	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.	Pass. These requirements have been complied with by appropriate design.
	Where machinery has several starting controls and the operators can therefore put each other in danger, additional devices must be fitted to rule out such risks	Pass .
	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	Pass. These requirements have been complied with
1.2.4	Stopping	-
1.2.4.1	Normal stopping	-
	Machinery must be fitted with a control device whereby the machinery can be brought safely to a complete stop.	Pass.
	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.	Pass.
	The machinery's stop control must have priority over the start controls	Pass.
	Once the machinery or its hazardous functions have stopped, the energy supply to the actuators concerned must be cut off.	Pass.
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.	Pass. This requirement has been complied with.
1.2.4.3	Emergency stop	-
	Machinery must be fitted with one or more emergency stop devices to enable actual or impending danger to be averted	Pass. Emergency stop be used
	The following exceptions apply:	-

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	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,	Pass. These requirements have been complied with by appropriate design.
	– portable hand-held and/ handguided machinery.	-
	The device must:	-
	– have clearly identifiable, clearly visible and quickly accessible control devices,	Pass. The emergency stop has red button, yellow background and marked with “emergency stop”
	– stop the hazardous process as quickly as possible, without creating additional risks,	Pass.
	- where necessary, trigger or permit the triggering of certain safeguard movements	Pass. These requirements have been complied with by appropriate design.
	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	Pass. These requirements have been complied with by appropriate design.
	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	Pass. These requirements have been complied with by appropriate design
	The emergency stop function must be available and operational at all times, regardless of the operating mode.	Pass. This requirement has been complied with.
	Emergency stop devices must be a back-up to other safeguarding measures and not a substitute for them.	Pass. This requirement has been complied with.
1.2.4. 4	Assembly of machinery	-
	In the case of machinery or parts of machinery designed to	Pass.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	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.	This requirement has been complied with during design.
1.2.5	Selection of control or operating modes	-
	The control or operating mode selected must override all other control or operating modes, with the exception of the emergency stop.	Pass.
	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.	Pass.
	Each position of the selector must be clearly identifiable and must correspond to a single operating or control mode.	Pass. These requirements have been complied with by appropriate design.
	The selector may be replaced by another selection method which restricts the use of certain functions of the machinery or certain categories of operator	Pass
	If, for certain operations, the machinery must be able to operate with a guard displaced or removed and/or a protective device disabled,	Pass
	the control or operating mode selector must simultaneously:	-
	- disable all other control or operating modes,	Not applicable.
	- permit operation of hazardous functions only by control devices requiring sustained action,	Not applicable.
	– permit the operation of hazardous functions only in reduced risk conditions	Not applicable.
	while preventing hazards from linked sequences,	Not applicable.
	– prevent any operation of hazardous functions by voluntary or involuntary action on the machine's sensors.	Not applicable.
	If these four conditions cannot be fulfilled simultaneously, the control or operating mode selector must activate other	Not applicable.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	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.	Not applicable. No this kind of mode selection has been found.
1.2.6	Failure of the power supply	-
	The interruption, re-establishment after an interruption or fluctuation in whatever manner of the power supply to the machinery must not lead to a dangerous situation	Pass. No such hazard in the machine,
	Particular attention must be given to the following points:	-
	- the machinery must not start unexpectedly	Pass.
	- the parameters of the machinery must not change in an uncontrolled way when such change can lead to hazardous situations,	Pass
	- the machinery must not be prevented from stopping if the command has already been given	Pass. The stop command has the priority over all other devices
	- no moving part of the machinery or piece held by the machinery must fall or be ejected	Pass.
	- automatic or manual stopping of the moving parts whatever they may be must be unimpeded	Pass. Stopping of the moving parts is always effective.
	- the protective devices must remain fully effective or give a stop command.	Pass. The protection devices remain effective after the failure of the power supply.
1.3	Protection against mechanical hazards	-
1.3.1	Risk of loss of stability	-
	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.	Pass. These machines are stable enough and under the foreseen operating conditions for use without those risks.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	If the shape of the machinery itself or its intended installation doesn't offer sufficient stability, appropriate means of anchorage must be incorporated and indicated in the instructions	Not applicable. The sufficient stability has been offered for this machine.
1.3.2	Risk of break-up during operation	-
	The various parts of machinery and their linkages must be able to withstand the stresses to which they are subject when used.	Pass. No this kind of hazard in the machine
	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.	Pass. All materials used for this machine are appropriate for their intended use and have adequate life.
	The instructions must indicate the type and frequency of inspections and maintenance required for safety reasons.	Pass. The related information has been provided within the instruction manual.
	They must, where appropriate, indicate the parts subject to wear and the criteria for replacement.	Pass
	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.	Pass These requirements have been taken into account during the design of this machine.
	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.	Pass.
	Where the material to be processed is fed to the tool automatically, the following conditions must be fulfilled to	Pass

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	avoid risks to persons:	
	- when the work piece comes into contact with the tool the later must have attained its normal working conditions	Not applicable.
	- when the tool starts and/or stops the feed movement and the tool movement must be coordinated	Not applicable.
1.3.3	Risked due to falling or ejected objects	-
	Precautions must be taken to prevent risks from falling or ejected objects.	Pass Safety guard was used
1.3.4	Risks due to surfaces, edges or angles	-
	In so far 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	Pass. No this kind of hazard in the machine
1.3.5	Risks related to combined machinery	-
	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.	Pass No this kind of risk in the machine
	For this purpose, it must be possible to start and stop separately and elements that are not protected	Not applicable.
1.3.6	Risks related to variations in operating conditions	-
	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.	Pass No this kind of hazard in the machine
1.3.7	Risks related to moving parts	-
	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.	Pass. These kinds of hazards have been prevented by appropriate guards.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	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.	Pass. All necessary steps have been taken, and the related information was provided within instruction manual.
	The instructions and, where possible, a sign on the machinery shall identify these specific protective devices and how they are to be used.	Pass. Warning sign was used.
1.3.8	Choice of protection against risks arising from moving parts	-
	Guards or protective devices designed to protect against risks arising from moving parts must be selected on the basis of the type of risk. The following guidelines must be used to help to make the choice.	Pass. Safety guard was used
1.3.8.1	. Moving transmission parts	-
	Guards designed to protect persons against the hazards generated by moving transmission parts must be:	Pass
	– either fixed guards as referred to in section 1.4.2.1, or	Pass Safety guards and enough warnings are provided in the appropriate spot.
	— interlocking movable guards as referred to in section 1.4.2.2.	Not applicable
	Interlocking movable guards should be used where frequent access is envisaged.	Not applicable
1.3.8.2	Moving parts involved in the process	-
	Guards or protective devices designed to protect persons	-

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	against the hazards generated by moving parts involved in the process must be:	
	– either fixed guards as referred to in section 1.4.2.1, or	Pass
	– interlocking movable guards as referred to in section 1.4.2.2, or	Pass
	– protective devices as referred to in section 1.4.3, or	Pass
	– a combination of the above.	Pass
	However, when certain moving parts directly involved in the process cannot be made completely inaccessible during operation owing to operations requiring operator intervention	Pass
	such parts must be fitted with:	-
	– fixed guards or interlocking movable guards preventing access to those sections of the parts that are not used in the work, and	Pass
	– adjustable guards as referred to in section 1.4.2.3 restricting access to those sections of the moving parts where access is necessary.	Not applicable
1.3.9	. Risks of uncontrolled movements	-
	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.	Not applicable
1.4	Required characteristics of guards and protection devices	-
1.4.1	General requirement	-
	Guards and protection devices must:	-
	- be of robust construction	Pass. All the guards have enough strength.
	– be securely held in place,	Pass
	- not give rise to any additional hazard,	Pass. No additional risk is found.
	- not be easy to bypass or render non-operational	Pass.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	- be located at an adequate distance from the danger zone	Pass.
	- cause minimum obstruction to the view in the production process	Pass.
	– 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.	Pass. These requirements have been taken into account during design.
	In addition, guards must, where possible, protect against the ejection or falling of materials or objects and against emissions generated by the machinery.	Pass. These requirements have been complied with by appropriate design.
1.4.2	Special requirements for guards	-
1.4.2.1	Fixed guards	-
	Fixed guards must be fixed by systems that can be opened or removed only with tools	Pass. They all have been securely held in place by appropriate fixation.
	Their fixing systems must remain attached to the guards or to the machinery when the guards are removed.	Pass. These requirements have been complied with by appropriate design.
	Where possible, guards must be incapable to remain in place without their fixings	Not applicable.
1.4.4.2	Interlocking movable guards must:	-
	– as far as possible remain attached to the machinery when open,	Pass
	— be designed and constructed in such a way that they can be adjusted only by means of an intentional action. [See 3rd hyphen of old 1.4.2.2	Pass
	Interlocking movable guards must be associated with an interlocking device that:	Pass.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	– prevents the start of hazardous machinery functions until they are closed, and	Pass.
	– gives a stop command whenever they are no longer closed.	Pass
	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:	Pass
	– prevents the start of hazardous machinery functions until the guard is closed and locked, and	Pass.
	— keeps the guard closed and locked until the risk of injury from the hazardous machinery functions has ceased.	Pass
	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	Pass
1.4.2.	Adjustable guards restricting access	-
3	Adjustable guards restricting access to those areas of the moving parts strictly necessary for the work must:	-
	- be adjustable manually or automatically according to the type of work involved	Not applicable .
	- be readily adjustable without the use of tools	Not applicable .
1.4.3	Special requirements for protective devices	-
	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	Pass.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	operator's reach,	Appropriate monitors were used.
	– persons cannot reach moving parts while the parts are moving, and	Pass. Appropriate guards have been provided.
	– the absence or failure of one of their components prevents starting or stops the moving parts.	Pass. They can be adjusted only by using of a tool.
	Protective devices must be adjustable only by means of an intentional action.[See 3rd hyphen of old 1.4.3]	Pass.
1.5	RISKS DUE TO OTHER HAZARDS	-
1.5.1.	Electricity supply	-
	Where machinery has an electricity supply it must be designed, constructed and equipped so that all hazards of an electrical nature are or can be prevented	Pass. See the EN 60204-1 test report in detail.
	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.	Pass. See the EN 60204-1 test report in detail.
1.5.2	Static electricity	-
	Machinery must be so designed and constructed as to prevent or limit the build-up of potentially dangerous electrostatic changes and/or be fitted with a discharging system	Pass. See the EN 60204-1 test report in detail.
1.5.3	Energy supply other than electricity	-
	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.	Not applicable.
1.5.4	Error of fitting	-
	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	Pass. These requirements have been taken into account during design.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	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.	Pass. The related information has been provided within the instruction manual.
	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.	Pass. All related information has been provided within the instruction manual. Necessary labels and markings have been provided.
1.5.5	Extreme temperatures	-
	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.	Not applicable No this kind hazard in the machine
1.5.6	Fire	-
	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.	Not applicable. No this kind of risk.
1.5.7	Explosion	-
	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.	Not applicable. No such risk is exist
	Machinery must comply, as far as the risk of explosion due to its use in a potentially explosive atmosphere is concerned,	Pass

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	with the provisions of the specific Community Directives.	
1.5.8	Noise	-
	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.	Pass. The design and construction of this machine are in conformity with this requirement. Noise of this machine is not more than 70db.
1.5.9	Vibration	-
	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.	Pass. Vibrations of this machine will not create any risk.
	The level of vibration emission may be assessed with reference to comparative emission data for similar machinery.	
1.5.10	Radiation	-
	Undesirable radiation emissions from the machinery must be eliminated or be reduced to levels that do not have adverse effects on persons.	Pass, this products is class 4 laser products and have special protective housing.
	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.	Pass
	Any functional non-ionising radiation emissions during setting, operation and cleaning must be limited to levels that do not have adverse effects on persons.	Pass
1.5.11	External radiation	-

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	Machinery must be designed and constructed in such a way that external radiation does not interfere with its operation.	Pass
1.5.12	Laser equipment	-
	Where laser equipment is used, the following provisions should be taken into account;	Pass
	– laser equipment on machinery must be designed and constructed in such a way as to prevent any accidental radiation,	Pass
	– 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,	Pass
	– optical equipment for the observation or adjustment of laser equipment on machinery must be such that no health risk is created by laser radiation.	Not applicable.
1.5.13	Emissions of hazardous materials and substances	-
	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.	Not applicable
	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.	Not applicable
	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.	Not applicable
1.5.14	Risk of being trapped in a machine	-
	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.	Pass. Safety guards and other devices are used.
1.5.15	Risk of slipping, tripping or falling	-
	Parts of the machinery where persons are liable to move	Pass

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	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.	Safety guards and other devices are used.
	Where appropriate, these parts must be fitted with handholds that are fixed relative to the user and that enable them to maintain their stability.	Pass
1.5.16	Lightning	
	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.	Pass
1.6	Maintenance	-
1.6.1	Machinery maintenance	-
	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.	Pass. The related information was provided within instruction manual.
	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).	Pass. Maintenance, repair, cleaning and servicing, operations can only be implemented while machinery is at a standstill
	In the case of automated machinery and, where necessary, other machinery, a connecting device for mounting diagnostic fault-finding equipment must be provided.	Not applicable. No this kind of situation.
	Automated machinery components which have to be changed frequently	Pass.
	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	Pass. The related parts can be removed and replaced easily and in safety.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	in accordance with a specified operating method.	
1.6.2	Access to operating position and servicing points	-
	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.	Pass. Appropriate guards and safety control devices have been used.
1.6.3	Isolation of energy sources	-
	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.	Pass. The power switch has been used.
	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.	Pass. It has passed CE
	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.	Pass
	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.	Not applicable. No plug was used.
	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.	Pass. The isolator can be locked in the off position.
1.6.4	Operator intervention	-
	Machinery must be so designed, constructed and equipped that the need for operator intervention is limited	Pass. Appropriate measures haven been taken into account during design to avoid and limit the operator

