QA Testing Certification Co., Ltd

CE TEST REPORT

Test Record No.: QA2020031202MD

Sample Name: FLOOR JACK

Model: QJD60A(1T), QJD60A(2T), QJD60A-1(1T), QJD60A-1(1.5T), QJD60A-1(2T), QJD60A-2(1T), QJD60A-2(1.5T)QJD60A-2(2T), QJD61A-1(2T), QJD61A-1(2.5T), QJD61A-2(2T), JD61A-2(2.5T), QJD61B-1ONE(2T), QJD61B-1TWO(2T), QJD61B-2ONE(2T), QJD61B-2TWO(2T), QJD61-3A-1(2.5T), QJD61-3A-2(2.5T), QJD61-5A-1(2.5T), QJD61-5A-2(2.5T), QJD62A(3T), QJD63A(3T), QJD63A-with pedal(3T), QJD63BA(3T), QJD64A(3T), QJD64A(4T), QJD64A-with pedal(3T), QJD64A-withpedal(4T), QJD64A-1(3T), QJD64A-1(4T), QJD64A-3(3T), QJD64A-3(4T), QJD64A-5(3T), QJD64A-5(4T), QJD64A-6(3T), QJD64A-6(3.5T), QJD64A-6(4T), QJD64A-7(3T), QJD64A-8(3T), QJD73A(3T), QJD73A(3.5T), QJD73A(4T)

Date of tests: 2020-03-12

Manufacturer: JIAXING JINRISHENG TOOLS CO.,LTD

TEST REPORT EN ISO 12100: 2010Safety of machinery — General principles for design — Risk assessment and risk reduction EN1494: 2000+A1: 2008 Mobile or movable jacks and associated lifting equipment	
Testing Laboratory Name	QA Testing Certification Co., LTD
Applicant's Name **Address** **Manufacturers** **Address**	JIAXING JINRISHENG TOOLS CO.,LTD NO.186 JIULONG ROAD CAOQIAO STREET PINGHU CHINA(314200) JIAXING JINRISHENG TOOLS CO.,LTD NO.186 JIULONG ROAD CAOQIAO STREET PINGHU CHINA(314200)
Test specification **Standard……:** **Test procedure……...:** **Council directives……..:** **Non-standard test method……..:**	 EN ISO12100:2010; EN 1494:2000+A1:2008 CE 2006/42/EC N/A
Test item description……: **Model and/or type reference……..:**	FLOOR JACK QJD60A(1T), QJD60A(2T), QJD60A-1(1T), QJD60A-1(1.5T), QJD60A-1(2T), QJD60A-2(1T), QJD60A-2(1.5T)QJD60A-2(2T), QJD61A-1(2T), QJD61A-1(2.5T), QJD61A-2(2T), JD61A-2(2.5T)

	QJD61B-1ONE(2T),QJD61B-1TWO(2T),QJD61B-2ONE(2T),QJD61B-2TWO(2T),QJD61-3A-1(2.5T),QJD61-3A-2(2.5T),QJD61-5A-1(2.5T),QJD61-5A-2(2.5T),QJD62A(3T),QJD63A(3T),QJD63A-with pedal(3T),QJD63BA(3T),QJD64A(3T),QJD64A(4T), QJD64A-with pedal(3T),QJD64A-withp edal(4T),QJD64A-1(3T),QJD64A-1(4T),QJD64A-3(3T),QJD64A-3(4T),QJD64A-5(3T),QJD64A-5(4T),QJD64A-6(3T),QJD64A-6(3.5T),QJD64A-6(4T),QJD64A-7(3T),QJD64A-8(3T),QJD73A(3T), QJD73A(3.5T), QJD73A(4T)
Test By: Signature  Name:Zhangzhigang Date: 2020-03-12	Review By: Signature  Name: Qingang Date: 2020-03-12

Test item particulars:	
Equipment mobility……..	Moveable
Tested for IT power systems…….	No direct mains connection
IT testing, phase-phase voltage(V)……..	No direct mains connection

Possible test case verdicts：	
-Test case does not apply to the test object.	N(A)
-Test case does meet the requirement.	P(ass)
-Test case does not meet the requirement.	F(all)

General Remarks:

"(see remark4) refers to a remark appended to the report.

"(see appended table/" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator

The test results presented in this report relate only to the object tested.

This report shall not be reproduced except in full without the written approval of the testing laboratory

Brief description of the test sample：

The FLOOR JAC can be widely used.

Test case verdicts	
Test case does not apply to the test object……..:	N(A)
Test item does m meet the requirement……..…..:	P(ass)
Test item does not meet the requirement…….……:	F(all)

Testing	
Date of receipt of test item……	2020 -03-01
Date(s) of performance of test……	2020 -03-01-2020-03-12

General remarks

This report shall not be reproduced except in full without the written approval of the testing laboratory
The test results presented in this report relate only to the item(s) tested.
"（see remark＃）"refers to a remark appended to the report.
"（see Annex＃）"refers to an annex appended to the report.
Throughout this report a comma is used as the decimal separato

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (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. All the machines are fitted for the function. Enough protection is provided.
	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 and other devices 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. Enough warnings are provided in the appropriate spot.
c)	When designing and constructing machinery and when drafting the	Pass.

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	instructions, the manufacturer or his authorised representative must envisage not only the intended use of the machinery but also any reasonably foreseeable misuse thereof.	
	The machinery must be designed and constructed in such a way as to prevent abnormal use if such use would engender a risk. Where appropriate, the instructions must draw the user's attention to ways – which experience has shown might occur – in which the machinery should not be used.	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. Ergonomic principle has been taken into account during the design of these machines.
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 these machines.
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.
	In particular, where fluids are used, machinery must be designed and constructed to prevent risks due to filling, use, recovery or draining.	Pass.
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.	Not applicable
	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.	Not applicable
	Internal parts requiring frequent inspection, and adjustment and maintenance areas, must be provided with appropriate lighting	Pass

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
1.1.5	Design of machinery to facilitate its handling	-
	Machinery or each component part thereof must:	-
	- be capable of being handled and transported safely,	Pass.
	- be packaged or designed so that it can be stored safely and without damage.	Pass. These requirements have been complied with.
	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.
	- 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	Not applicable.
	- be equipped for picking up and moving in complete safety	Not applicable.
	Special arrangement must be made for the handling of tools and/or machinery parts, even if lightweight, which could be dangerous	Not applicable.
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
	– providing enough space for movements of the parts of the operator's body,	Pass
	– avoiding a machine-determined work rate,	Pass

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	– avoiding monitoring that requires lengthy concentration,	Pass
	– 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. No this kind of hazard in the machine
	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 fulfil 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 These requirements have been complied with
1. 1. 8	Seating	-
	Where appropriate and where the working conditions so perm 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, the seat and its distance from the control devices must be capable of being adapted to the operator.	Not applicable
	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	Not applicable

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	floor beneath the feet of the operator, footrests covered with a slip-resistant material must be provided.	
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. Any error in logic doesn't lead to dangerous situations.
	-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, where such change may lead to hazardous situations,	Pass These requirements have been complied with

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	– 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 These requirements have been complied with
	– 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
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. All the positioned for safe operation of these machines have been designed according to these requirements.

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	- designed in such a way that the movement of the control device is consistent with its effect,	Not applicable.
	- located outside the danger zones, except where necessary for certain control devices such as an emergency stop or a teach pendant,	Pass. 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-toone 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. Ergonomic principles were taken into account during 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. The indicators have been

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
		provided.
	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 must be designed and constructed in such a way that starting is prevented while someone is in the danger zone.	Pass. The danger zones are visible for the operator in the main control position.
	If neither of these possibilities is applicable, before the machinery starts,	Pass. Acoustic and visual warning signal are provided.
	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 These requirements have been complied with by appropriate design
	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

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
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. Reset is necessary before restarting.
	- 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.
	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	Not applicable.
	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 by appropriate design.
1.2.4	Stopping	-

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
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. A normal stop control has been provided.
	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. A normal stop control has been provided.
	The machinery's stop control must have priority over the start controls	Pass. It is priority over the start control.
	Once the machinery or its hazardous functions have stopped, the energy supply to the actuators concerned must be cut off.	Pass. All the stops of these machines belong to the category 0, or category 1 stops.
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.
	The following exceptions apply:	-
	- machinery in which an emergency stop device would not lessen the risk, either because it would not reduce the stopping time or because it would not	Pass.