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
		intervention.
	If operator intervention can't be avoided, it must be possible to carry it out easily and in safety	Pass .
1.6.5	Cleaning of internal parts	-
	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	Pass. The design of this machine is allowed to carry out this work.
	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.	Pass
1.7	INFORMATION	-
1.7.1	Information and warnings on the machinery	-
	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. [Compare with 1.7.2 of the old directive]	Pass. The information is identified clearly and can be easily under understood.
1.7.1.1	. Information and information devices	
	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.	Pass. Enough warnings are provided in the appropriate spot
	Visual display units or any other interactive means of communication between the operator and the machine must be easily understood and easy to use.	Pass. Enough warnings are provided in the appropriate spot

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
1.7.1. 2.	Warning devices 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.	Pass. These requirements have been complied with by appropriate design.
	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.	Pass. These requirements have been complied with by appropriate design.
	The requirements of the specific Community Directives concerning colours and safety signals must be complied with.	Pass. These requirements have been complied with by appropriate design.
1.7.2	Warning of residual risks	-
	Where risks remain despite the inherent safe design measures, safeguarding and complementary protective measures adopted, the necessary warnings, including warning devices, must be provided.	Not applicable.
1.7.3	Marking of machinery	-
	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,	Pass. Name and address of the manufacturer were marked in the nameplate.
	– designation of the machinery,	Pass.
	– the CE Marking (see Annex III),	Pass. Designation of series or type has been marked in the nameplate.
	– designation of series or type	Pass. Serial number has been marked in the nameplate.
	– serial number, if any,	Not applicable.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
		This machine is not intended to be used in a potentially explosive atmosphere.
	– the year of construction, that is the year in which the manufacturing process is completed.	Pass. See instruction manual in details.
	It is prohibited to pre-date or post-date the machinery when affixing the CE marking.	Not applicable.
	Furthermore, machinery designed and constructed for use in a potentially explosive atmosphere must be marked accordingly.	Pass. All the related information is provided legible, indelibly and unambiguously.
	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.	Pass
1.7.5	Instruction	-
	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.	Pass.
	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.	Pass.
	By way of exception, the maintenance instructions intended for use by specialized personnel mandated by the manufacturer or his authorised representative may be supplied in only one Community language which the specialised personnel understand. [Compare with old 1.7.4 b]	Pass.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	The instructions must be drafted in accordance with the principles set out below.	Pass.
1.7.5.1	. General principles for the drafting of instructions	Pass.
	(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 authorized representative.	Pass.
	(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'.	Pass.
	(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.	Pass.
	(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.	Pass. T
1.7.5.2	. Contents of the instructions	Pass.
	-Each instruction manual must contain, where applicable, at least the following information:	Pass.
	(a) the business name and full address of the manufacturer and of his authorized representative;	Pass.
	(b) the designation of the machinery as marked on the machinery itself, except for the serial number (see section	Pass.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	1.7.3);	
	(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;	Pass.
	(d) a general description of the machinery;	Pass.
	(e) the drawings, diagrams, descriptions and explanations necessary for the use, maintenance and repair of the machinery and for checking its correct functioning;	Pass. English versions of the instruction manual were provided.
	(f) a description of the workstation(s) likely to be occupied by operators;	Pass. English version of the instruction manual is provided.
	g) a description of the intended use of the machinery;	Pass.
	(h) warnings concerning ways in which the machinery must not be used that experience has shown might occur;	Pass. The related information has been provided within the instruction manual.
	(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;	Pass. All the related information has been provided within the instruction manual by manufacturer.
	(j) instructions relating to installation and assembly for reducing noise or vibration;	Pass. No such situations exist.
	(k) instructions for the putting into service and use of the machinery and, if necessary, instructions for the training of operators;	Pass. All related information has been provided within the technical documentation.
	(l) information about the residual risks that remain despite the inherent safe design measures, safeguarding and	Not applicable.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	complementary protective measures adopted;	
	(m) instructions on the protective measures to be taken by the user, including, where appropriate, the personal protective equipment to be provided;	Pass
	(n) the essential characteristics of tools which may be fitted to the machinery;	Pass
	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;	Pass
	(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; [Compare with the 10th hyphen of old 1.7.4. (a)]	Pass.
	(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;	Pass. It was indicated within instruction manual.
	(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;	Pass.
	(s) instructions designed to enable adjustment and maintenance to be carried out safely, including the protective measures that should be taken during these operations;	Pass.
	(t) the specifications of the spare parts to be used, when these affect the health and safety of operators;	Not applicable. The workstation has been defined.
	(u) the following information on airborne noise emissions:	Pass. It has been indicated in the appropriate position of the machine.
	– the A-weighted emission sound pressure level at	Not applicable.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	workstations, where this exceeds 70 dB(A); where this level does not exceed 70 dB(A), this fact must be indicated,	
	– the peak C-weighted instantaneous sound pressure value at workstations, where this exceeds 63 Pa (130 dB in relation to 20 µPa),	Pass.
	– the A-weighted sound power level emitted by the machinery, where the A-weighted emission sound pressure level at workstations exceeds 80 dB(A).	Pass. All these requirements have been taken into account.
	These values must be either those actually measured for the machinery in question or those established on the basis of measurements taken for technically comparable machinery which is representative of the machinery to be produced.	Pass. All these requirements have been taken into account.
	In the case of very large machinery, instead of the A-weighted sound power level, the A-weighted emission sound pressure levels at specified positions around the machinery may be indicated	Pass. All these requirements have been taken into account.
	Where the harmonised standards are not applied, sound levels must be measured using the most appropriate method for the machinery. Whenever sound emission values are indicated the uncertainties surrounding these values must be specified.	Pass. All these requirements have been taken into account.
	The operating conditions of the machinery during measurement and the measuring methods used must be described.	Pass. All these requirements have been taken into account.
	Where the workstation(s) are undefined or cannot be defined, A-weighted sound pressure levels must be measured at a distance of 1 metre from the surface of the machinery and at a height of 1,6 metre from the floor or access platform. The position and value of the maximum sound pressure	Pass. All these requirements have been taken into account.

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	must be indicated.	
	Where specific Community Directives lay down other requirements for the measurement of sound pressure levels or sound power levels, those Directives must be applied and the corresponding provisions of this section shall not apply;	Pass. All these requirements have been taken into account.
	(v) where machinery is likely to emit nonionising radiation which may cause harm to persons, in particular persons with active or non-active implantable medical devices, information concerning the radiation emitted for the operator and exposed persons.	Pass. No this kind of risk in the machine
1.7.5.3	Sales literature	
	Sales literature describing the machinery must not contradict the instructions as regards health and safety aspects. Sales literature describing the performance characteristics of machinery must contain the same information on emissions as is contained in the instructions.	Pass. All these requirements have been taken into account.
2	SUPPLEMENTARY ESSENTIAL HEALTH AND SAFETY REQUIREMENTS FOR CERTAIN CATEGORIES OF MACHINERY	-
2.1	FOODSTUFFS MACHINERY AND MACHINERY FOR COSMETICS OR PHARMACEUTICAL PRODUCTS	-
2. 1. 1	General	-
	Machinery intended for use with foodstuffs or with cosmetics or pharmaceutical products must be designed and constructed in such a way as to avoid any risk of infection, sickness or contagion. The following requirements must be observed:	-
	(a) materials in contact with, or intended to come into contact with, foodstuffs or cosmetics or pharmaceutical products must satisfy the conditions set down in the relevant Directives. The machinery must be designed and constructed in such a way that these materials can be cleaned before each use. Where this is	Pass.

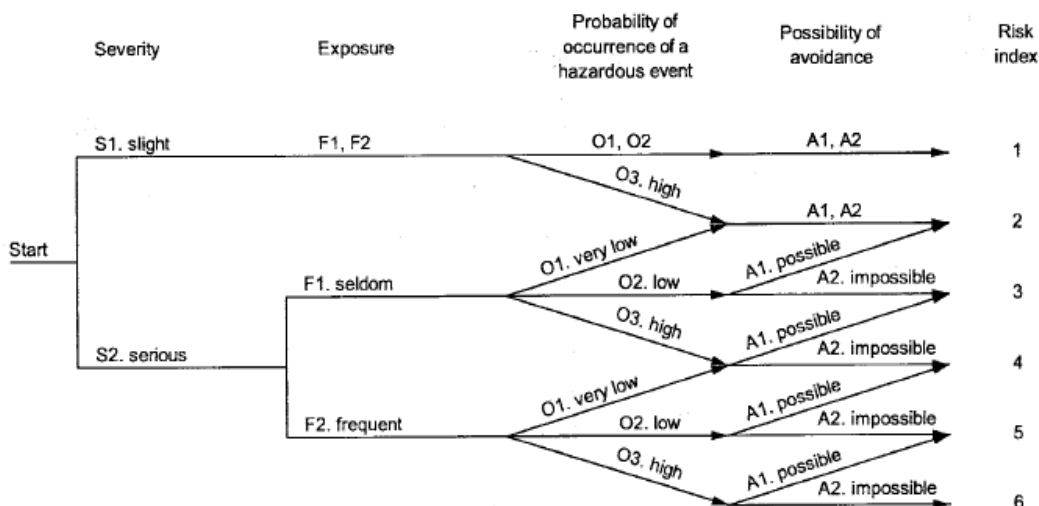
Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	not possible disposable parts must be used;	
	(b) all surfaces in contact with foodstuffs or cosmetics or pharmaceutical products, other than surfaces of disposable parts, must:	-
	– be smooth and have neither ridges nor crevices which could harbour organic materials. The same applies to their joinings,	Pass.
	– be designed and constructed in such a way as to reduce the projections, edges and recesses of assemblies to a minimum,	Pass.
	– be easily cleaned and disinfected, where necessary after removing easily dismantled parts; the inside surfaces must have curves with a radius sufficient to allow thorough cleaning;	Pass.
	(c) it must be possible for liquids, gases and aerosols deriving from foodstuffs, cosmetics or pharmaceutical products as well as from cleaning, disinfecting and rinsing fluids to be completely discharged from the machinery (if possible, in a 'cleaning' position);	Pass.
	(d) machinery must be designed and constructed in such a way as to prevent any substances or living creatures, in particular insects, from entering, or any organic matter from accumulating in areas that cannot be cleaned;	Pass. These requirements have been complied with by appropriate design.
	(e) machinery must be designed and constructed in such a way that no ancillary substances hazardous to health, including the lubricants used, can come into contact with foodstuffs, cosmetics or pharmaceutical products. Where necessary, machinery must be designed and constructed in such a way that continuing compliance with this requirement can be checked	N Pass. These requirements have been complied with by appropriate design.
2.1.2.	Instructions	-
	The instructions for foodstuffs machinery and machinery for use with cosmetics or pharmaceutical products must indicate	Pass. These requirements have

Items	Clause Annex I in Directive 2006/42/EC Machinery	Compliance with Annex I (Pass/Fail/Not applicable)
	recommended products and methods for cleaning, disinfecting and rinsing, not only for easily accessible areas but also for areas to which access is impossible or inadvisable.	been complied with by appropriate design.
2.2	PORTABLE HAND-HELD AND/OR HAND-GUIDED MACHINERY	Not applicable.
2.3	MACHINERY FOR WORKING WOOD AND MATERIAL WITH SIMILAR PHYSICAL CHARACTERISTICS	Not applicable.
3	SUPPLEMENTARY ESSENTIAL HEALTH AND SAFETY REQUIREMENTS TO OFFSET HAZARDS DUE TO THE MOBILITY OF MACHINER	-
4	SUPPLEMENTARY ESSENTIAL HEALTH AND SAFETY REQUIREMENTS TO OFFSET HAZARDS DUE TO LIFTING OPERATIONS	-
5	SUPPLEMENTARY ESSENTIAL HEALTH AND SAFETY REQUIREMENTS FOR MACHINERY INTENDED FOR UNDERGROUND WORK	-
6	SUPPLEMENTARY ESSENTIAL HEALTH AND SAFETY REQUIREMENTS FOR MACHINERY PRESENTING PARTICULAR HAZARDS DUE TO THE LIFTING OF PERSONS	-

2.2 EN ISO 12100:2010 Safety of machinery — General principles for design — Risk assessment and risk reduction

2.2.1 Risk Estimation Method

For risk estimation, the risk graph method of ISO / TR 14121-2, figure A.3, was used as the following.



Despite the rough estimation of the risk index, if after application of well-tried protective measure it is considered that the risk is adequately reduced, no further actions will be required. Otherwise, a specific risk estimation method should be used.

2.2.2 Risk Assessment Methodology

The risk assessment is based on a method recommended in ISO / TR 14121-2: 2007, in which the factors Se-CI ($Fr + Pr + Av$) and diagram are used to evaluate the level of risk. The meaning of those is described in the following:

(1) Se, severity of the possible harm:

1. Scratched, bruises that are cured by first aid or similar.
2. More severe scratches, bruises, stabbing which require medical attention from professionals.
3. Normally irreversible injury; it will be slightly difficult to continue work after healing, if possible at all.
4. Irreversible injury in such a way that it will very difficult to continue work after healing, if possible at all.

- (2) Fr, average interval between frequency of the exposure and its duration;
1. Interval between exposures is more than a year.
 2. Interval between exposures is more than two weeks but less than or equal to a year.
 3. Interval between exposures is more than a day but less than or equal to two days.
 4. Interval between exposure is more than an hour but less than or equal to a day. Where the duration is short than 10 minutes, the above values may be decreased to the next level.
 5. Interval less than or equal to an hour. This value is not to be decreased at any time.
- (3) Pr, possibility of occurrence of a hazardous event:
1. Negligible
 2. Rarely
 3. Possible
 4. Likely
 5. Very high
- (4) Av, possibility of avoiding or limiting harm:
1. Likely
 2. Possible
 3. Impossible

The risk is evaluated by using matrix as below:

Severity S	Class CI (Fr + Pr + Av)				
	3-4	5-7	8-10	11-13	14-15
4					
3					
2					
1					

Where the severity, Se, cross the class, CI:

In the black area, protective measures have to be implemented to reduce risk;

In the gray area, protective measures are recommended to be implemented to further reduce risk;

In the remaining area, the risk is already adequately reduced.

2.2.3 Acceptance Criteria

A form is filled in with the result of this risk assessment; each hazardous situation is allocated a risk index. In this example, the estimation of each hazardous situation is made with consideration given to the following:

- a risk of 1 or 2 corresponds to the lowest priority of action (priority 3);
- a risk index of 3 or 4 corresponds to the medium priority of action (priority 2);
- and a risk index of 5 or 6 corresponds to the highest priority of action (priority 1).

Possible means of reducing risk are considered and the risk is then estimated for the final design using the same risk graph in the same manner as for the initial design. In this specific case, a risk index of 2 or less have been evaluated as representing the level at which no further risk reduction is required.

2.3 Laser equipment safety

The machine is designed according to EN 60825-1:204, EN ISO 11553-1:2020+A11:2020 and EN ISO 11553-2:2008. According to our analysis and calculation, these products is Class 4 Laser products according to EN 60825-1:2014. The warning label is attached on the machine. The protective housing is used to protect the operator, and if the protective housing is open, the laser source of machine will not work. And the products has verified according US FDA regulation 21 CFR 1040.10.



当心激光

Caution, laser

AVOID EXPOSURE
LASER RADIATION IS EMITTED
FROM THIS APERTURE

D A N G E R

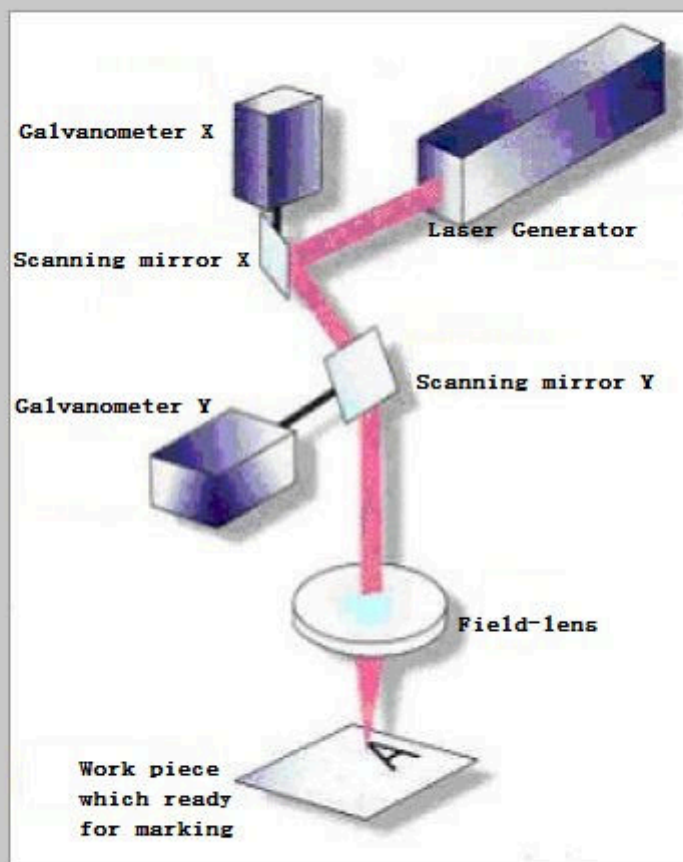
LASER RADIATION
AVOID DIRECT EYE EXPOSURE



Max Output $\leq 50W$
WAVELENGTH $1064nm \pm 10$
Class IV Laser Product
This product complies with 21 CFR

FDA

MADE IN CHINA



2.4 Related Regulation and Standards

2006/42/EC Machinery Directive

2014/35/EU Low Voltage Directive

EN ISO 12100:2010 Safety of machinery-Basic concepts, general principles for design-Part 1: Basic terminology, methodology

EN 60825-1:2014 Safety of laser products. Equipment classification and requirements

EN ISO 11553-1:2020+A11:2020-Safety of machinery. Laser processing machines. Laser safety requirements

EN ISO 11553-2:2008- Safety of machinery. Laser processing machines. Safety requirements for hand-held laser processing devices

EN 60204-1:2018 Safety of machinery-Electrical equipment of machines- General Requirements

EN ISO 11145:2018 Optics and photonics. Lasers and laser-related equipment. Vocabulary and symbols

EN ISO 13857:2019 Safety of machinery. Safety distances to prevent hazard zones being reached by upper and lower limbs

EN ISO 13849-1:2015 – TC Tracked Changes. Safety of machinery. Safety-related parts of control systems. General principles for design

EN ISO 13850:2015 – TC Tracked Changes. Safety of machinery. Emergency stop function. Principles for design

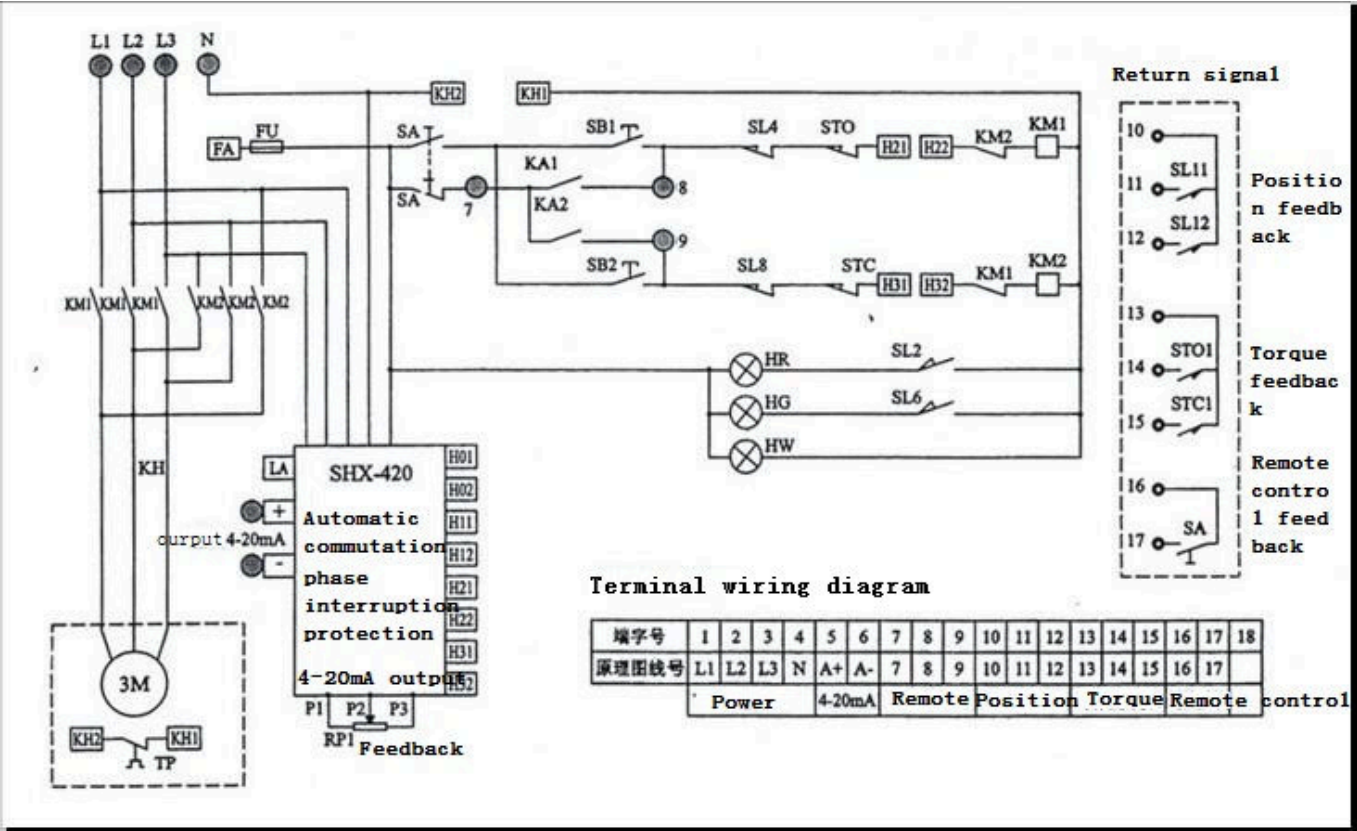
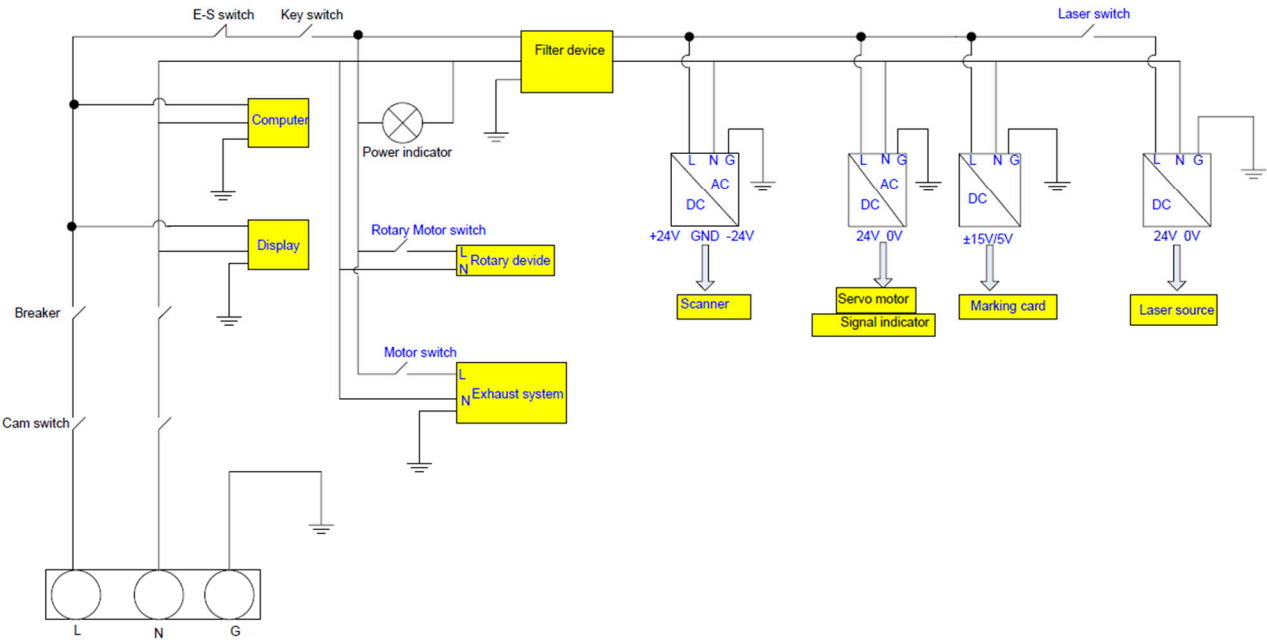
EN ISO 14119:2013 Safety of machinery. Interlocking devices associated with guards. Principles for design and selection

ANNEX

A.1 Instruction manual

Get the Instruction manual from the manufacturer

A.2 Electrical parts list and drawing



A.3 EC Declaration of Conformity

EC DECLARATION OF CONFORMITY

According to the following EC Directives



2006/42/EC Machinery Directive

2014/35/EU Low Voltage Directive

2014/30/EU Electromagnetic Compatibility Directive

Manufacturer: LIAOCHENG DONGCHANGFU KETAI LASER EQUIPMENT CO.,LTD
A13-1 Luxi International Pioneer Park, 150 meters west Haiyuan Road, Yansi Street,
Dongchangfu District, Liaocheng City, Shandong Province, China

Manufacturer declares that the machine described hereafter:

Product name: Laser Welding/Cleaning Machine

Models: KT-50, KT-60, KT-100, KT-150, KT-200, KT-400, KT-500, KT-1000, KT-1500, KT-2000,
KT-3000

Fulfills all the relevant provisions of the directives:

2006/42/EC Machinery Directive

2014/35/EU Low Voltage Directive

2014/30/EU Electromagnetic Compatibility Directive

EN ISO 12100:2010 Safety of machinery-Basic concepts, general principles for design-Part 1:
Basic terminology, methodology

EN 60825-1:2014 Safety of laser products. Equipment classification and requirements

EN ISO 11553-1:2020+A11:2020-Safety of machinery. Laser processing machines. Laser safety
requirements

EN ISO 11553-2:2008 Safety of machinery. Laser processing machines. Safety requirements for
hand-held laser processing devices

EN 60204-1:2018 Safety of machinery-Electrical equipment of machines-
General Requirements

EN IEC 61000-6-2:2019 Electromagnetic compatibility (EMC). Generic
standards. Immunity for industrial environments

EN IEC 61000-6-4:2019 Electromagnetic compatibility (EMC). Generic
standards. Emission standard for industrial environments

Signature: Qirui Qu

(Manager)

Date:2022-07-08

LIAOCHENG DONGCHANGFU KETAI LASER EQUIPMENT CO.,LTD

A.4 The photo of product



A.5 General Test Report

A.5.1 EN 60204-1:2018 test report(KT22071003MR)