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	enable the special measures required to deal with the risk to b taken,	
	– portable hand-held and/ handguided machinery.	Pass
	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. The emergency stop devices have been designed according to this requirement.
	- where necessary, trigger or permit the triggering of certain safeguard movements	Not applicable. No this kind of conditions.
	Once active operation of the emergency stop device has ceased following a stop command, that command must b 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	Pass.

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	substitute for them.	This requirement has been complied with.
1.2.4.4	Complex installations	-
	n the case of machinery or parts of machinery designed to work together, the machinery must be designed and constructed in such a way that the stop controls, including the emergency stop devices, can stop not only the machinery itself but also all related equipment, if its continued operation may be dangerous.	Not applicable
1.2.5	Selection of control or operating modes	-
	The control or operating mode selected must override all other control or operating modes,	Not applicable
	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.	Not applicable
	Each position of the selector must be clearly identifiable and must correspond to a single operating or control mode.	Not applicable.
	The selector may be replaced by another selection method which restricts the use of certain functions of the machinery or certain categories of operator	Not applicable.
	If, for certain operations, the machinery must be able to operate with a guard displaced or removed and/or a protective device disabled,	Not applicable.
	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.

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/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. If these four conditions	Not applicable.
	If these four conditions cannot be fulfilled simultaneously, the control or operating mode selector must activate other protective measures designed and constructed to ensure a safe intervention zone.	Not applicable.
	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 any dangerous situation has been found.
	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

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
		priority over all other devices
	- no moving part of the machinery or piece held by the machinery must fall or be ejected	Pass. No this kind of risk in the machine
	- 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.
	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 risk in the machine

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	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.	Not applicable
	Where the material to be processed is fed to the tool automatically, the following conditions must be fulfilled to avoid risks to persons:	Pass
	- 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.	Not applicable

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
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 risk 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
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.
	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	Pass. All necessary steps have been taken, and the related

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	appropriate, be provided to enable the equipment to be safely unblocked.	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. It is in accordance with the risk assessment.
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
	— interlocking movable guards as referred to in section 1.4.2.2.	Pass
	Interlocking movable guards should be used where frequent access is envisaged.	Pass
1.3.8.2 .	Moving parts involved in the process	-
	Guards or protective devices designed to protect persons 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 See the related clauses

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	– interlocking movable guards as referred to in section 1.4.2.2, or	Pass See the related clauses.
	– protective devices as referred to in section 1.4.3, or	Pass See the related clauses.
	– a combination of the above.	Pass See the related clauses
	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	-

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	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. All the guards can't be bypassed or rendered non-operational by design.
	- be located at an adequate distance from the danger zone	Pass. All the guards were complied with the safety distances.
	- cause minimum obstruction to the view id the production process	Pass. Transparent materials are used to make guards.
	– 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
1.4.2	Special requirements for guards	-

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
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. They all can be opened only with tools.
	Where possible, guards must be incapable to remain in place without their fixings	Not applicable.
1.4.4.2	Interlocking movable guards Interlocking movable guards must:	-
	– as far as possible remain attached to the machinery when open,	Not applicable
	-– 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	Not appicable
	Interlocking movable guards must be associated with an interlocking device that:	Not applicable.
	– prevents the start of hazardous machinery functions until they are closed, and	Not applicable.
	– gives a stop command whenever they are no longer closed.	Not applicable.
	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:	Not applicable.
	– prevents the start of hazardous machinery functions until the guard is closed and locked, and	Not applicable.

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	-– keeps the guard closed and locked until the risk of injury from the hazardous machinery functions has ceased.	Not applicable.
	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.	Not applicable
1.4.2.3	Adjustable guards restricting access	-
	Adjustable guards restricting access to those areas of the moving parts strictly necessary for the work must:	Not applicable. No this kind of guard has been used.
	- 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 protection 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 operator's reach,	Pass. 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.

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
1.5	RISKS DUE TO OTHER HAZARDS	-
1.5.1.	Electricity supply	-
	Where machinery has an electricity supply it must be designe constructed and equipped so that all hazards of an electrical nature are or can be prevented	Not applicable.
	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.	Not applicable.
1.5.2	Static electricity	-
	Machinery must be so designed and constructed as to prevent limit the build-up of potentially dangerous electrostatic chang and/or be fitted with a discharging system	Not applicable.
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 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.	Pass. These requirements have been taken into account during design.
	Where necessary, the instructions must give further information on these risks.	Pass. The related information has been provided within the

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
		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 al be taken to avoid or protect against the risk of hot or very cold material being ejected.	Not applicable
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, with the provisions of the specific Community Directives.	Not applicable
1.5.8	Noise	-
	Machinery must be designed and constructed in such a way that	Pass.

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	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.	Not applicable
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.	Not applicable
	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.	Not applicable
	Any functional non-ionising radiation emissions during setting, operation and cleaning must be limited to levels that do not have adverse effects on persons.	Not applicable
1.5.11	External radiation	-
	Machinery must be designed and constructed in such a way that external radiation does not interfere with its operation.	Not applicable
1.5.12	Laser equipment	-

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	Where laser equipment is used, the following provisions shou be taken into account;	Not applicable. No laser equipment has been used.
	– laser equipment on machinery must be designed and constructed in such a way as to prevent any accidental radiation,	Not applicable.
	– 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,	Not applicable.
	– 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.	Pass No this kind of situation
	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.	Not applicable

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
1.5.15	Risk of slipping, tripping or falling	-
	Parts of the machinery where persons are liable to move about or stand must be designed and constructed in such a way as to prevent persons slipping, tripping or falling on or off these parts.	Not applicable
	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
1.5.1	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.	Not applicable
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.

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	Automated machinery components which have to be changed frequently	Pass. Some adequate provisions have been taken.
	must be capable of being removed and replaced easily and safely. Access to the components must enable these tasks to be carried out with the necessary technical means in accordance with a specified operating method.	Pass. The related parts can be removed and replaced easily and in safety.
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.	Not applicable
	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	Pass.

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	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.	The isolator can be locked in the off position.
1.6.4	Operator intervention	-
	Machinery must be so designed, constructed and equipped tha the need for operator intervention is limited	Pass. Appropriate measures haven been taken into account during design to avoid and limit the operator intervention.
	If operator intervention can't be avoided, it must be possible t carry it out easily and in safety	Not applicable. No this kind of situation.
1.6.5	Cleaning of internal parts	-
	The machinery must be designed and constructed in such a wa 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	Pass. The information is identified clearly and can be easily under understood.

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	languages understood by the operators. [Compare with 1.7.2 of the old directive]	
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
	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
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
	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
	The requirements of the specific Community Directives concerning colours and safety signals must be complied with.	Pass
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.	Pass. The warning devices comply with ergonomic principles.
1.7.3	Marking of machinery	-
	All machinery must be marked visibly, legibly and indelibly with the following minimum particulars:	-

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	- – 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 typ	Pass. Serial number has been marked in the nameplate.
	– serial number, if any,	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.	

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	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. The related information has been provided within the instruction manual.
	By way of exception, the maintenance instructions intended for use by specialised personnel mandated by the manufacturer or his authorised representative may be supplied in only one Community language which the specialised personnel understand. [Compare with old 1.7.4 b]	Pass. It was provided within the instruction manual
	The instructions must be drafted in accordance with the principles set out below.	Pass. It can be occupied by operators easily.
1.7.4.1	. General principles for the drafting of instructions	Pass. It was provided within the instruction manual.
	(a) The instructions must be drafted in one or more official Community languages. The words 'Original instructions' must appear on the language version(s) verified by the manufacturer or his authorised representative.	Pass. It was provided within the instruction manual.

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	(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. All related information has been provided within the instruction manual.
	(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. The information about installation has been provided within the instruction manual.
1.7.4.2	. 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 authorised representative;	Pass.
	(b) the designation of the machinery as marked on the machinery itself, except for the serial number (see section 1.7.3);	Pass.
	(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.

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
		The warning information about this condition has been provided within the instruction manual.
	(e) the drawings, diagrams, descriptions and explanations necessary for the use, maintenance and repair of the machinery and for checking its correct functioning;	Pass. Chinese and 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. The translation is done by the manufacture.
	(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.
	(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

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
		been provided within the technical documentation.
	(l) information about the residual risks that remain despite the inherent safe design measures, safeguarding and complementary protective measures adopted;	Not applicable.
	(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. Appropriate standards are applied to determine the sound level.
	(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. All related information has been provided within the

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
		technical documentation.
	(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 workstations, where this exceeds 70 dB(A); where this level does not exceed 70 dB(A), this fact must be indicated,	Pass . This machine is not intended to be used in a potentially explosive atmosphere.
	– the peak C-weighted instantaneous sound pressure value at workstations, where this exceeds 63 Pa (130 dB in relation to 20 μPa),	Not applicable.
	– the A-weighted sound power level emitted by the machinery, where the A-weighted emission sound pressure level at workstations exceeds 80 dB(A).	Not applicable.
	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

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
		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 l 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 acces platform. The position and value of the maximum sound pressure must be indicated.	Pass. All these requirements have been taken into account.
	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 t 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
1.7.4.3	. 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 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 mus satisfy the conditions set down in the relevant Directives. The machinery	Not applicable

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/Not applicable)
	must be designed and constructed in such a way that these materials can be cleaned before each use. Where this is 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,	Not applicable
	– be designed and constructed in such a way as to reduce the projections, edges and recesses of assemblies to a minimum,	Not applicable
	– be easily cleaned and disinfected, where necessary after removing easily dismantled parts; the inside surfaces must ha curves with a radius sufficient to allow thorough cleaning;	Not applicable.
	(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);	Not applicable
	(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;	Not applicable
	(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	Not applicable
2.1.2.	Instructions	-
	The instructions for foodstuffs machinery and machinery for use with cosmetics or pharmaceutical products must indicate 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.	Not applicable
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.

Items	Clause Annex Ⅰ in Directive 2006/42/EC Machinery	Compliance with Annex Ⅰ in Directive 2006/42/EC Machinery (Pass/Fail/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	-

Clause	EN ISO 12100：2010 Requirements	Compliance (Pass/Fail/Not applicable)
1	Scope	-
2	Normative references	-
3	Terms and definitions	-
4	Hazards to be taken into account when designing machinery	-
4.1	General	-
	The purpose of this clause is to provide a description of basic hazards with a view to assisting the designer in identifying the relevant and significant hazards which the machine under consideration can generate and the hazards associated with the environment in which the machine is intended to be used.(see also 5.3)	Pass. The risk assessment report has been provided in the TCF to carry out the hazards analysis.
4.2	Mechanical hazard	-
4.2.1	Mechanical hazards associated with a machine, machine parts or surfaces, tools , work pieces , loads, or projected solid or fluid materials can result in :	Pass. The possible risks in this machine have been safeguarded

Clause	EN ISO 12100：2010 Requirements	Compliance (Pass/Fail/Not applicable)
		by appropriate measures.
	- Crushing; - Shearing; - Cutting or severing; - Entanglement; - Drawing-in or trapping; - Impact; - Stabbing or puncture; - Friction or abrasion; - High pressure fluid injection (ejection hazard);	Pass. Please see risk assessment report.
4.2.2	The mechanical hazards which can be generated by a machine, machine parts (including work material holding mechanisms), workpieces or loads are conditioned, among other factors, by :	-
	- shape(cutting elements, sharp edges, angular parts, even if they are motionless);	Pass All the hazardous parts have been treated appropriately.
	- relative location, which can create crushing, shearing, entanglement zones when elements are moving;	Pass Guards are provided.
	- stability against overturning (considering kinetic energy);	Pass.
	- mass and stability (potential energy of elements which can move under the effect of gravity);	Pass. No this kind of hazard in this machine.
	- acceleration/deceleration;	Pass. No this kind of hazard in this machine.
	- inadequate mechanical strength, which can generate hazardous breakages or bursts;	Pass. No this kind of hazard in this machine.

Clause	EN ISO 12100：2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- potential energy of elastic elements (springs), or of liquids or gases under pressure or vacuum;	Pass. No this kind of hazard in this machine.
	- working environment.	Pass
4.3	Electrical hazard	-
	This hazard can cause injury or death from electric shock, or burn; these can be caused by :	-
	- contact of persons with: - live parts, i.e. conductors or conductive parts intended to be energized in normal operation (direct contact); - parts which have become live under fault conditions, especially as a result of an insulation failure(indirect contact); - approach of persons to live parts, especially in the range of high voltage; - insulation not suitable for reasonably foreseeable conditions of use; - electrostatic phenomena such as contact of persons with charged parts - thermal radiation; - phenomena such as projection of molten particles or chemical effects from short-circuits or overloads. It can also cause falls of persons (or of objects dropped by persons) as a result of the surprise caused by electric shock.	Pass. Please see risk assessment report
4.4	Thermal hazard	-
	Thermal hazard can result in:	-
	- burns and scalds from contact with objects or materials with an extreme temperature, flames or explosions and radiation from heat sources;	Pass. Please see risk assessment report

Clause	EN ISO 12100：2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- health-damaging effects generated by hot or cold work environment;	
4.5	Hazard generated by noise	-
	Noise can result in :	-
	- permanent hearing loss;	Pass. No this kind of hazard in this machine.
	- tinnitus;	Pass. No this kind of hazard in this machine.
	- tiredness, stress;	Pass. No this kind of hazard in this machine.
	- other effects such as loss of balance, loss of awareness;	Pass. No this kind of hazard in this machine.
	- impairment of speech communication or of the perception of acoustic signals.	Pass. The maximum noise value is 70dB
4.6	Hazards generated by vibration	-
	Vibration can be transmitted to the whole body (use of mobile equipment) and particularly to hands and arms (use of hand-held and hand-guided machines). The most severe vibration (or less severe vibration over a long time) may generate serious disorders (low-back morbidity and trauma of the spine), severe discomfort resulting from whole-body vibration and vascular disorders, e.g. white-finger disease,	Pass. No this kind of hazard in this machine.

Clause	EN ISO 12100：2010 Requirements	Compliance (Pass/Fail/Not applicable)
	neurological, osteo-articular disorders, resulting from hand-arm vibration.	
4.7	Hazards generated by radiation	-
	These hazards, which can have immediate effects (e.g. burns) or long-term effects (e.g. genetic mutations), are produced by a variety of sources and can be generated by non-ionizing or ionizing radiation:	-
	- electromagnetic fields(e.g. in the low frequency, radio frequency, micro-wave ranges); - infra-red light, visible light and ultra-violet light; - laser radiation; - X and γrays; -α,βrays, electron or ion beams, neutrons.	Pass. No this kind of hazard in this machine.
4.8	Hazards generated by materials and substances	-
	Materials and substances processed, used, produced or exhausted by machinery, and materials used to construct machinery can generate several different hazards :	-
	- hazards resulting from ingestion, contact with the skin, eyes and mucous membranes or inhalation of fluids, gases, mists fumes, fibres, dusts or aerosols, having, e.g. a harmful, toxic, corrosive, teratogenic, carcinogenic, irritant or sensitizing effect. - fire and explosion hazards; - biological (e.g. mould) and micro-biological (viral or bacterial)hazards.	Pass. No this kind of hazard in this machine.
4.9	Hazards generated by neglecting ergonomic principles in machine design	-
	Mismatch of machinery with human characteristic and abilities can show itself by :	-
	- physiological effects (e.g. musculo-skeletal disorders) resulting, e.g. from unhealthy postures, excessive or	Pass.