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
1	Scope	
	This part of EN 60204 applies to the application of electrical and electronic equipment and systems to machines not portable by hand while working. Including a group of machines working higher level system aspect	-
	This part is applicable to the electrical equipment or parts of the electrical equipment that operate with nominal supply voltages not exceeding 1000V for alternating current and not exceeding 1500V for direct current, and with nominal frequencies not exceeding 200Hz	-
2	Normative references	-
3	Definitions	-
4	General requirements	-
4.1	The risks associated with the hazards relevant to the electrical equipment shall be assessed as part of the overall requirements for risk assessment of the machine.	Pass. See the risk assessment report in detail.
4.2	Selection of equipment	-
	Electrical components and devices shall be suitable for their intended use and shall conform to relevant IEC standards where such exist	Pass.
4.3	Electrical supply	-
	The electrical equipment shall be designed to operate correctly with the relevant conditions of supply	Pass. They can be operated correctly with the relevant conditions of supply.
4.4	Physical environment and operating conditions	-
	Shall be suitable for use as specified: - Electromagnetic compatibility - Ambient air temperature - Humidity - Altitude - Contaminants - Ionizing and non-ionizing radiation	Pass. This machine is suitable for use as specified in this clause.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	- Vibration, shock and bump	
4.5	Transportation and storage	-
	-2.5° C to + 55° C And short periods not exceeding 24 h at up to + 70° C	Pass. This requirement is complied with.
4.6	Provisions for handling	-
	Heavy and bulky equipment shall be moved by cranes or similar equipment	Pass. Appropriate equipments are provided.
4.7	Installation and operation	-
	According to supplier's instructions	Pass. All the related information is stated in the instruction manual.
5	Incoming supply conductors terminations and devices for disconnecting and switching off	-
5.1	Incoming supply conductor terminations	-
	Single or multiple power supply	Pass. multiple power supply.
	The supply conductors are terminated at the supply disconnection device if not, the separate terminals shall be provided	Pass.
	If a neutral conductor is used, it shall be indicated clearly in the technical documentation	Pass
	Labeled N shall be provided for the neutral conductor	Pass
	No connection between the protective bonding circuit and the neutral conductor	Pass
	All terminals for the incoming supply connection shall be identified clearly	Pass. All of them have been identified clearly.
5.2	Terminal for connection to the external protective earthing system	-
	Shall be provided in the vicinity of the associated phase conductor terminals	Pass.
	Cross-sectional area of the external protective copper conductor according to table 1	Pass.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	Marking of the external protective conductor with the letters "PE"	Pass.
	Other protective terminals shall be marked with the symbol 	Pass.
	All protective terminals shall be coloured by use of the bicolor combination Green-And-Yellow	Pass.
5.3	Supply disconnecting (isolating) device	-
5.3.1	General	-
	Shall disconnect (isolate) the electrical equipment of the machine from supply when required	Pass. Disconnect the electrical equipment of the machine from supply.
	If two or more supply disconnecting devices are provided, protective interlocks shall be used.	Not applicable.
5.3.2	Type	-
	a) Switch-disconnector according to IEC60947-3 b) A disconnector with auxiliary contact c) Circuit breaker according to IEC 60947-2 d) switching device in accordance with an IEC60947-1 e) a plug/socket combination for a flexible cable supply	Pass. c).
5.3.3	Requirements	-
	Have one OFF and one ON position only	Pass.
	Marked clearly with "I" and "O"	Pass.
	Have a reset(tripped) position between "O" and "I"	Pass.
	Have an external operating handle	Pass.
	The handle should be Black or Grey	Pass.
	Could be locked in the OFF position	Pass.
	The handle should be coloured Black or Grey	Pass.
	Disconnect all live conductors of its power supply circuit	Pass.
	Sufficient breaking capacity	Pass.
	When the supply disconnecting device is a plug/socket combination, it shall fulfill the following requirements: – have the switching capability, – a) to f) of 13.4.5.	Pass. The requirement has complied with.
5.3.4	Operating means	-

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	Shall be easily accessible and located:0.6 m~1.9 m	Pass. Above 1m.
5.3.5	Excepted circuits	-
	Have their own disconnecting device (Recommended)	Not applicable. No excepted circuit has been found.
	If no disconnecting device, the relevant safety requirements shall be complied with	Not applicable. No excepted circuit has been found.
5.4	Devices for switching off for prevention of unexpected start-up	-
	Unexpected start-up shall be prevented (Devices described in 5.3.2 may fulfil this function)	Not applicable. No need.
5.5	Devices shall be provided for disconnecting (isolating) electrical equipment to enable work to be carried out when it is de-energised and isolated.	Pass. Appropriate devices are provided.
5.6	Protection against unauthorized, inadvertent and/or mistaken connection	-
	The devices described in 5.4 and 5.5 shall be equipped with such function	Not applicable. No need.
6	Protection against electric shock	-
6.1	General	See the relevant clauses.
6.2	Protection against direct contact	-
6.2.1	General	-
	Either 6.2.2 or 6.2.3 and, where applicable, 6.2.4 shall be applied	See the relevant clauses.
	When the equipment is located in places open to all persons, measures of either 6.2.3 or 6.2.2 with a min. degree of protection against direct contact corresponding to IP4X or IPXXD shall be applied	Not applicable. This machine shall be located in the factory, and be operated by the authorized persons.
6.2.2	Protection by enclosures	-
	Min protection degree for live parts: IP2X or IPXXB	Pass. IP2X.
	Min. protection degree for top surface:IP4X or IPXXD	Pass. .
	Opening an enclosure shall only be possible under one	-

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	of the following conditions:	
a)	The use of a key or tool is necessary by skilled or instructed persons	Pass.
	Min. protection degree for live parts on the inside of doors:IP1X or IPXXA	Pass. IP2X.
	Min. protection degree for live parts inside the enclosure:IP2X or IPXXB	Pass. IP2X.
b)	The disconnection of live parts inside the enclosure before the enclosure may be opened (Use of the supply disconnecting device)	Pass. Main switch with interlocking is provided.
	Min. protection degree for all parts are still have live after switching off the disconnecting device:IP2X or IPXXB	Not applicable.
	Such parts shall be marked with a warning sign: 	Pass.
c)	Opening without the use of a key or a tool and without disconnection of live parts shall be possible only when the min. protection degree is IP2X or IPXXB	Pass
6.2.3	Protection by insulation of live parts	-
	Live parts shall be covered by insulation which can only be removed by destruction	Pass.
	Such insulation shall withstand the mechanical, chemical, electrical and thermal stresses under normal service conditions	Pass.
6.2.4	Protection against residual voltages	-
	After disconnecting, any exposed conductive part having a residual voltage that shall be discharged to 60V or less within 5 seconds	Pass. This requirement is complied with.
	If mentioned above is not possible, a warning notice drawing shall be provided	Pass
	If the withdrawal of plugs or similar devices would make the exposure of the conductors (e.g. pins),the discharge time shall not exceed 1 second such conductor shall have the protection degree at least IP2X or IPXXB	Pass
6.2.5	Protection by barriers	-
	For protection by barriers, see 412.2 of IEC 60364-4-41	Not applicable.
6.2.6	Protection by placing out of reach or protection by	-

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	obstacles	
	For protection by placing out of reach see 412.4 of IEC 60364-4-41	Not applicable.
	For protection by obstacles see 412.3 of IEC 60364-4-41	Not applicable.
	For collector wire systems or collector bar systems with a degree of protection less than IP2X see 12.7.1	Not applicable.
6.3	Protection against indirect contact	-
6.3.1	General	-
	For each circuit or part, at least one of the measures in accordance with 6.3.2 to 6.3.3 shall be applied	See the following descriptions.
6.3.2	Measure to prevent the occurrence of a hazardous touch voltage	-
6.3.2.1	General	-
6.3.2.2	Protection by use of class II equipment or by equivalent insulation	-
	Application of class II equipment or equivalent insulation	Pass. Appropriate insulations have been provided.
6.3.2.3	Protection by electrical separation	-
	Application of electrical separation.	Pass.
6.3.3	Protection by automatic disconnection of supply	-
	Use of the automatic disconnection of supply	Pass
	Where automatic disconnection is provided in accordance with a), and disconnection within the time specified in Clause A.1 cannot be assured, supplementary bonding shall be provided as necessary to meet the requirements of Clause A.3.	Pass
6.4	Protection by the use of PELV	-
6.4.1	General requirements	-
	PELV (protective extra-low voltage) circuits shall satisfy all of the conditions specified in this clause	Not applicable. No PELV circuit has been used.
6.4.2	Sources for PELV	-
	The sources for PELV shall be one of the conditions specified in this clause	Not applicable. No PELV circuit has been used.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
7	Protection of equipment	-
7.1	General	-
7.2	Over current protection	-
7.2.1	General	-
7.2.2	Supply conductors	
	The supplier is not responsible for providing the over current device for the supply conductors	Pass.
	Installation diagram with data necessary for selection of the over current protective device	Pass. Related information is stated in the installation diagram.
7.2.3	Power circuits	-
	All conductors shall be protected against over current (except earthed neutral conductor)	Pass. Appropriate devices against over current are provided.
	Cross-section area of neutral conductor	Not applicable.
	For neutral conductors smaller than phase conductors then IEC 60364-4-473 shall apply	Not applicable. No neutral conductor has been used.
	In IT-systems, it is recommended that the neutral conductor is not used	Not applicable.
7.2.4	Control circuits	-
	Conductors of control circuits connected to the supply voltage and of circuits feeding control circuit transformers shall be protected against over current in accordance with 7.2.3	Pass. Appropriate devices against over current are provided.
7.2.5	Socket outlets and their associated conductors	-
	Over current protection devices shall be provided in the unearthed live conductors	Pass. Over current protection devices are provided except the earthed live conductor.
7.2.6	Lighting circuits	-
	All unearthed conductors of circuits supplying lighting shall be protected against the effects of short circuits by the provision of over current devices separate from those protecting other circuits	Pass. Appropriate devices against the effects of short circuits are provided

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
7.2.7	Transformers	-
	Transformers shall be protected against Over current in accordance with the manufacturer's Instructions.	Not applicable.
	The type and setting of the over current protective device should be in accordance with the recommendations of the transformer supplier	Not applicable.
7.2.8	Location of over current protective device	-
	Over current protective device shall be located at the point where the conductors to be protected are connected to their supply	Pass. Over current protective device are installed correctly.
7.2.9	Over current protective devices	-
	Sufficient breaking capacity	Pass.
	Where fuses are used, a type readily available in the country of use shall be selected, or arrangement shall be made with the use for the supply of spare parts	Pass. Spare parts are readily available.
7.2.10	Rating and setting of over current protective devices	-
	The rated current of fuses or the setting current of other over current protective devices shall be selected as low as possible but adequate for the anticipated over currents	Pass. The rated current of fuses has been correctly selected.
	The rated current or setting of an over current protective device is determined by the current carrying capacity of the conductors to be protected by that device in accordance with 12.4	Pass. Please see the related clause.
7.3	Protection of motors against overheating	-
7.3.1	Protection of motors shall be provided for each motor rated at more than 0.5kW	Pass. The overload protection is provided.
	In applications where an automatic interruption of the motor operation is unacceptable, the means of detection shall give a warning signal to which the operator can respond	Not applicable. No need.
7.3.2	Overload protection	
	Detection of overload shall be provided in each live	Pass.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	conductor excepted for the neutral conductor	This function has been provided.
	For motors having single-phase or d.c. power supplies. Detection in only one unearthed live conductor is permitted	Not applicable. The detection is in each unearthed live conductors.
7.3.3	Over-temperature protection	
	The provision of motors with over-temperature protection (see IEC 60034-11) is recommended in situations where the cooling can be impaired	Not applicable. No need.
7.3.4	Current limiting protection	-
	Where protection against the effects of overheating in three phase motors is achieved by current limitation, the number of current limitation devices may be reduced from 3 to 2 (see 7.3.2).	Not applicable.
7.4	Abnormal temperature protection	-
	Use of abnormal temperature protection	Not applicable. No need.
7.5	Protection against supply interruption or voltage reduction and subsequent restoration	-
	Where a voltage drop or a supply interruption can cause a hazardous condition, damage to the machine, or to the work in progress, under voltage protection shall be provided	Not applicable. No this kind of hazard has been found.
	The operation of the under voltage device shall not impair the operation of any stopping control of the machine	Not applicable. No under voltage device is used.
	Upon restoration of the voltage or upon switching on the incoming supply, automatic or unexpected restarting of the machine shall be prevented	Pass. Automatic or unexpected restarting of the machine can be prevented.
	Where only a part of the machine or of the group of machines working together in a coordinated manner is affected by the voltage reduction or supply interruption, the under voltage protection shall initiate appropriate control responses to ensure co-ordination	Not applicable.
7.6	Motor over speed protection	-

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	Use of the motor over speed protection	Pass. Over speed of the motor is protected.
7.7	Earth fault/residual current protection	-
	Use of earth fault/residual current protection for automatic disconnection	Not applicable.
7.8	Phase sequence protection	-
	Where an incorrect sequence of the supply voltage can cause a hazardous condition or damage to the machine, protection shall be provided	Not applicable.
7.9	Protection against over voltage due to lighting and to switching surges	-
	Protection devices can be provided to protect against the effects of over voltages due to lighting or to switching surges	Not applicable.
8	Equipotential bonding	-
8.1	General	-
	Protective bonding is a basic provision for fault protection to enable protection of persons against electric shock from indirect contact (see 6.3.3 and 8.2).	Pass.
8.2	Protective bonding circuit	-
8.2.1	General	-
	The protective bonding circuit should consists of: – PE terminal(s) (see 5.2); – the protective conductors in the equipment of the machine including sliding contacts where they are part of the circuit; – the exposed conductive parts and conductive structural parts of the electrical equipment; – those extraneous conductive parts which form the structure of the machine.	Pass. These requirements have been complied with.
	All parts of the protective bonding circuit shall be so designed that they are capable of withstanding the highest thermal and mechanical stresses	Pass. This requirement has been complied with.
	Any structural part of the electrical equipment or of the machine may be used as part of protective bonding	Pass. They have been used as part of