Clause	EN ISO 12100：2010 Requirements	Compliance (Pass/Fail/Not applicable)
	repetitive efforts;	No this kind of hazard in this machine.
	- psycho-physiological effects generated by , e.g. mental overload or underload, or stress, arising from the operation, supervision or maintenance of a machine within the limits of its intended use;	Pass. No this kind of hazard in this machine.
	- human errors;	Pass. Please see risk assessment report.
4.10	Slipping, tripping and falling hazards	-
	Neglecting the surface of the floorings and access means may result in injuries from slips, trips or falls.	Pass. No this kind of hazard in this machine.
4.11	Hazard combinations	-
	Some individual hazards which seem to be minor can, when combined with each other, be equivalent to a significant hazard.	Pass. No hazard due to the combination of occurrences which alone by themselves are harmless in this machine.
4.12	Hazards associated with the environment in which the machine is used	-
	Where a machine is designed to operate under environmental conditions which can result in hazards (e.g. temperature, wind, snow, lighting) these hazards shall be taken into account.	Pass. No this kind of hazard in this machine.
5	Strategy for risk reduction	-
5.1	General provisions	-
5.1.1	It is assumed that, when present on machinery, a hazard will sooner or later lead to harm if no protective measure(s) is(are) taken.	Pass. The time limits have been stated

Clause	EN ISO 12100：2010 Requirements	Compliance (Pass/Fail/Not applicable)
		in the instruction manual.
5.1.2	Protective measures are a combination of the measures taken by the designer and the user (see figure 1).	-
	Measures which can be incorporated at the design stage are preferable to and generally more effective than those which are implemented by the user.	Pass. The machine has taken into account the safety devices in design.
5.1.3	Taking into account the experience of users of similar machines and whenever practicable, an exchange of information with the potential users, the designer shall take the following actions, in the order indicated below :	-
	- specify the limits and the intended use of the machine (see 5.2)	Pass. This requirement has been taken into account during design and related information is provided in introduction manual.
	- identify the hazards and associated hazardous situations (see clause 4 and 5.3)	Pass. Please see risk assessment report.
	- estimate the risk, for each identified hazard and hazardous situation (see 5.3)	Pass. Please see risk assessment report.
	- evaluate the risk and take decisions about the need for risk reduction (see 5.3)	Pass. Please see risk assessment report.
	- eliminate the hazard or reduce the risk associated with the hazard by protective measures (see 5.4 and 5.5)	Pass. No this kind of hazard in this machine.

Clause	EN ISO 12100：2010 Requirements	Compliance (Pass/Fail/Not applicable)
	The first four above indents are related to risk assessment, on which detailed information can be found in ISO 14121.	-
5.1.4	The objective to be met is the greatest risk reduction taking into account the four factors below. The strategy defined above is represented by the flowchart in figure 2. The process is iterative and several successive applications may be necessary to reduce the risk , making the test use of available technology.	-
	In carrying out this process, it is necessary to take into account in the following order of preference:	-
	- the safety of the machine during all the phases of its lifecycle.	Pass. These requirements have been complied with.
	- the ability of the machine to perform its function;	Pass. These requirements have been complied with.
	- the usability of the machine;	Pass. These requirements have been complied with.
	- the manufacturing, operational and dismantling costs of the machine. Note 1 – The ideal application of these principles requires knowledge of the use of the machine, the accident history and health records, available risk reduction techniques, the legal framework in which the machine is to be used. Note 2 – A machine design which is acceptable at a particular time may no longer be justifiable when technological development allows the design of an equivalent machine with lower risk.	Pass. These requirements have been complied with.
5.1.5	For the continued safe operation of a machine, it is important that the protective measures allow its easy use	-

Clause	EN ISO 12100：2010 Requirements	Compliance (Pass/Fail/Not applicable)
	and do not hinder its intended use.	
	Not doing this could lead to protective measures being by-passed in order to achieve maximum utility of the machine.	Pass. These requirements have been complied with
5.1.6	If standardized (or other suitable)	-
	Measurement methods exist for an emission, they should be used, in conjunction with existing machinery or prototypes, to determine emission values and comparative emission data. This make it possible for the designer:	-
	- to estimate the risk associated with the emissions;	Pass. Please see risk assessment report.
	- to evaluate the effectiveness of the protective measures implemented at the design stage;	Pass. Effectiveness of the protective measures has been taken into account during design.
	- to provide potential buyers with quantitative information on emissions in the technical documentation;	Pass. Related information is provided in the instruction manual.
	- to provide users with quantitative information on emissions in the information for use.	Pass. Related information is provided in the instruction manual.
	Hazards other than emissions that are described by measurable parameters can be dealt with in a similar manner.	-
5.2	Specification of the limits of the machine	-
	The design of the machine begins with the specification of its limits (see also ISO 14121:1999, clause 5):	-

Clause	EN ISO 12100：2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- use limits: - the intended use of the machine, including the different machine operating modes, phases of use and the different intervention procedures for the operators and - the reasonably foreseeable misuse of the machine.	Pass. The use limits have been stated in the instruction manual.
	- space limits (e.g. range of movement, space requirements for installation and maintenance of the machine, “operator-machine” interface, “machine-power supply” interface).	Pass. The space limits have been stated in the instruction manual.
	- time limits : the foreseeable “life limit “ of the machine and/or of some of its intended use.	Pass. The time limits have been stated in the instruction manual.
5.3	Hazard identification, risk estimation and risk evaluation.	-
	Having identified the various hazards that can be generated by the machine (permanent hazards and those which can appear unexpectedly :see 3.6 and clause 4), the designer shall estimate the risk for each hazard, as far as possible on the basis of quantifiable factors, and finally decide if risk reduction (see 5.4) is required as a result of the risk evaluation.	Pass. Please see the risk assessment report.
	For this purpose, the designer shall take into account the different operating modes and intervention procedures, in particular :	-
	a) human interaction during the whole lifecycle of the machine, as described below:	-

Clause	EN ISO 12100：2010 Requirements	Compliance (Pass/Fail/Not applicable)
	1) construction; 2) transport, assembly and installation; 3) commissioning; 4) use: - setting, teaching/programming or process - changeover; - operation; - cleaning; - fault finding; - maintenance; 5) de-commissioning, dismantling and , as far as safety is concerned, disposal;	Pass. The entire situation has been taken into consideration. And related information has been stated in the instruction manual.
	b) possible states of the machine:	-
	1) the machine performs the intended function (the machine operates normally)	Pass.
	2) the machine does not perform the intended function (i.e. it malfunctions) due to a variety of reasons, including: - variation of a property or of a dimension of the processed material or of the workpiece; - failure of one (or more) of its component parts or services; - external disturbances (e.g. shocks, vibration, electromagnetic interference); - design error or deficiency (e.g. software errors); - disturbance of its power supply;	Pass. All situations have been taken into consideration and the related information has been stated in the instruction manual.

Clause	EN ISO 12100：2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- surrounding conditions(e.g. damaged floor surfaces);	
	c) unintended behaviour of the operator or reasonably foreseeable misuse of the machine, e.g.	-
	- loss of control of the machine by the operator (especially for hand-held or mobile machines)	Not applicable.
	- reflex behaviour of a person in case of malfunction, incident or failure during the use of the machine;	Pass. All the situations have been taken into consideration and the related information has been stated in the instruction manual.
	- behaviour resulting from lack of concentration or carelessness;	Pass. All the situations have been taken into consideration and the related information has been stated in the instruction manual.
	- behaviour resulting from taking the “line of least resistance “ in carrying out a task;	Pass.
	- behaviour resulting from pressures to keep the machine running in all circumstances;	Pass.
	- behaviour of certain persons (e.g. children, disabled persons)	Pass.
	Risk estimation and evaluation have to be applied after each of the three steps of risk reduction defined in 5.4 and illustrated in figure 2.	Pass. Please see the risk assessment report.
	When carrying out a risk assessment , the risk from the most likely severity of the harm that is likely to occur from each identified hazard shall be considered, but the highest foreseeable severity shall also be taken into	Pass. Please see the risk assessment

Clause	EN ISO 12100：2010 Requirements	Compliance (Pass/Fail/Not applicable)
	account, even if the probability of such an occurrence is no high.	report.
5.4	Elimination of hazards or reduction of risk by protective measures	-
	This objective may be met by removing the hazards or by reducing, separately or simultaneously, each of the two elements which determine the risk:	-
	d) severity of harm form the hazard under consideration;	Pass.
	e) probability of occurrence of that harm.	Pass. No this possibility
	All protective measures intended to reach this objective shall be applied according to the following sequence, referred to as the “3-step method” (see also figures 1 and 2)	Pass. 3-step method has been used.
	- inherently safe design measures (see also ISO 12100-2:2003, clause 4)	Pass. Please see the related clause.
	- safeguarding and possibly complementary protective measures (see ISO 12100-2:2003, clause 5)	Pass. Please see the related clause.
	- information for use about the residual risk (see ISO 12100-2:2003, clause 6)	Pass Please see the related clause.
	Information for use shall not be a substitute for the correct application of inherently safe design measures or safeguarding or complementary protective measures.	Pass.
	Adequate protective measures associated with each of the operating modes and intervention procedures (see 5.3) prevent operators from being induced to use hazardous intervention techniques in case of technical difficulties.	Pass. Appropriate protective measures have been taken.

Clause	EN ISO 12100：2010 Requirements	Compliance (Pass/Fail/Not applicable)
5.5	Achievement of risk reduction objectives	-
	The iterative risk reduction process according to 5.4 and figure 2 can be concluded after achievement of adequate risk reduction and, if applicable, a favourable outcome of risk comparison (see ISO 14121, 8.3)	Pass. These requirements have been complied with.
	Adequate risk reduction can be considered achieved when one is able to give a positive answer to each of the following questions:	-
	- have all operating conditions and all intervention procedures been taken into account?	Pass. All the conditions have been taken into consideration
	- has the method stated in 5.4 been applied ?	Pass. Please see the related clause.
	- have hazards been eliminated or risks from hazards been reduced to the lowest practicable level?	Pass. Please see risk assessment report.
	- is it certain that the measures taken do not generate new hazards ?	Pass. There is no new hazard generated.
	- are the users sufficiently informed and warned about the residual risks ?	Pass. Enough warnings and related information is stated in instruction manual.
	- is it certain that the operator's working conditions are not jeopardized by the protective measures taken?	Pass.
	- are the protective measures taken compatible with each other?	Pass.

Clause	EN ISO 12100：2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- has sufficient consideration been given to the consequences that can arise from the use of a machine designed for professional/industrial use when it is used in a non-professional/non-industrial context?	Pass. All the conditions have been considered.
	- is it certain that the measures taken do not excessively reduce the ability of the machine to perform its function?	Pass.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
1	Scope	
2	Normative references	-
3	Terms and definitions	-
4	Inherently safe design measures	-
4.1	General	-
	Inherently safe design measures are the first and most important step in the risk reduction process because protective measures inherent to the characteristics of the machine are likely to remain effective, whereas experience has shown that even well-designed safeguarding may fail or be violated and information for use may not be followed.	Pass. Appropriate machine design has been performed by the manufacturer.
	Inherently safe design measures are achieved by avoiding hazards or reducing risks by a suitable choice of design features of the machine itself and/or interaction between the exposed persons and the machine. NOTE Clause 5 gives safeguarding and complementary measures to achieve the risk reduction objectives where inherently safe design measures are not sufficient (see 3-step method in	Pass. Appropriate machine design has been performed by the manufacturer.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	ISO 12100-1:2003, clause 5)	
4.2	Consideration of geometrical factors and physical aspects	-
4.2.1	Geometrical factors	-
	Such factors can be , e.g.	-
	- designing the shape of machinery to maximize direct visibility of the working areas and hazard zones from the control position, e.g. reducing blind spots, and choosing and locating means of indirect vision where necessary (e.g. mirrors) so as to take into account the characteristics of human vision, particularly when safe operation requires permanent direct control by the operator, e.g. : - the traveling and working area of mobile machines; - the zone of movement of lifted loads or of the carrier of machinery for lifting persons; - the area of contact of the tool of a hand-held or hand-guided machine with the material being worked;	Pass. Appropriate machine design has been performed by the manufacturer.
	The design of the machine shall be such that, from the main control position, the operator is able to ensure that there are no exposed persons in the danger zones.	Pass. Appropriate machine design has been performed by the manufacturer.
	- the shape and the relative location of the mechanical component parts; for instance, crushing and shearing hazards are avoided by increasing the minimum gap between the moving	Pass. Appropriate machine design has been

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	parts, such that the part of the body under consideration can enter the gap safely , or by reducing the gap so that no part of the body can enter it (see ISO 13852, ISO 13853, ISO 13854)	performed by the manufacturer.
	- avoiding sharp edges and corners, protruding parts. In so far as their purpose allows, accessible parts of the machinery shall have no sharp edges, no sharp angles, no rough surfaces, no protruding parts likely to cause injury, and no openings which may “trap” parts of the body or clothing. In particular, sheet metal edges shall be deburred, flanged or trimmed, open ends of tubes which may cause a “trap” shall be capped.	Pass. Appropriate machine design has been performed by the manufacturer.
	- designing the shape of the machine to achieve a proper working position and accessibility of manual controls (actuators)	Pass. Appropriate machine design has been performed by the manufacturer.
4.2.2	Physical aspects	-
	Such aspects can be, e.g.	-
	- limiting the actuating force to a sufficiently low value so that the actuated part does not generate a mechanical hazard;	Pass. The actuating force has been limited to be a sufficiently low value so that the actuated part does not generate a mechanical hazard.
	- limiting the mass and/or velocity of the movable elements, and hence their kinetic energy;	Pass. The mass and/or velocity of the movable elements, and hence their kinetic energy have been limited.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- limiting the emissions by acting on the characteristics of the source: - measures for reducing noise emission at source (see ISO/TR 11688-1) - measures for reducing the emission of vibration at source include e.g. redistribution or addition of mass and change of process parameters, e.g. frequency and/or amplitude of movements (for hand-held and hand-guided machinery, see CR 1030-3) - measures for reducing the emission of hazardous substances include e.g. use of less hazardous substances or use of dust reducing processes; - measures for reducing radiation emissions include e.g. avoiding the use of hazardous radiation sources, limiting the power of radiation to the lowest level sufficient for the proper functioning of the machine, designing the source so that the beam is concentrated on the target, increasing the distance between the source and the operator or providing for remote operation of the machinery.	Pass. The emissions by acting on the characteristics of the source have been limited.
	- measures for the reduction of emission of non-ionizing radiation are given in 5.4.5 (see also EN 12198-1and -3)	-
4.3	Taking into account the general technical knowledge regarding machine design	-
	This general technical knowledge can be derived from technical specifications for design (e.g. standards, design codes, calculation rules).These should be used to cover :	-
	a) mechanical stresses, e.g.:	-
	- stress limitation by implementation of correct calculation, construction and fastening methods as regards, e.g. bolted assemblies, welded	Pass. The appropriate technical knowledge

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	assemblies	of mechanical has been taken into account.
	- stress limitation by overload prevention, (e.g. "fusible" plugs, pressure-limiting valve, breakage points, torque-limiting devices);	Pass. The appropriate technical knowledge of mechanical has been taken into account.
	- avoiding fatigue in elements under variable stresses (notably cyclic stresses);	Pass. The appropriate technical knowledge of mechanical has been taken into account.
	- static and dynamic balancing of rotating elements;	Pass. The appropriate technical knowledge of mechanical has been taken into account.
	b) materials and their properties e.g.:	-
	- resistance to corrosion, ageing, abrasion and wear;	Pass. The materials have been treated by appropriate methods.
	- hardness, ductility, brittleness;	Pass. The materials have been treated by appropriate methods.
	- homogeneity;	Pass. The materials have been treated by appropriate methods.
	- toxicity;	Pass. No this kind of hazard in this machine.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- flammability.	Pass. No this kind of hazard in this machine.
	- flammability.	Pass. No this kind of hazard in this machine.
	c) emission values for :	-
	- noise;	Pass. No noise will result in hazard in this machine.
	- vibration;	Pass. No vibration will result in hazard in this machine.
	- hazardous substances;	Pass. No hazardous substances will result in hazard in this machine.
	- radiation.	Pass. No radiation will result in hazard in this machine.
	When the reliability of particular components or assemblies is critical for safety (e.g. ropes, chains, lifting accessories for lifting loads or persons), stress values shall be multiplied by appropriate working coefficients.	Pass. Appropriate working coefficients have been taken into account during design and calculation.
4.4	Choice of an appropriate technology	-
	One or more hazards can be eliminated or risks reduced by the choice of the technology to be used in certain applications, e.g. :	-