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	circuit	protective bonding circuit.
	If an IT distribution system is used, the machine structure shall be sued as part of the protective bonding circuit in conjunction with an earth fault supervision system	Not applicable.
	The structural bonding is not required where all the equipment provided is in accordance with 6.3.2.2	Pass.
8.2.2	Protective conductors	-
	Protective conductors shall be identified according to 13.2.2	Pass. See clause 13.2.2 in detail.
	Copper conductors should be used	Pass.
	Where a conductors material other than copper is used, its electrical resistance per unit length shall not exceed that of the allowable copper conductor and such conductors shall not be less than 16 mm ² in cross-sectional area	Not applicable. Only copper conductors are used.
	The cross-sectional area of protective conductors shall be determined according to the requirements of: -543 of IEC 60364-5-54; or -7.4.3.1.7 of IEC 60439-1, as appropriate	Pass. Protective conductors have been determined according to these requirements.
8.2.3	Continuity of the protective bonding circuit	-
	All exposed conductive parts shall be connected to the protective bonding circuit	Pass. All the exposed conductive parts have been connected.
	Where a part is removed for any reason, the protective bonding circuit for the remaining parts shall not be interrupted	Pass. This requirement is taken into account during design.
	Connection and bonding points shall be so designed that their current-carrying capacity is not impaired by mechanical, chemical, or electrochemical influence	Pass. All the connections and bonding points have been designed according to this requirement.
	Metal ducts of flexible or rigid construction and metallic cable sheathes shall not be used as protective bonding conductors	Pass. No this kind of construction has been used as protective bonding conductor.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	Nevertheless such metal ducts and the metal sheathing of all connecting cables shall be connected to the protective bonding circuit	Not applicable. No metal duct or metal sheathing has been used.
	Where the electrical equipment is mounted on lids, doors, or cover plates, continuity of the protective bonding circuit shall be ensured and it is recommended that a protective conductor is used	Pass. That bonding circuit has been ensured and recommended that a protective conductor is used.
	Otherwise fastenings, hinges or sliding contacts designed to have a low resistance shall be used	Pass. All the devices are protected appropriately.
	The continuity of the protective conductor in cables that are exposed to damage shall be ensured by appropriated measures	Pass. Appropriate protection has been provided.
	For requirements for the continuity of the protective conductor using collector wires, collector bars and slip-ring assemblies (see 12.7.2)	Not applicable, No this kind of device is used.
8.2.4	Exclusion of switching devices from the protective bonding circuit	-
	Shall not incorporate a switching device, an over current protective device nor a means for current detection for such devices	Pass.
	The only means permitted for interruption shall be carried out by instructed or skilled persons by using a tool	Pass.
8.2.5	Parts that need not to be connected to the protective bonding circuit	-
	Screws, rivets, and nameplates and to parts inside an enclosure, are not necessary to connect to the protective bonding circuit (see also 410.3.3.5 of IEC 60364-4-41).	-
8.2.6	Protective conductor connecting points	-
	All protective conductors shall be terminated in accordance with 13.1.1.	Pass. Please see the related clause.
	Shall have no other function and shall not be used to attach or connect appliances or parts	Pass.
	Use of earthing symbol 	Pass.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
		Earthing symbol is used.
	By the bicolor combination GREEN-AND-YELLOW	Pass. The color is correct.
8.2.7	Mobile machines	-
	On mobile machines with on-board power supplies, the protective conductors, the conductive structural parts of the electrical equipment, and those extraneous conductive parts which form the structure of the machine shall all be connected to a protective bonding terminal to provide protection against electric shock.	Not applicable.
8.2.8	Additional protective bonding requirements for electrical equipment having earth leakage currents higher than 10 mA a.c. or d.c.	
	associated protective bonding circuit shall be satisfied:	-
	a) the protective conductor shall have a cross-sectional area of at least 10 mm ² Cu or 16 mm ² Al, through its total run;	Not applicable.
	b) a second protective conductor of at least the same cross-sectional area shall be provided up to a point where the protective conductor has a cross-sectional area not less than 10 mm ² Cu or 16 mm ² Al.	Not applicable.
	c) automatic disconnection of the supply in case of loss of continuity of the protective conductor.	Not applicable.
	To prevent difficulties associated with electromagnetic disturbances, the requirements of 4.4.2 also apply to the installation of duplicate protective conductors.	Not applicable.
	a warning label shall be provided adjacent to the PE terminal, and where necessary on the nameplate of the electrical equipment.	Not applicable.
	The information provided under 17.2 b)1) shall include information about the leakage current and the minimum crosssectional area of the external protective conductor.	Not applicable.
8.3	Functional bonding	-
	Protection against maloperation as a result of insulation failures can be achieved by connecting to a common	Pass.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	conductor in accordance with 9.4.3.1.	
	For recommendations regarding functional bonding to avoid maloperation due to electromagnetic disturbances, see 4.4.2.	Pass.
8.4	Measures to limit the effects of high leakage current	-
	The protective bonding circuit shall be connected to exposed conductive parts of the equipment and, in addition, to the secondary winding of the transformer.	Pass.
	The protective conductor(s) between the equipment and the secondary winding of the transformer shall comply with one or more of the arrangements described in 8.2.8.	Pass.
9	Control circuits and control functions	-
9.1	Control circuits	-
9.1.1	Control circuit supply	-
	Transformers shall be used for supplying the control circuits	Pass
	Transformers are not mandatory for machines with a single motor starter and a maximum of two control devices	Pass
9.1.2	Control circuit voltages	-
	The nominal voltage shall not exceed 277 V when supplied from a transformer	Pass
9.1.3	Protection	-
	Over current protection shall be provided according to 7.2.4 and 7.2.10	Pass. The over current protection has been provided.
9.2	Control functions	-
9.2.1	Start functions	-
	Start functions shall operate by energizing the relevant circuit (see 9.2.5.2).	Pass. This requirement is taken into account during design.
9.2.2	Stop functions	-
	Each machine shall be equipped with appropriate stop functions	Pass. Appropriate stops are provided.
9.2.3	Operating modes	-
	When hazardous conditions can arise from mode	Pass.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	selection, such selection shall be prevented by suitable means	No hazardous condition can arise when model selection operation.
	Mode selection by itself shall not initiate machine operation (A separate action by the operator shall be required)	Not applicable. No automatic mode selection.
	Safeguarding shall remain effective for all operating modes	Pass.
	Indication of the selected operating mode shall be provided	Pass. Appropriate indication is provided.
9.2.4	Suspension of safety functions and/or protective measures	-
	Where it is necessary to suspend safety functions and/or protective measures (for example for setting or maintenance purposes), protection shall be ensured by the requirement.	Pass. Provisions for preventing automatic operation are provided.
9.2.5	Operation	-
9.2.5.1	General	-
	The necessary interlocks (see 9.3) shall be provided for safe operation	Pass. Please see the related clause.
	Measures shall be taken to prevent movement of the machine in an unintended manner after any stopping of the machine	Pass. No unintended operation can be occurred after any stopping of the machine.
	Where a machine has more than one control station, measures shall be provided to ensure that initiation of commands from different control stations do not lead to a hazardous situation.	Not applicable. There is only one control station.
9.2.5.2	Start	-
	The start of an operation shall be possible only when all the safeguards are in place and functional (except described in 9.2.4)	Pass. Appropriate interlocks are provided.
	Manual control of such operations shall be by hold-to-run controls, together with enabling devices, as appropriate.	Not applicable.
	Suitable interlocks shall be provided to secure correct	Pass.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	sequential starting	Suitable interlocks are provided.
	The use of more than one control station to initiate a start	Not applicable. Only one control station is used.
9.2.5.3	Stop	-
	Category 0, category 1 and/or category 2 stops shall be provided where indicated by the risk assessment and the functional requirements of the machines (see 4.1).	Pass. Category 0 and category 1 stops are provided.
	Stop functions shall override related start functions (see 9.2.5.2).	Pass. Stop functions have priorities over start functions.
	Where required, facilities to connect protective devices and interlocks shall be provided.	Pass.
	The reset of the stop function shall not initiate any hazardous situation.	Pass. There will no hazardous situation.
	Stop commands from any control station shall be effective when required by the risk assessment of the machine.	Not applicable.
9.2.5.4	Emergency operations (emergency stop, emergency switching off)	-
9.2.5.4.1	General	-
	This part of IEC 60204 specifies the requirements for the emergency stop and the emergency switching off functions of the emergency operations listed in Annex E, both of which are, in this part of IEC 60204, initiated by a single human action.	Pass.
	The reset of the command shall not restart the machinery but only permit restarting.	Pass.
	It shall not be possible to restart the machinery until all emergency stop commands have been reset. It shall not be possible to reenergize the machinery until all emergency switching off commands have been reset.	Pass. It has been complied with.
9.2.5.4.	Emergency stop	-

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
2		
	Shall function either as a category 0 stop or as a category 1 stop	Pass. Category 0 stop.
	The choice of the emergency stop shall be determined by the risk assessment of the machine	Pass. According to the result of risk assessment of the machine.
	In addition to the requirements for stop (see 9.2.5.3), the emergency stop function has the following requirements: – it shall override all other functions and operations in all modes; – power to the machine actuators that can cause a hazardous situation(s) shall be either removed immediately (stop category 0) or shall be controlled in such a way to stop the hazardous motion as quickly as possible (stop category 1) without creating other hazards; – reset shall not initiate a restart.	Pass. These requirements have been complied with.
9.2.5.4.	Emergency switching off	-
3		
	Use of emergency switching off	Pass. Identical to that of emergency stop.
9.2.5.5	Monitoring of command actions	-
	Movement or action of a machine or part of a machine that can result in a hazardous condition shall be monitored	Pass. They have been monitored by the controller during the working of the machine.
9.2.6	Other control functions	-
9.2.6.1	Hold-to-run controls	-
	Hold-to-run controls shall require continuous actuation of the control device(s) to achieve operation.	Not applicable. No this kind of device has been used.
9.2.6.2	Two-hand control	-
	Three types of two-hand control are defined in ISO 13851, the selection of which is determined by the risk assessment.	Not applicable. No two-hand control has been used.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
9.2.6.3	Enabling control	-
	Enabling control (see also 10.9) is a manually activated control function interlock that:	-
	a) when activated allows a machine operation to be initiated by a separate start control, and	Pass.
	b) when de-activated	-
	– initiates a stop function in accordance with 9.2.5.3, and – prevents initiation of machine operation.	Pass.
9.2.6.4	Combined start and stop controls	-
	Push-buttons and similar control devices that, when operated, alternately initiate and stop motion shall only be provided for functions which cannot result in a hazardous situation to be controlled by that operator control station	Pass
9.2.7	Cableless control	-
9.2.7.1	General	-
	This subclause deals with the functional requirements of control systems employing cableless (for example radio, infra-red) techniques for transmitting commands and signals between a machine control system and operator control station(s).	Not applicable. No cableless control is used.
	Means shall be provided to readily remove or disconnect the power supply of the operator control station (see also 9.2.7.3).	Not applicable. No cableless control is used.
	Means (for example key operated switch, access code) shall be provided, as necessary, to prevent unauthorized use of the operator control station.	Not applicable. No cableless control is used.
	Each operator control station shall carry an unambiguous indication of which machine(s) is(are) intended to be controlled by that operator control station.	Not applicable. No cableless control is used.
9.2.7.2	Control limitation	-
	Measures shall be taken to prevent the machine from responding to signals other than those from the intended operator control station	Not applicable. No cable less control is used.
	Where necessary, means shall be provided so that the machine can only be controlled from operator control	Not applicable. No cable less control is used.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	station in one or more predetermined zones or locations	
9.2.7.3	Stop	-
	Operator control stations shall include a separate and clearly identifiable means to initiate the stop function of the machine or of all the motions that can cause a hazardous condition	Not applicable. No cable less control is used.
	The actuating means to initiate this stop function shall not be marked or labeled as an emergency stop device	Not applicable. No cable less control is used.
	A machine which is equipped with cableless control shall have a means of automatically initiating the stopping of the machine and of preventing a potentially hazardous operation	Not applicable. No cable less control is used.
9.2.7.4	Use of more than one operator control station	-
	Where a machine has more than one operator control station, measures shall be taken to ensure that only one control station can be enabled at a given time	Not applicable. No cable less control is used.
	An indication of which operator control station is in control of the machine shall be provided at suitable locations as determined by the risk assessment of the machine	Not applicable. No cable less control is used.
9.2.7.5	Battery-powered operator control stations	-
	A variation in the battery voltage shall not cause a hazardous condition	Not applicable No cable less control is used.
	If one or more potentially hazardous motions are controlled using a battery-powered operator control station, a clear warning shall be given to the operator when a variation in battery voltage exceeds specified limits	Not applicable No cable less control is used.
	Under those circumstances, the operator control station shall remain functional long enough to put the machine into a non-hazardous condition	Not applicable. No cable less control is used.
9.3	Protective interlocks	-
9.3.1	Reclosing or resetting of an interlocking safeguard	-
	The reclosing or resetting of an interlocking safeguard shall not initiate machine motion or operation	Pass No safeguard can initiate machine motion or operation

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
9.3.2	Exceeding operating limits	-
	Where an operating limit (for example speed, pressure, position) can be exceeded leading to a hazardous situation, means shall be provided to detect when a predetermined limit(s) is exceeded and initiate an appropriate control action.	Pass. Appropriate position and pressure sensors and limit switches have been used.
9.3.3	Operation of auxiliary functions	-
	The correct operation of auxiliary functions shall be checked by appropriate devices	Not applicable.
	Use of appropriate interlocking	Not applicable.
9.3.4	Interlocks between different operations and for contrary motions	-
	Interlocking shall be provided against incorrect operation	Pass. Appropriate interlocking has been provided.
	For safety or for continuous operation, certain functions on the machine are required to be interrelated, proper co-ordination shall be ensured by suitable interlocks. For a group of machines working together in a co-ordinated manner and having more than one controller, provision shall be made to co-ordinate the operations of the controllers as necessary.	Pass. Appropriate interlocking has been provided.
	Where a failure of a mechanical brake actuator can result in the brake being applied when the associated machine actuator is energized and a hazardous situation can result, interlocks shall be provided to switch off the machine actuator.	Pass. Appropriate interlocking has been provided.
9.3.5	Reverse current braking	-
	Use of reverse current braking	Not applicable.
9.4	Control functions in the event of failure	-
9.4.1	General requirements	-
	Provision of control functions in case of failure according to the level of risk assessment	Pass. According to the risk assessment.
9.4.2	Measures to minimize risk in the event of failure	-
9.4.2.1	Use of proven circuit techniques and components	-