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	a) on machines intended for use in explosive atmospheres: - fully pneumatic or hydraulic control system and machine actuators; - “intrinsically safe” electrical equipment (see EN 50020)	Pass The related safety measures are taken.
	b) for particular products to be processed such as a solvent: equipment assuring that the temperature will remain far below the flash point.	Not applicable.
	c) alternative equipment to avoid high noise level, e.g.: - electrical instead of pneumatic equipment - in certain conditions, water cutting instead of mechanical equipment.	Not applicable.
4.5	Applying the principle of the positive mechanical action of a component on another component	-
	If a moving mechanical component inevitably moves another component along with it, either by direct contact or via rigid elements, these components are connected in the positive mode. An example of this is positive opening operation of switching devices in an electrical circuit (see IEC 60947-5-1 and ISO 14119:1998, 5.7)	Pass. The principle of the positive mechanical action of a component on another component has been applied.
4.6	Provisions for stability	-
	Machines shall be designed to have sufficient stability to allow them to be used safely in their specified conditions of use.	Pass. These machines have been designed to have sufficient stability to allow them to be used safely in their specified conditions of use.
	Factors to be taken into account include	-
	- geometry of the base;	Pass.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
		The factor has been taken into account during design.
	- weight distribution, including loading;	Pass. The factor has been taken into account during design.
	- dynamic forces due to movements of parts of the machine, of the machine itself, or of elements held by the machine which may result in an overturning moment;	Pass. The factor has been taken into account during design.
	- vibration	Pass. The factor has been taken into account during design.
	- oscillations of the centre of gravity;	Not applicable
	- characteristics of the supporting surface in case of traveling or installation on different sites (e.g. ground conditions, slope);	Pass. The factor has been taken into account during design.
	- external forces (e.g. wind pressure, manual forces)	Pass. The factor has been taken into account during design.
	Stability shall be considered in all phases of the life of the machine, including handling, traveling, installation, use, de-commissioning and dismantling.	Pass. The factor has been taken into account during design.
	Other protective measures for stability relevant to safeguarding are given in 5.2.6	Pass. Please see the related clause.
4.7	Provision for maintainability	-
	When designing a machine, the following maintainability factors shall be taken into account:	-

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- accessibility, taking into account the environment and the human body measurements, including the dimensions of the working clothes and tools used;	Pass. These factors have been taken into account during design.
	- ease of handling, taking into account human capabilities;	Pass. The factor has been taken into account during design.
	- limitation of the number of special tools and equipment;	Pass. The factor has been taken into account during design.
4.8	Observing ergonomic principles	-
4.8.1	Ergonomic principles shall be taken into account in designing machinery to reduce mental or physical stress and strain of the operator.	Pass. Appropriate ergonomic principles have been taken into account in designing machinery to reduce mental or physical stress and strain of the operator.
	These principles shall be considered when allocating functions to operator and machine (degree of automation) in the basic design.	Pass. These principles have been taken into account during allocating functions to operator and machine.
	Account shall be taken of body sizes likely to be found in the intended user population, strengths and postures, movement amplitudes, frequency of cyclic actions (see ISO 10075 and ISO 10075-2)	Pass. All these factors have been taken into account during design.
	All elements of the “operator-machine” interface such as controls, signaling or data display elements, shall be designed to be easily understood so that clear and unambiguous interaction between the operator and the machine is possible.(see EN 614-1, ISO 6385, EN 13861 and IEC 61310-1)	Pass. All arrangement and design of manual controls have been checked in compliance with.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	Designer's attention is especially drawn to following ergonomic aspects of machine design	-
4.8.2	Avoiding stressful postures and movements during use of the machine (e.g. by providing facilities to adjust the machine to suit the various operators).	Pass. Stressful postures and movements during use of the machine have been avoided.
4.8.3	Designing machines and more especially hand-held and mobile machines to enable them to be operated easily taking into account human effort, actuation of controls and hand, arm and leg anatomy.	Pass. This machine has been adjusted to the human strength and convenient movement.
4.8.4	Avoiding as far as possible noise, vibration, thermal effects (e.g. extreme temperatures).	Pass. This machine has been designed with low noise, vibration.
4.8.5	Avoiding linking the operator's working rhythm to an automatic succession of cycles	Pass. This situation has been avoided.
4.8.6	Providing local lighting on or in the machine for the illumination of the working area and of adjusting, setting-up, and frequent maintenance zones when the design features of the machine and /or its guards render the ambient lighting inadequate.	Pass. Adequate lighting is provided.
	Flicker, dazzling, shadows and stroboscopic effects shall be avoided if they can cause a risk.	Not applicable.
	If the position of the lighting source has to be adjusted, its location shall be such that it does not cause any risk to persons making the adjustment.	Not applicable.
4.8.7	Selecting, locating and identifying manual controls(actuators) so that:	-
	- they are clearly visible and identifiable and appropriately marked where necessary (see5.4)	Pass. All design and arrangement of the control logic have been checked in

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
		compliance with this requirement.
	- they can be safely operated without hesitation or loss of time and without ambiguity (e.g. a standard layout of controls reduces the possibility of error when an operator changes from a machine to another one of similar type having the same pattern of operation)	Pass. All design and arrangement of the control logic have been checked in compliance with this requirement.
	- their location(for push-buttons) and their movement (for levers and handwheels) are consistent with their effect (see IEC 61310-3)	Pass. All the function has been checked in compliance with this requirement.
	- their operation cannot cause additional risk	Pass.
	Where a control is designed and constructed to perform several different actions, namely where there is no one-to-one correspondence (e.g. keyboards), the action to be performed shall be clearly displayed and subject to confirmation where necessary.	Not applicable.
	Controls shall be so arranged that their layout, travel and resistance to operation are compatible with the action to be performed, taking account of ergonomic principles.	Pass. All the arrangements of the control logic have been checked in compliance with this requirement.
	Constraints due to the necessary or foreseeable use of personal protective equipment(such as footwear, gloves)shall be taken into account.	Not applicable.
4.8.8	Selecting, designing and locating indicators, dials and visual display units so that:	-
	- they fit within the parameters and characteristics of human perception	Pass.
	- information displayed can be detected, identified and interpreted conveniently, i.e. long lasting, distinct, unambiguous and understandable with respect to the operator's requirements and the	Pass. All the information displayed comply with this requirement.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	intended use;	
	- the operator is able to perceive them form the control position	Pass.
4.9	Preventing electrical hazard	-
	For the design of the electrical equipment of machines IEC 60204-1:1997 gives general provisions, especially in clause 6 for protection against electric shock.	Not applicable
	For requirements related to specific machines, see corresponding IEC standards (e.g. series of IEC 61029, IEC 60745, IEC60335).	Not applicable.
4.10	Preventing hazards from pneumatic and hydraulic equipment	-
	Pneumatic and hydraulic equipment of machinery shall be designed so that :	-
	- the maximum rated pressure cannot be exceeded in the circuits (e.g. by means of pressure limiting devices)	Pass. No this kind of hazard in this machine.
	- no hazard results from pressure surges or rises, pressure losses or drops or losses of vacuum;	Pass. No such hazards exist.
	- no hazardous fluid jet or sudden hazardous movement of the hose (whiplash)results from leakage or component failures;	Not applicable.
	- air receivers, air reservoirs or similar vessels (e.g. in gas loaded accumulators) comply with the design rules for these elements;	Pass. No this kind of hazard in this machine..
	- air elements of the equipment, and especially pipes and hoses, be protected against harmful external effects;	Pass. No this kind of hazard in this machine.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- as far as possible, reservoirs and similar vessels (e.g. in gas loaded accumulators)are automatically depressurized when isolating the machine from its power supply (see 5.5.4) and, if it is not possible, means are provided for their isolation, local depressurizing and pressure indication (see also ISO 14118:2000, clause 5)	Pass. No this kind of hazard in this machine.
	- all elements which remain under pressure after isolation of the machine from its power supply be provided with clearly identified exhaust devices, and a warning label drawing attention to the necessity of depressurizing those elements before any setting or maintenance activity on the machine. See also ISO 4413 and ISO4414	Pass. No this kind of hazard in this machine.
4.11	Applying inherently safe design measures to control system	-
4.11.1	General	-
	The design measures of the control system shall be chosen so that their safety-related performance provides a sufficient amount of risk reduction (see ISO 13849-1)	Pass. Inherently safe design measures to control system have applied.
	The correct design of machine control systems can avoid unforeseen and potentially hazardous machine behaviour.	Pass. Inherently safe design measures to control system have applied.
	Typical causes of hazardous machine behavior are :	-
	- an unsuitable design or modification (accidental or deliberate) of the control system logic;	Pass. No this kind of hazard in this machine
	- a temporary or permanent defect or a failure of one or several components of the control system;	Pass.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- a variation or a failure in the power supply of the control system;	Pass. No this kind of hazard in this machine
	- inappropriate selection, design and location of the control devices;	Pass. No this kind of hazard in this machine
	Typical examples of hazardous machine behaviour are :	-
	- unintended/unexpected start-up(see ISO 14118)	Pass. No this kind of hazard in this machine
	- uncontrolled speed change;	Pass. No this kind of hazard in this machine
	- failure to stop moving parts;	Pass. No this kind of hazard in this machine
	- dropping or ejection of a mobile part of the machine or of a workpiece clamped by the machine;	Pass. No this kind of hazard in this machine
	- machine action resulting from inhibition (defeating or failure) of protective devices	Pass. No this kind of hazard in this machine
	In order to prevent hazardous machine behaviour and to achieve safety functions, the design of control systems shall comply with the principles and methods presented in this subclause 4.11 and in 4.12.	Pass. the design of control systems comply with the related principles and methods
	These principles and methods shall be applied singly or in combination as appropriate to the circumstances (see ISO 13849-1 and IEC 60204-1:1997, clauses 9 to 12).	Not applicable
	Control systems shall be designed to enable the operator to interact with the machine safely and easily; this requires one or several of the following solutions;	-

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- systematic analysis of start and stop conditions;	Pass. Systematic analysis have been applied.
	- provision for specific operating modes (e.g. start-up after normal stop, restart after cycle interruption or after emergency stop, removal of the workpieces contained in the machine, operation of a part of the machine in case of a failure of a machine element)	Pass. Enough provisions have been provided.
	- clear display of the faults;	Pass.
	- measures to prevent accidental generation of unexpected start commands (e.g. shrouded start device) likely to cause dangerous machine behaviour (see ISO 14118:2000, figure 1)	Pass. Main switch with lock and related devices are provided.
	- maintained stop commands(e.g. interlock) to prevent restarting that could result in dangerous machine behaviour (see ISO 14118:2000, figure 1)	Pass. This requirement is complied with.
	An assembly of machines may be divided into several zones for emergency stopping, for stopping as a result of protective devices and/or for isolation and energy dissipation.	Not applicable.
	The different zones shall be clearly defined and it shall be obvious which parts of the machine belong to which zone.	Not applicable.
	Likewise it shall be obvious which control devices (e.g. emergency stop devices, supply disconnecting devices)and/or protective devices belong to which zone.	Not applicable
	The interfaces between zones shall be designed such that no function in one zone creates hazards in another zone which has been stopped for an intervention.	Not applicable
	Control systems shall be designed to limit the movements of parts of the machinery, the machine	Not applicable