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	Use of proven circuit techniques and components	Pass. Appropriate components have been used.
9.4.2.2	Provisions of partial or complete redundancy	-
	Redundancy can be effective in normal operation (on-line redundancy) or designed as special circuits that take over the protective function (off-line redundancy) only where the operating function fails.	Not applicable. Appropriate provisions have been taken.
9.4.2.3	Provision of diversity	-
	The use of control circuits having different principles of operation, or using different types of components or devices can reduce the probability of hazards resulting from faults and/or failures.	Not applicable. Appropriate provisions have been taken.
	The combination of electrical and non-electrical systems (for example mechanical, hydraulic, pneumatic) may perform the redundant function and provide the diversity.	Not applicable. Appropriate provisions have been taken.
9.4.2.4	Provision for functional tests	-
	Functional tests may be carried out automatically by the control system, or manually by inspection or tests at start-up and at predetermined intervals, or a combination as appropriate(see also 17.2 and 18.6).	Pass. By inspection manually.
9.4.3	Protection against maloperation due to earth faults, voltage interruptions and loss of circuit continuity	-
9.4.3.1	Earth faults	-
	Earth faults on any control circuit shall not cause unintentional starting, potentially hazardous motions, or prevent stopping of the machine.	Pass. This requirement has been complied with.
9.4.3.2	Voltage interruptions	-
	Where a memory device is used, proper functioning in the event of power failure shall be ensured to prevent any loss of memory that can result in a hazardous condition	Pass. Any loss of memory can't result in a hazardous condition.
9.4.3.3	Loss of circuit continuity	-
	Where the loss of continuity of safety-related control circuits depending upon sliding contacts can result in hazardous condition, appropriate measures shall be	Not applicable. No this kind of situation.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	taken	
10	Operator interface and machine-mounted control devices	-
10.1	General	-
10.1.1	General device requirements	-
	As far as is practicable, those devices shall be selected, mounted, and identified or coded according to IEC 61310 and IEC 60447	Pass. These requirements appropriate for this machine have been complied with.
10.1.2	Location and mounting	-
	Appropriate location mounting for machine-mounted and hand-operated control、 foot-operator control devices .	Pass
10.1.3	Protection	-
	Operator and machine mounted control devices shall with stand the stress of expected use, and protect against contaminants.	Pass. They can withstand the stress of expected use.
	The operator interface control devices shall have a min. degree of protection: IPXXD	Pass. IP2XD.
10.1.4	Position sensors	-
	Position sensors shall not be damaged in the event of over travel	Pass. Because of the location of those position sensors, they can not be damaged in the event of over travel.
	Position sensors used in circuits with safety-related functions either shall have positive opening operation or shall provide similar reliability	Pass. Positive opening mode.
10.1.5	Portable and pendant control stations	-
	Portable and pendant control stations and their control devices shall be so selected and arranged as to minimize the possibility of inadvertent machine operations caused by shocks and vibrations	Not applicable.
10.2	Push-buttons	-
10.2.1	Colors	-
	Push-button actuators shall be color -coded according to table 2	Pass. Their colors are according to

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
		table 2.
10.2.2	Markings	-
	Use of adequate markings for push-buttons, with the symbols according to table 3.	Pass. Adequate markings are used.
10.3	Indicator lights and displays	-
10.3.1	General	-
	Indication and /or confirmation	Pass
10.3.2	Colors	-
	Color-coded according to table 4 (Unless otherwise agree between the supplier and the user)	Pass. Their colors are according to table 4.
10.3.3	Flashing lights and displays	-
	Use of flashing lights to display the higher priority information.	Not applicable.
10.4	Illuminated push-buttons	-
	Color-coded according to table 2 and 4	Pass. Their colors are according to table 4.
10.5	Rotary control devices	-
	Devices having a rotational member shall be mounted to prevent rotation of the stationary member (Friction alone shall not be sufficient)	Pass. Appropriate measure has been provided to prevent rotation of the stationary member.
10.6	Start devices	-
	Shall be constructed and mounted to minimize inadvertent operation	Pass. Flat type start push -buttons are used to prevent inadvertent operation.
	Mushroom-type actuators may be used for two-hand control (see also ISO 13851).	Not applicable.
10.7	Emergency stop devices	-
10.7.1	Location of emergency stop devices	-
	Devices for emergency stop shall be readily accessible	Pass. It is readily accessible.
	Emergency stop devices shall be located at each operator control station and at other locations where the	Pass. All of them are located at each

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	initiation of an emergency stop can be required	operator control station.
	Emergency stop devices shall be provided to minimize the confusion.	Pass. The emergency stop devices have this function.
10.7.2	Types of emergency stop device	-
	Use of type - a push-button operated switch - a pull-cord operated switch - a pedal-operated switch without a mechanical guard	Pass. A push-button operated switch.
	The devices shall have direct opening operation (see IEC 60947-5-1, Annex K).	Pass. It has direct opening operation.
10.7.3	Color of actuators	-
	Actuators of emergency stop devices shall be colored RED.	Pass. It has been colored RED.
	If a background exists immediately around the actuator, then this background shall be colored YELLOW. See also ISO 13850.	Pass. The background has been colored YELLOW.
10.7.4	Local operation of the supply disconnecting device to effect emergency switching off	-
	Where the supply disconnecting device is to be locally operated for emergency switching off, it shall be readily accessible and should meet the color requirements of 10.7.3	Not applicable No this kind of situation.
10.8	Emergency switching off devices	-
10.8.1	Location of emergency switching off devices	-
	Emergency switching off devices shall be located as necessary for the given application.	Not applicable. There is no emergency switching off devices.
	Those devices will be located separate from operator control stations.	Not applicable. There is no emergency switching off devices.
	Where it is necessary to provide a control station with an emergency stop device and an emergency switching off device, means shall be provided to avoid confusion between these devices.	Not applicable. There is no emergency switching off devices.
10.8.2	Types of emergency switching off device	-

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	The devices shall have direct opening action (see IEC 60947-5-1, Annex K).	Not applicable. There is no emergency switching off devices.
	The push-button operated switch may be in a break-glass enclosure.	Not applicable. There is no emergency switching off devices.
10.8.3	Color of actuators	-
	Actuators of emergency switching off devices shall be coloured RED.	Not applicable. There is no emergency switching off devices.
	If a background exists immediately around the actuator, then this background shall be colored YELLOW.	Not applicable. There is no emergency switching off devices.
	Where confusion can occur between emergency stop and emergency switching off devices, means shall be provided to minimize confusion.	Not applicable. There is no emergency switching off devices.
10.8.4	Local operation of the supply disconnecting device to effect emergency switching off	-
	Where the supply disconnecting device is to be locally operated for emergency switching off, it shall be readily accessible and should meet the colour requirements of 10.8.3	Not applicable No this kind of situation.
10.9	Enabling control device	-
	It shall signal the enabling control to allow operation when actuated in one position only.	Pass.
	Enabling control devices shall be selected and arranged so as to minimize the possibility of defeating.	Pass.
11	Control gear: location, mounting, and enclosures	-
11.1	General requirements	-
11.2	Location and mounting	-
11.2.1	Accessibility and maintenance	
	All control gears can be identified without moving or the wiring	Pass. All of them can be identified without moving or the wiring.
	Replacement without dismantling other equipment or parts of the machine	Pass. They can be replaced without

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
		dismantling other equipment or parts of the machine.
	Terminals not associated with control gear shall also comply with the requirements mentioned above	Pass. Those relative requirements have been complied with.
	Facilitate operation and maintenance from the front	Pass.
	Use of special tools (if necessary)	Pass. Key for enclosure door.
	If access is required for regular maintenance or adjustment, the devices shall be located between 0.4 m and 2.0 m above the severing level.	Pass. This requirement has been complied with.
	It is recommended that terminals be at least 0.2m above the servicing level and so placed that connectors and cables can be easily connected to them	Pass. Above 0.2m and can be connected easily.
	Except those for operating, indicating, measuring and cooling, no devices shall be mounted on doors, and normally removable access covers, of enclosures	Pass. No this kind of mounting.
	If control devices are connected through plug-in arrangements, their association shall be made clear by type (shape), marking or designation, singly or in combination.	Not applicable. No control device is connected through plug-in arrangement.
	Plug in devices shall be provided with non-interchangeable features	Not applicable. No Plug-in device is used.
	Use of plug/socket combinations shall be unobstructed access	Not applicable. No plug/socket combinations.
11.2.2	Physical separation or grouping	-
	Non-electrical parts and devices not directly associated with the electrical equipment shall not be located within enclosures containing control gear	Pass. No this kind of parts or devices are located within enclosures containing control gear.
	Devices such as solenoid valves should be separated from the other electrical equipment	Pass. All solenoid valves have be separated from the other electrical equipment.
	Control devices mounted in the same location and connected to the supply voltage, or to both supply and	Pass. Appropriate separation has

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	control voltages, shall be grouped separately from those connected only to the control voltages	been taken.
	Terminals shall be separated into groups for : power circuits; associated control circuits other control circuits, fed from external sources	Pass. They have been separated appropriately.
	The clearances and creep distances specified for the devices shall be maintained	Pass. Appropriately clearances and creep distances have been provided.
11.2.3	Heating effects	-
	Heat generating components shall be located so that the temperature of each component in the vicinity remains within the permitted limit.	Not applicable. No heating element.
11.3	Degrees of protection	-
	Enclosures of control gear: at least IP 22	
11.4	Enclosures, doors and openings	-
	Enclosure shall be constructed using materials capable of withstanding the mechanical, electrical and thermal stresses	Pass.
	Fasteners used to secure doors and covers should be of the captive type	Pass.
	Sanqiawgs provided for viewing internally mounted indicating devices shall be of a material suitable to withstand mechanical stress and chemical attach	Not applicable.
	It is recommended that enclosures doors shall have: Not wider than 0.9 m Vertical hinges Lift-off type Angle of opening at least 95°	Pass. These requirements have been complied with.
	The joints or gaskets of doors, lids, covers and enclosures shall withstand the chemical effects of the aggressive liquids, vapors, or gases used on the machine	Pass. They can withstand the chemical effects of the aggressive liquids, vapors, or gases used on the machine.
	The means used to maintain the degree of protection of an enclosure on doors, lids and covers that require	Pass. They can be secured firmly.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	opening or removal for operation or maintenance shall be secured	
	The degree of protection for all openings in the enclosures shall be secured	Pass. The degree of protection can be secured.
	Openings for cable shall be easily re-opened on site	Pass. They can be re-opened easily.
	There shall be no opening between enclosures containing electrical equipment and compartments containing coolant, lubricating or hydraulic fluids, or those into which oil, other liquids, or dust can penetrate	Pass. No this kind of opening has been found.
	The requirement mentioned above does not apply to electrical devices specially designed to operate in oil nor to electrical equipment in which coolants are used	Not applicable.
	Where there are holes in an enclosure for mounting purpose, the degree of protection for the enclosure shall be secured	Pass. Appropriate protection degree can be secured.
	Equipment that, can attain a surface temperature sufficient to cause a risk of fire or harmful effect to an enclosure material, the relevant requirements shall be complied	Not applicable. No this kind of equipment.
11.5	Access to control gear	-
	The min. dimensions of gangways in front of and between control gear shall be according to 481.2.4 of IEC 60364-4-481	Not applicable. No this kind of gangway has been found.
	Doors in gangways and for access to electrical operating areas shall: be at least 0.7 m wide and 2.0 m high; open outward; have a menace to allow opening from the inside without the use of a key or tool	Not applicable. No this kind of gangway has been found.
	The clear width shall be at least 1,0 m. In cases where such parts are present on both sides of the access way, the clear width shall be at least 1,5 m.	Not applicable. No this kind of gangway has been found.
12	Conductors and cables	-
12.1	General requirements	-

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	Conductors and cables shall be selected so as to be suitable for the operating conditions and external influences	Pass. All of conductors and cables used on these machines are suitable for the operating conditions and external influences.
12.2	Conductors	-
	Conductors shall be of copper.	Pass. Copper.
	Where aluminium conductors are used, the cross sectional area shall be at least 16 mm ² .	Not applicable. Only copper conductors are used.
	The cross-sectional area of conductors should not be less than as shown in Table 5.	Pass.
	All conductors that are subject to frequent movement shall have flexible stranding of class 5 or class 6 (see table C.4)	Pass.
12.3	Insulation	-
	Dielectric strength test for insulation conductors and cables: - 2000 V a.c. for a duration of 5 min (for operating voltage higher than 50 V a.c. or 120 V d.c.) - 500 V a.c. for duration of 5 min. (for separate PELV circuit)	Pass. This test has been carried out for the cables, and there is no breakdown is occurred.
	The mechanical strength and thickness of the insulation shall not be damaged in operation of during laying, especially for cables pulled into ducts	Pass. Appropriate insulation with sufficient mechanical strength and thickness is provided.
12.4	Current-carrying capacity in normal service	-
	The current-carrying capacities for PVC insulated wiring between enclosures and individual items of equipment under steady-state conditions should complied with Table 6.	Pass. According to table 6.
12.5	Conductor and cable voltage drop	-
	The voltage drop for conductors and cables shall not exceed 5% of the nominal voltage	Pass. Not exceed 5%.
12.6	Flexible cables	-

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
12.6.1	General	-
	Flexible cables shall have class 5 or class 6 conductors	Not applicable. No flexible cable has been used.
	Cables that are subjected to server duties shall be of adequate construction	Not applicable.
12.6.2	Mechanical rating	-
	The tensile stress for copper conductors shall not exceed 15 N/mm ² of the copper cross-sectional area	Pass. Not exceed 15 N/mm ²
	If the demands of the application exceed the tensile stress, it of 15 N/mm ² , cables with special construction features should be used and the allowed max. tensile stress strength should be agree with the cable manufacturer	Not applicable. No this kind of situation.
12.6.3	Current-carry capacity of cables wound on drums	-
	Cables to be wound on drums shall be selected with conductors having a cross-sectional area such that, when fully wound on the drum and carrying the normal service load, the max. Allowable conductor temperature is not exceeded	Not applicable. No cable is wound on drums.
	For cables of circular cross-sectional area installed on drums, the max. current-carrying capacity in free air should be derated according to table 7	Not applicable. No cable is wound on drums.
12.7	Collector wires, collector bars and slip-ring assemblies	-
12.7.1	Protection against direct contact	-
	Collector wires, collector bars and slip-ring assemblies shall be installed or enclosed by the application of one of the following protective measures: -by partial insulation of live parts -by enclosures or barriers of at least IP2X	Not applicable. No collector wires, collector bars or slip-ring assemblies has been used on these machines.
	Min. protector degree of horizontal top surface of barriers or enclosures that are readily accessible: IP4X	Not applicable.
	If the required degree of protection is not achieved, protection by placing live parts out of reach in combination with emergency switching off according to 9.2.5.4.3 shall be applied	Not applicable.
	Collector wires and collector bars shall be so placed	Not applicable.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	and/or protected as to: prevent contact prevent damage from a swinging load	
12.7.2	Protective conductor circuit	-
	Where collector wires, collector bars and slip-ring assemblies are installed as part of the protective bonding circuit, they shall not carry current in normal operation	Not applicable.
	The continuity of the protective conductor circuit using sliding contacts shall be ensured by taking appropriate measures	Not applicable.
12.7.3	Protective conductor current collectors	-
	Not interchangeable with the other current collectors	Not applicable.
	Such current collectors shall be of the sliding contact type	Not applicable.
12.7.4	Removable current collectors with a disconnect function	-
	Shall be so designed that the protective conductor circuit is interrupted only after the live conductors have been disconnected, and the continuity of the protective conductor circuit is re-established before any live conductor is reconnected	Not applicable.
12.7.5	Clearance in air	-
	Shall be suitable for at least a rated impulse voltage of an overvoltage category III in accordance with IEC 60664-1.	Not applicable.
12.7.6	Creepage distances	-
	Shall be suitable for operation in the intended environment.	Not applicable.
	The manufacturer's recommendations shall be followed regarding special measures to prevent a gradual reduction in the insulation values due to unfavorable ambient conditions	Not applicable.
12.7.7	Conductor system sectioning	-
	If collector wires or collector bars can be divided into isolated sections, suitable design measures shall be employed to prevent the energization of adjacent sections by the current collectors themselves	Not applicable.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
12.7.8	Construction and installation of collector wire, collector bar systems and slip-ring assemblies	Not applicable.
	Used for power circuits shall be grouped separately from those used for control circuit	Not applicable.
	Shall be capable of withstanding, without damage, the mechanical forces and thermal effects of short-circuit currents	Not applicable.
	Removable covers shall not be opened by one person without the aid of a tool	Not applicable.
	If collector bars are installed in a common metal enclosure, the individual sections of the enclosure shall be bonded together and earthed at several points depending upon their length	Not applicable.
	Metal covers of collector bar laid underground or underflow shall also be bonded together and earthed	Not applicable.
13	Wiring practices	-
13.1	Connections and routing	-
13.1.1	General requirements	-
	All connections shall be secured against accidental loosening	Pass. All connections can be secured against accidental loosening.
	The means of connection shall be suitable for the cross-sectional areas and neutral of the conductors being terminated	Pass. The means of connection is suitable.
	The connection of two or more conductors to one terminal is permitted (only when the terminal is designed for that purpose)	Pass. No terminal has been connected with three or more conductors.
	One protective bonding circuit conductor shall be connected to one terminal connecting point	Pass. One conductor connected to one terminal.
	Soldered connections shall only be permitted if terminals are suitable for soldering	Not applicable. No soldered connection has been taken.
	Terminals on terminal blocks shall be plainly identified to correspond with markings on the	Pass. All of them have been marked

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	diagrams	corresponding to markings on the diagrams.
	The installation of flexible conduits and cables shall be such that liquids shall drain away from the fittings	Pass. Liquids can drain away from the fittings.
	Means of retaining conductor strands shall be provided (Solder shall not be used for that purpose)	Pass. By appropriate terminals.
	Shielded conductors shall be so terminated s to prevent fraying of strands and to permit easy disconnection	Pass. Appropriate termination is taken.
	Identification tags shall be legible, permanent, and appropriate for the physical environment	Pass. They are legible, permanent, and appropriate for the physical environment.
	Terminal blocks shall be so mounted and wired, that the internal and external wiring does not cross over the terminals	Pass. No conductors cross over the terminals.
13.1.2	Conductor and cable runs	-
	Shall be urn from terminal to terminal without splices or joints(plug/socket are not considered to be joints for the purpose of this subclause.	Pass. All of them are run from terminal to terminal without splices or joints.
	If it is necessary to connect and disconnect cables assemblies, a sufficient extra length shall be provided	Pass.
	The terminations of cables shall be adequately supported to prevent mechanical stresses at the terminations of the conductors	Pass. Adequate support measure has been taken.
	The protective conductor shall be placed close to the associated live conductors in order to decrease the impedance of the loop.	Pass.
13.1.3	Conductors of different circuit	-
	Suitable arrangement for conductors of different circuits	Pass, Suitable arrangement is provided.
13.1.4	Connection between pick-up and pick-up converter of an inductive power supply system	-

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	inductive power supply shall be: – as short as practicable; – adequately protected against mechanical damage.	Pass. These requirements have been complied with.
13.2	Identification of conductors	-
13.2.1	General requirements	-
	Conductors shall be identifiable at each termination according to the technical documentation (see clause 17)	Pass. Make reference to clause 17.
	When numbers are used, they shall be Arabic; letters shall be Roman (either upper or lower case).	Pass. The numbers are Arabic.
13.2.2	Identification of the protective conductor	-
	Shall be really distinguishable by shape, location, marking or color	Pass. By marking and color.
	When identification is by color alone, the bicolor combination GREEN-AND YELLOW shall be used	Pass. By GREEN-AND-YELLOW.
	For the bicolor combination GREEN-AND YELLOW : one of the color covers at least 30% and not more than 70% of the surface of the conductor, the other color covering the remainder of the surface	Pass.
	Use of graphical symbol 	Pass. The earthing symbol has been used.
13.2.3	Identification of the neutral conductor	-
	The color shall be Light Blue	Not applicable. No neutral conductor is used.
	Requirements for bare conductors used as neutral conductors	Not applicable. No neutral conductor is used.
13.2.4	Identification by color	-
	Requirements for color-coding that used for identification of conductors (other than the protective conductor (see 13.2.2) and the neutral conductor.	Pass. By color-coding to identification of conductors.
13.3	Wiring inside enclosures	-
	conductors shall be supported where necessary to keep them in place	Pass. Appropriate support is provided.
	Non-Metallic ducts shall be permitted only when they	Pass.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	are made with a flame-retardant insulating material	Some non-metallic ducts are used with a flame-retardant insulating material.
	If that is not practicable and control devices are connected from the rear of the enclosure, access doors or swing out panels shall be provided.	Not applicable.
	Connections to devices mounted on doors or to other movable parts shall be made using flexible conductors according to 12.2 and 12.6.	Pass. Connections according to 12.2 and 12.6.
	The conductors shall be anchored to the fixed part and to the movable part independently of the electrical connection	Pass. Adequate anchored measures have been taken.
	Conductors and cables that do not run in ducts shall be adequately supported	Pass. All of them have been supported adequately.
	Terminal blocks or plug-socket combinations shall be used for control wiring that extends beyond the enclosure	Pass. This application has been taken.
	Power cables and cables of measuring circuits may be directly connected to the terminals of the devices for which the connections were intended.	Pass.
13.4	Wiring outside enclosures	-
13.4.1	General requirements	-
	Shall be ensured when cables or ducts are introduced into the enclosure the protection degree is not reduced.	Pass. The protection degree can be secured.
13.4.2	External ducts	-
	Shall be enclosed in suitable ducts as described in 13.5 except for suitably protected cables	Not applicable.
	Fittings used with ducts or multiconductor cable shall be suitable for the physical environment	Not applicable.
	Flexible conduit or flexible multiconductor cable shall be used where it is necessary to employ flexible connections to pendant push-button stations	Not applicable.
	The weight of the pendant stations shall be supported by means other than the flexible conduit or the	Not applicable.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	flexible multiconductor cable	
13.4.3	Connection to moving elements of the machine	-
	Connection to frequently moving parts shall be made using conductors according to 12.2 and 12.6.	Not applicable. No device is connected to moving elements of the machine.
	Flexible cable and flexible conduit shall be so installed as to avoid excess flexing and straining, particularly at the fittings	Not applicable.
	Cables subject to movement shall be supported in such a way that there is no mechanical strain on the connection points nor any sharp flexing	Not applicable.
	If the requirement mentioned above is achieved by using of a loop, it shall have sufficient length to provide for a bending radius of the cable of at least 10 times the diameter of the cable	Not applicable.
	Flexible cables of machines shall be protected to minimize the possibility of external damage	Not applicable.
	The cable sheath shall be resistant to the normal wear that can be expected from movement and to the effects of atmospheric contaminants	Not applicable.
	If cables subject to movement are close to moving parts, it shall have a space of at least 25 mm between the moving parts and the cables	Not applicable.
	Where the distance mentioned above is not practicable, fixed barriers shall be provided between the cables and the moving parts	Not applicable.
	The cable handling system shall be so designed that the lateral cable angles do not exceed 5°, avoiding torsion in the cable	Not applicable.
	Measures shall be taken to ensure that at least two turns of flexible cables always remain on a drum	Not applicable.
	Min. permitted bending radii for the forced guiding of flexible cables shall not be less than the values given in table 8	Not applicable.
	The strength section between section between two	Not applicable.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	bends in an S-shaped length or a bend into another plane shall be at least 20 times the diameter of the cable	
	Where flexible conduit is adjacent to moving parts, the construction and supporting means shall prevent damage to the flexible conduit under all conditions of operation	Not applicable.
	Flexible metallic conduit shall not be used for rapid or frequent movements	Not applicable.
13.4.4	Interconnection of devices on the machine	-
	The connections between those devices shall be made through terminals forming intermediate test points.	Pass. Through terminals.
	Such terminals shall be conveniently placed, adequately protected, and shown on the relevant diagrams	Pass. These requirements have been complied with.
13.4.5	Plug/socket combinations	-
	The requirements of the plug/socket combinations, when shall be of adequate size and shall have sufficient contact pressure and a wiping action to ensure electrical continuity	Not applicable. No plug/socket combinations are used.
	Clearances between contacts shall be adequate for the voltages used and shall be maintained during insertion and removal of the connectors	Not applicable. No plug/socket combinations are used.
	Prevent unintentional contact with live parts at any time	Not applicable. No plug/socket combinations are used.
	Protective bonding circuit connection shall be made before any live connections are made, and shall not be disconnected until all live connections in the plug are disconnected	Not applicable. No plug/socket combinations are used.
	Rated at more than 16 A or that remain connected during normal service shall be of a remaining type to prevent unintended disconnection	Not applicable. No plug/socket combinations are used.
	Rated at 63 A or above shall be of an interlocked type with a switch, so that connection and disconnection is possible only when the switch is in the OFF position	Not applicable. No plug/socket combinations are used.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	If more than one plug-socket combination is used in the same electrical equipment, they shall be clearly identifiable	Not applicable. No plug/socket combinations are used.
	It is recommended that mechanical coding be used to prevent incorrect insertion	Not applicable. No plug/socket combinations are used.
	According to IEC 60309-1 or of a type used for domestic application shall not be used for control circuits	Not applicable. No plug/socket combinations are used.
13.4.6	Dismantling for shipment	-
	Terminals shall be suitably enclosed and plug/socket combinations shall be protected from the physical environment during transportation and storage	Pass. All of them are enclosed suitably.
13.4.7	Additional conductors	-
	Spare conductors shall be connected to spare terminals or isolated to prevent contact with live parts	Pass. All spare conductors are connected to spare terminals or isolated to prevent contact with live parts.
13.5	Ducts, connection boxes and other boxes	-
13.5.1	General requirements	-
	Ducts shall provide a degree of protection suitable for the application (see IEC 60529). Min. protection degree for ducts: IP 33	Pass. IP 33.
	Appropriate protection for conductors insulation	Pass. Suitable protection is taken.
	Drain holes of 6 mm diameter are permitted	Pass.
	Ducts and cables trays shall be rigidly supported and positioned at a sufficient distance from moving parts	Pass. Suitable support and sufficient distance have been taken.
	In areas where human passage is required, the ducts and cable trays shall be mounted at least 2 m above the working surface	Not applicable. No this kind of area.
	Ducts shall be provided only for mechanical protection	Pass. Adequate mechanical protection is provided.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	Cable trays that are partially covered should not be considered to be ducts or cable trunking system, and the cables used shall be suitable for installation on cable trays	Not applicable. No cable tray is used.
13.5.2	Percentage fill of ducts	-
	The dimensions and arrangement of the ducts be such as to facilitate the insertion of the conductors and cables	Pass. This requirement has been complied with.
13.5.3	Rigid metal conduit and fittings	-
	Shall be of galvanized steel or of a corrosion-resistant material	Not applicable. No rigid metal conduit is used.
	Conduits shall be securely held in place and supported at each end	Not applicable. No rigid metal conduit is used.
	Fitting shall be threaded	Not applicable. No rigid metal conduit is used.
	Where threadless fittings are used, the conduit shall be securely fastened to the equipment	Not applicable. No rigid metal conduit is used.
	The conduit shall not be damage and the internal diameter of the conduit shall not e effectively reduced when it is bent	Not applicable. No rigid metal conduit is used.
13.5.4	Flexible metal conduit and fittings	-
	Flexible metal trbing and suitable for the expected physical environment	Not applicable. No flexible metal conduit is used.
13.5.5	Flexible non-metal conduit and fittings	-
	Shall be resistant to kinking and suitable for the expected physical environment	Pass. It resistance to kinking and suitable for the expected physical environment.
	The conduit shall be suitable for use in the expected physical environment.	Pass. This requirement has been complied with.
	Fittings shall be compatible with the conduit and appropriate for the application.	Pass. This requirement has been complied with.
13.5.6	Cable trunking systems	-

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	Shall be rigidly supported and clear of all moving or contaminating portions of the machine	Not applicable. No cable trunking system is used.
	Covers shall be shaped to overlap the sides; gasket shall be permitted	Not applicable. No cable trunking system is used.
	Covers shall be attached to cable trunking systems by hinges or chain and held closed by means of captive screws or other suitable fasteners	Not applicable. No cable trunking system is used.
	On horizontal cable trunking systems, the cover shall not be on the bottom	Not applicable. No cable trunking system is used.
	Where the cable trunking system is furnished in sections, the joints between sections shall fit tightly but need not be gasketed	Not applicable. No cable trunking system is used.
	The only openings permitted shall be those required for wiring or for drainage	Not applicable. No cable trunking system is used.
	Cable trunking systems shall not have opened but unused knockouts	Not applicable. No cable trunking system is used.
13.5.7	Machines compartments and cable trunking systems	-
	Are isolated from coolant or oil reservoirs and are entirely enclosed	Not applicable. No this kind of situation.
	Conductors run in enclosed compartment and cable trunking systems shall be so secured and arranged that they are not subject to damage	Not applicable. No this kind of situation.
13.5.8	Connection boxes and other boxes	-
	Shall be readily accessible for maintenance	Pass. They are readily accessible for maintenance.
	Shall provide protection against the ingress of solid bodies and liquids	Pass. Adequate protection is provided.
	Shall not have opened but unused knockouts nor any other opening and shall be so constructed as to	Pass. These requirements have been

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	exclude materials such as dust, flying, oil, and coolant	complied with.
13.5.9	Motor connection boxes	-
	Shall enclose only connections to the motor and motor-mounted devices	Pass. They enclose only connections to the motor and motor-mounted devices.
14	Electric motors and associated equipment	-
14.1	General requirements	-
	Electric motor should conform to the requirements of IEC 60034 series.	Pass. The electric motor is in conformity with the requirements of IEC 60034-1.
	Motor control equipment shall be located and mounted according to clause 11	Pass. According to clause 11.
14.2	Motor enclosures	-
	Protection degree shall be at least IP 23	Pass. At least IP23.
14.3	Motor dimensions	-
	As far as is practicable, the dimensions of the motors shall comply with IEC 60072-1 and IEC 60072-2	Pass. It is in compliance with IEC 60072-1 and IEC 60072-2.
14.4	Motor mounting and compartments	-
	Each motor and its associated couplings, belts and pulleys, or chains, shall be so mounted that they are adequately protected and are easily for inspection	Pass. They have adequate protection and are easily for inspection.
	Shall be such that all motor hold-down means can be removed and all terminal boxes are accessible	Pass. This requirement has been complied with.
	The proper cooling shall be ensured and the temperature rise remains within the limits of the insulation class	Pass. This requirement has been complied with.
	Motor compartment should be clean and dry, and shall be ventilated directly to the exterior of the machine	Not applicable. No motor compartment is found.
	The vents shall be such that ingress of swarf, dust, or water spray is at an acceptable level	Pass. Adequate vents are provided.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	There shall be no opening between the motor compartment and any other compartment that does not meet the motor compartment requirements	Pass. No this kind of opening.
	If a conduit or pipe is run into the motor compartment from another compartment not meet the motor compartment requirements, any clearance around the conduit or pipe shall be sealed	Not applicable. No this kind of situation.
14.5	Criteria for motor selection	-
	Shall be selected according to the anticipated service and physical environment conditions	Pass. They are selected according to the anticipated service and physical environment conditions.
14.6	Protective devices for mechanical brakes	-
	Operation of the overload and over current protective devices for mechanical brake actuators shall initiate the simultaneous de-energization (release) of the associated machine actuators	Not applicable. No this kind of device.
15	Accessories and lightning	-
15.1	Accessories	-
	Socket-outlets for accessory equipment shall comply:	-
	Should conform to IEC 60309-1 (if this is not possible, they should be clearly marked with the voltage and current ratings)	Pass. Marked with the voltage and current ratings.
	The continuity of the protective bonding circuit to the socket-outlet shall be ensured	Pass. It can be ensured.
	All unearthed conductors: Over current or overload protection according to 7.2 and 7.3 separately from the protection of other circuits	Pass. Over current protection is provided.
	If the power supply to the socket outlet is not disconnected by the supply disconnecting device, the clause 5.3.5 shall apply	Pass. Please see the related clause.
15.2	Local lighting of the machine and equipment	-
15.2.1	General	-
	Connections to the protective bonding circuit according to 8.2.2	Pass. Please see the related clause.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	The ON-OFF switch shall not be incorporated in the lamp holder or in the flexible connecting cords	Pass. This requirement is complied with.
	Stroboscopic effects from lights shall be avoided	Pass. Stroboscopic effects from lights has been avoided
	Where fixed lighting is provided in an enclosure, electromagnetic compatibility should be taken into account using the principles outlined in 4.4.2.	Not applicable.
15.2.2	Supply	-
	The nominal voltage of the local lighting circuit shall not exceed 250 V	Pass. This requirement is complied with.
	Lighting circuits shall be supplied from one of the sources specified in this clause	Pass. Please see the related clause.
15.2.3	Protection	-
	Local lighting shall be protected according to 7.2.6	Pass. Please see the related clause.
15.2.4	Fittings	-
	Adjustable lighting fittings shall be suitable for the physical environment	Pass.
	The lamp holders shall be: According to the relevant IEC publication; Constructed with an insulating material protection the lamp cap so as to prevent unintended contact	Pass. This requirement has been taken into account during design.
	Reflectors shall be supported by a bracket and not by the lamp holder	Pass. Reflectors are supported by a bracket.
16	Marking, warning signs and reference designations	-
16.1	General	-
	Warning signs, nameplates, markings, and identification plates shall be of sufficient durability to withstand the physical environment involved.	Pass. They can withstand the physical environment involved.
16.2	Warning signs	-
16.2.1	Electric shock hazard	-

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	Enclosures shall be marked with the warning sign 	Pass. This warning sign has been used.
	The warning sign shall be plainly visible on the enclosure door or cover	Pass. It is plainly visible on the enclosure door.
	The warning sign may be omitted (see also 6.2.2 b)) for: – an enclosure equipped with a supply disconnecting device; – an operator-machine interface or control station; – a single device with its own enclosure (for example positions	Pass. These requirements have been complied with.
16.2.2	Hot surfaces hazard	-
	Hazardous surface temperatures of the electrical equipment, the graphical symbol IEC 60417-5041 (DB:2002-10) shall be used. 	Not applicable. No this kind of risk in this machine.
16.3	Functional identification	-
	Control devices, visual indicators and displays, used in man-machine interface shall be clearly and durably marked with regard to their functions either on or adjacent to the item	Pass. Appropriate markings have been provided for these devices.
	Preference should be given to the use of standard symbols give in IEC 60417-DB2002 and ISO 7000	Pass. These relevant requirements appropriate for this machine have been used.
16.4	Marking of control equipment	-
	Equipment shall be legibly and durably marked in a way that is plainly visible after the equipment is installed	Pass. They have been marked legibly and durably.
	A nameplate giving the relevant information specified in this clause shall be attached to the enclosure	Pass. A nameplate is used.
	The full-load current shown on the nameplate shall be sufficient	Not applicable. No plug/socket combinations.
	Where only a single motor controller is used, that	Not applicable.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	information may instead be provided on the machine nameplate where it is plainly visible.	
16.5	Reference designations	-
	All enclosures, assemblies, control devices, and components shall be plainly identified with the same reference designations as shown in the technical documentation	Pass. Make reference to the instruction manual.
17	Technical documentation	-
17.1	General	-
	The information necessary for installation, operation, and maintenance of the electrical equipment of a machine shall be supplied in the form of drawings, diagrams, charts, tables and instructions	Pass. All the information has been provided by many forms.
	The information shall be in an agreed language	Pass. In English.
17.2	Information to be provided	-
	The information provided with the electrical equipment shall include the requirements specified in this clause	Pass. Please see the related clause.
17.3	Requirements applicable to all documentation	-
	Unless otherwise agreed between manufacturer and user: – the documentation shall be in accordance with relevant parts of IEC 61082; – reference designations shall be in accordance with relevant parts of IEC 61346; – Instructions/manuals shall be in accordance with IEC 62079. – parts lists where provided shall be in accordance with IEC 62027, class B.	Pass. Please see the related clause.
	the supplier shall select one of the following methods: – where the documentation consists of a small number of documents (for example less than 5) each of the documents shall carry as a cross-reference the document numbers of all other documents belonging to the electrical equipment; or – for single level main documents only (see IEC 62023),	Pass. These requirements have been complied with.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	all documents shall be listed with document numbers and titles in a drawing or document list; or – all documents of a certain level (see IEC 62023) of the document structure shall be listed, with document numbers and titles, in a parts list belonging to the same level.	
17.4	Installation documents	-
	The installation documents shall give all information necessary for the preliminary work of setting up the machine (including commissioning).	Pass. All necessary information for the preliminary work of setting up the machine has been given.
	The data necessary for choosing the type, characteristics, rated currents, and setting of the over current protective device(s) for the supply conductors to the electrical equipment of the machine shall be stated (see 7.2.2).	Pass. The data has been stated.
	The size, purpose, and location of any ducts in the foundation shall be detailed (see Annex B).	Pass. These requirements have been complied with.
	The associated equipment shall be detailed (see Annex B).	Pass. The associated equipment has been detailed.
	Where necessary, the diagram shall indicate where space is required for the removal or servicing of the electrical equipment.	Pass. This requirement has been complied with.
	In addition, where it is appropriate, an interconnection diagram or table shall be provided.	Not applicable.
	That diagram or table shall give full information about all external connections.	Pass.
	Electrical equipment is intended to be operated from more than one source of electrical supply, the interconnection diagram or table shall indicate the modifications or interconnections required for the use of each supply	Not applicable. There is only one source of electrical supply.
17.5	Overview diagrams and function diagrams	-

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	Use and requirements for function diagrams.	Pass. Function diagrams are provided.
17.6	Circuit diagrams	-
	Use and requirements for circuit diagrams	Pass. Circuit diagrams are provided.
17.7	Operating manual	-
	Use and requirements for operating manual	Pass. Operating manual is provided.
17.8	Maintenance manual	-
	Use and requirements for maintenance manual	Pass. Maintenance manual is provided.
17.9	Parts list	-
	Use and requirements for parts list	Pass. Parts list is provided.
18	Verification	-
18.1	General	-
	When these tests are performed, it is recommended that they follow the sequence listed	Pass. All tests have been carried out according to the following sequence
	When the electrical equipment is modified, the requirements stated in 18.7 shall apply	Pass.
18.2	Verification of conditions for protection by automatic disconnection of supply	-
18.2.1	General	-
	The conditions for automatic disconnection of supply (see 6.3.3) shall be verified by tests.	Not applicable.
18.2.2	Test methods in TN-systems	-
	Test 1 verifies the continuity of the protective bonding circuit.	Pass.
	Test 2 verifies the conditions for protection by automatic disconnection of the supply	Not applicable.
18.2.3	Application of the test methods for TN-systems	-
	Test 1 of 18.2.2 shall be carried out on each protective	Pass.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
	bonding circuit of a machine.	Test 1 of 18.2.2 has been carried out on each protective bonding circuit of this machine.
	When Test 2 of 18.2.2 is carried out by measurement, it shall always be preceded by Test 1.	Not applicable.
	The tests that are necessary for machines of different status are specified in Table 9. Table 10 can be used to enable determination of the machine status	Pass. See the test report in detail.
18.3	Insulation resistance tests	-
	The insulation resistance measured at 500 V d.c. between the power circuit conductors and the protective bonding circuit shall be not less than 1 M Ω . The test may be made on individual sections of the complete electrical installation.	Pass. See the test report in detail.
	If the electrical equipment of the machine contains surge protection devices which are likely to operate during the test, it is permitted to either:	-
18.4	Voltage tests	-
	When voltage tests are performed, test equipment in accordance with IEC 61180-2 should be used.	Pass. Please see the test report in detail.
	The test voltage shall be at a nominal frequency of 50 Hz or 60 Hz.	Pass.
	The maximum test voltage shall have a value of twice the rated supply voltage of the equipment or 1 000 V, whichever is the greater.	Pass.
	The maximum test voltage shall be applied between the power circuit conductors and the protective bonding circuit for a period of approximately 1 s. The requirements are satisfied if no disruptive discharge occurs.	Pass.
	Components and devices that are not rated to withstand the test voltage shall be disconnected during testing.	Pass.
	Components and devices that have been voltage tested in accordance with their product standards may be disconnected during testing.	Pass.

Clause	Requirements EN 60204-1 test report	Compliance Pass/Fail/Not applicable
18.5	Protection against residual voltages	-
	Where appropriate, tests shall be performed to ensure compliance with 6.2.4.	Not applicable.
18.6	Functional tests	-
	The functions of electrical equipment shall be tested.	Pass. All functions equipped with this machine have been tested.
	The function of circuits for electrical safety (for example earth fault detection) shall be tested.	Pass. The function of circuits for electrical safety has been tested.
18.7	Retesting	-
	Portion shall be re-verified and retested, as appropriate (see 18.1).	Not applicable.
	Particular attention should be given to the possible adverse effects that retesting can have on the equipment	Not applicable.

=====END=====