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	itself, or workpieces and/or loads held by the machinery, to the safe design parameters(e.g. range, speed, acceleration, deceleration, load capacity). Allowance shall be made for dynamic effects (e.g. the swinging of loads).	
	For example:	-
	- the traveling speed of mobile pedestrian controlled machinery other than remote-controlled shall be compatible with walking speed.	Not applicable
	- the range, speed, acceleration and deceleration of movements of the person-carrier and carrying vehicle for lifting persons shall be limited to non-hazardous values, taking into account the total reaction time of the operator and the machine.	Not applicable
	- the range of movements of parts of machinery for lifting loads shall be kept within specified limits.	Not applicable
	When machinery is designed to use synchronously different elements which can also be used independently the control system shall be designed to prevent risks due to lack of synchronization.	Not applicable
4.11.2	Starting of internal power source/switching on an external power supply	-
	Starting of an internal power source or switching on an external power supply shall not result in starting of working parts (e.g. starting the internal combustion engine shall not lead to movement of a mobile machine, connection to mains electricity supply shall not result in starting of working parts of an electrical machine; see IEC 60204-1:1997, 7.5)	Not applicable
4.11.3	Starting/stopping of a mechanism	-
	The primary action for starting or accelerating the movement of a mechanism should be performed by application or increase of voltage or fluid pressure, or, if binary logic elements are considered, by passage from state 0 to state 1(if state 1 represents the highest energy state)	Pass. This requirement has been taken into account during design.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	The primary action for stopping or slowing down should be performed by removal or reduction of voltage or fluid pressure, or, if binary logic elements are considered, by passage from state 1 to state 0 (if state 1 represents the highest energy state).	Pass. The type of stopping of this machine belongs to state 1 and state 0.
	When, in order for the operator to maintain permanent control of deceleration, this principle is not observed (e.g. a hydraulic braking device of a self-propelled mobile machine), the machine shall be equipped with a means of slowing and stopping in case of failure of the main braking system	Pass. No such situation exists.
4.11.4	Restart after power interruption	-
	If it may generate a hazard, the spontaneous restart of a machine when it is re-energized after power interruption shall be prevented (e.g. by use of a self-maintained relay, contactor or valve).	Pass. The spontaneous restart of a machine when it is re-energized after power interruption has been prevented by contactor.
4.11.5	Interruption of power supply	-
	Machinery shall be designed to prevent hazardous situations resulting from interruption or excessive fluctuation of the power supply. At least the following requirements shall be met:	Pass. The hazardous situations resulting from interruption or excessive fluctuation of the power supply has been prevented.
	- the stopping function of the machinery shall remain;	Pass.
	- all devices whose permanent operation is required for safety shall operation an effective way to maintain safety (e.g. locking, clamping devices, cooling or heating devices, power-assisted steering of self-propelled mobile machinery);	Pass.
	- parts of machinery or workpieces and/or loads held by machinery which are liable to move as a result of potential energy shall be retained for the time necessary to allow them to be safely lowered.	Pass. No such situation exists.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
4.11.6	Use of automatic monitoring	-
	Automatic monitoring is intended to ensure that a safety function(s) implemented by a protective measure do(es) not fail to be performed if the ability of a component or an element to perform its function is diminished, or if the process conditions are changed in such a way that hazards are generated.	Pass. Appropriate automatic monitoring has been used.
	Automatic monitoring either detects a fault immediately or carries out periodic checks so that a fault is detected before the next demand upon the safety function.	Pass. Appropriate automatic monitoring has been used.
	In either case, the protective measure can be initiated immediately or delayed until a specific event occurs (e.g. the beginning of the machine cycle.) The protective measures may be , e.g.:	Pass. Appropriate automatic monitoring has been used.
	- the stopping of the hazardous process;	Pass. Emergency stop is provided.
	- preventing the re-start of this process after the first stop following the failure;	Pass. Reset before restart is necessary.
	- the triggering of an alarm	Pass. An alarm is provided.
4.11.7	Safety functions implemented by programmable electronic control systems	-
4.11.7.1	General	-
	A control system including programmable electronic equipment (e.g. programmable controllers) can be used to implement safety functions t machinery.	Pass. Such equipment is provided.
	Where a programmable electronic control system is used it is necessary to consider its performance requirements in relation to the requirements for the safety functions.	Pass.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	The design of the programmable electronic control system shall be such that the probability of random hardware failures and the likelihood of systematic failures that can adversely affect the performance of the safety-related control function(s) are sufficiently low.	Pass.
	Where a programmable electronic control system performs a monitoring function, the system behaviour on detection of a fault shall be considered (see also IEC 61508 series for further guidance)	Not applicable.
	The programmable electronic control system should be installed and validated to ensure that the specified performance (e.g. safety integrity level (SIL) in IEC 61508 series) for each safety function has been achieved.	Not applicable.
	Validation comprises testing an analysis (e.g. static, dynamic or failure analysis) to show that all parts interact correctly to perform the safety function and that unintended functions do not occur.	Pass. All parts interact correctly to perform the safety function and that unintended functions do not occur.
4.11.7.2	Hardware aspects	-
	The hardware (including e.g. sensors, actuators, logic solvers) shall be selected (and/or designed) and installed to meet both the functional and performance requirements of the safety function(s) to be performed, in particular, by means of :	Pass. The hardware has been selected and installed to meet both the functional and performance requirements of the safety functions to be performed.
	- architectural constraints (e.g. the configuration of the system, its ability to tolerate faults, its behaviour on detection of a fault);	Pass. Appropriate devices are provided.
	- selecting (and/or designing) equipment and devices with an appropriate probability of dangerous random hardware failure;	Pass. Appropriate devices are provided.
	Incorporating measures and techniques within the hardware to avoid systematic failures and control systematic faults.	Pass. Appropriate devices are provided.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
4.11.7.3	Software aspects	-
	The software (including internal operating software (or system software) and application software) shall be designed so as to satisfy the performance specification for the safety functions (see also IEC 61508-3)	Pass. This requirement has been taken into account during designing the software.
4.11.7.4	Application software	-
	Application software should not be re-programmable by the user.	Pass. Application software could not be re-programmable by the user.
	This may be achieved by use of embedded software in a non re-programmable memory (e.g. micro-controller, application specific integrated circuit (ASIC)	Pass. Application software could not be re-programmable by the user.
	When the application requires reprogramming by the user, the access o the software dealing with safety functions should be restricted e.g. by : - locks; - passwords for the authorized persons	Pass. Passwords for the authorized persons have been used.
4.11.8	Principles relating to manual control	-
	a) Manual control devices shall be designed and located according to the relevant ergonomic principles given in 4.8.7	Pass. Manual control devices have been designed and located according to the relevant ergonomic principles given in 4.8.7.
	b) A stop control device shall be placed near each start control device. Where the start/stop function is performed by means of a hold-to-run control, a separate stop control device shall be provided when a risk can result from the hold-to-run control device failing to deliver a stop command when released.	Pass. A stop control device has been placed near each start control device.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	c) Manual controls shall be located out of reach of the danger zones (see IEC 61310-3:1999, clause 4), except for certain controls where, of necessity, they are located within a danger zone, such as emergency stop or teach pendant.	Pass. Manual controls have been located out of reach of the danger zones.
	d) Whenever possible, control devices and control positions shall be located so that the operator is able to observe the working area or hazard zone.	Pass. The control devices and control positions have been located so that the operator is able to observe the working area or hazard zone.
	The driver of a ride-on mobile machine shall be able to actuate all control devices required to operate the machine from the driving position, except for functions which can be controlled more safely from other positions.	Not applicable.
	On machinery intended for lifting persons, controls for lifting and lowering and, if appropriate, for moving the carrier, shall generally be located in the carrier.	Not applicable.
	If safe operation requires controls to be situated outside the carrier, the operator in the carrier shall be provided with the means of preventing hazardous movements.	Not applicable.
	e) if it is possible to start the same hazardous element by means of several controls, the control circuit shall be so arranged that only one control is effective at a given time	Not applicable.
	This applies especially to machines which can be manually controlled by means among others of a portable control unit (teach pendant, for instance), with which the operator may enter danger zones.	Not applicable.
	f) Control actuators shall be designed or guarded so that their effect, where a risk is involved, cannot occur without intentional operation (see ISO 9355-1 and ISO 447)	Pass. Control actuators have been designed or guarded so that their effect, where a risk is involved, cannot occur without intentional operation.
	g) For machine functions whose safe operation depends on permanent, direct control by the	Pass.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	operator, measures shall be taken to ensure the presence of the operator at the control position, e.g. by the design and location of control devices.	This requirement is complied with.
	h) For cable less control an automatic stop shall be performed when correct control signals are not received, including loss of communication (see IEC 60204-1:1997, 9.2.70	Not applicable.
4.11.9	Control mode for setting, teaching, process changeover, fault-finding, cleaning or maintenance	-
	Where, for setting, teaching, process changeover, fault-finding, cleaning or maintenance of machinery, a guard has to displaced or removed and/or a protective device has to be disabled, and where it is necessary for the purpose of these operations for the machinery or part of the machinery to be put in operation, safety of the operator shall be achieved using a specific control mode which simultaneously:	Not applicable.
	- disables all other control modes;	Not applicable.
	- permits operation of the hazardous elements only by continuous actuation of an enabling device, a hold-to-run control device or a two-hand control device;	Not applicable.
	- permits operation of the hazardous elements only in reduced risk conditions (e.g. reduced speed, reduced power/force, step-by-step operation, e.g. with a limited movement control device)	Not applicable.
	This control mode shall be associated with one or more of following measures:	Not applicable.
	- restriction of access to the danger zone as far as possible.	Not applicable.
	- emergency stop control within immediate reach of the operator;	Not applicable.
	- portable control unit (teach pendant) and/or local controls allowing sight of the controlled elements.(see IEC 60204-1:1997, 9.2.4)	Not applicable.
4.11.10	Selection of control and operating modes	-
	If machinery has been designed and built to allow for its use in several control or operating modes requiring	Not applicable.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	different protective measures and/or work procedures (e.g. to allow for adjustment , setting, maintenance, inspection), it shall be fitted with a mode selector which can be locked in each position.	
	Each position of the selector shall be clearly identifiable and shall exclusively allow one control or operating mode.	Not applicable.
	The selector may be replaced by another selection means which restricts the use of certain functions of the machinery to certain categories of operators (e.g. access codes for certain numerically controlled functions).	Not applicable.
4.11.11	Applying measures achieve electromagnetic compatibility (EMC)	-
	For guidance on electromagnetic compatibility, see IEC 60204-1:1997, 4.4.2 and IEC 61000-6 series.	Not applicable
4.11.12	Provision of diagnostic systems to aid fault-finding	-
	Diagnostic systems to aid fault finding should be included in the control system so that there is no need to disable any protective measures.	Pass. Diagnostic systems are provided.
4.12	Minimizing the probability of failure of safety functions	-
	Safety of machinery is not only dependent on the reliability of the control systems but also on the reliability of all parts of the machine.	Pass.
	The continued operation of the safety functions is essential for the safe use of the machine. This can be achieved by :	-
4.12.1	Use of reliable components	-
	“Reliable components” means components which are capable of withstanding all disturbances and stresses associated with the usage of the equipment in the conditions of intended use (including the environmental conditions), for the period of time or the number of operations fixed for the use, with a low probability of failures generating a hazardous malfunctioning of the machine. Components shall be selected taking into account all factors mentioned	Pass. Reliable components have been used.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	above(see also 4.13)	
4.12.2	Use of “oriented failure mode” components	-
	“Oriented failure mode” components or systems are those in which the predominant failure mode is known in advance and which can be used so that such a failure leads to a non-hazardous alteration of the machine function.	Not applicable.
	The use of such components should always be considered, particularly in cases where redundancy is not employed.	Not applicable.
4.12.3	Duplication (or redundancy) of components or subsystems	-
	In the design of safety-related parts of the machine, duplication (or redundancy) of components may be used so that, if one component fails, another component (or other components) continue(s) to perform its (their) function, thereby ensuring that the safety function remains available.	Not applicable.
	In order to allow the proper action to be initiated, component failure shall be preferably detected by automatic monitoring (see 4.11.6) or in some circumstances by regular inspection,	Not applicable.
	provided that the inspection interval is shorter than the expected lifetime of the components.	Not applicable.
	Diversity of design and/or technology can be used to avoid common cause failures (e.g. from electromagnetic disturbance) or common mode failures.	Not applicable.
4.13	Limiting exposure to hazards through reliability of equipment	-
	Increased reliability of all component parts of machinery reduces the frequency of incidents requiring rectification, thereby reducing exposure to hazards.	Pass. This requirement is complied with.
	This applies to power systems (operative part) as well as to control systems, to safety functions as well as to other functions of machinery.	Pass. This requirement is complied with.
	Safety-critical components (as e.g. certain sensors) with a known reliability shall be used.	Pass. Safety-critical components are used in

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
		this machine.
	The elements of guards and of protective services shall be particularly reliable, as their failure can expose persons to hazards, and also as poor reliability would encourage attempts to defeat them.	Pass. This requirement is complied with.
4.14	Limiting exposure to hazards through mechanization or automation of loading(feeding) /unloading (removal) operations	-
	Mechanization and automation of machine loading/unloading operations and more generally of handling operations (of workpieces, materials, substances) limit the risk generated by these operations by reducing the exposure of persons to hazards at the operating points.	Pass. This requirement is complied with.
	Automation can be achieved e.g. by robots, handling devices, transfer mechanisms, air blast equipment.	Pass. This requirement has been complied with by design.
	Mechanization can be achieved, e.g. by feeding slides, push rods, hand-operated indexing tables.	Pass. This requirement has been complied with by design.
	While automatic feeding and removal devices have much to offer in preventing accidents to machine operators, they can create danger when any faults are being rectified.	Appropriate provisions have been provided.
	Care shall be taken to ensure that the use of these devices does not introduce further hazards (e.g. trapping, crushing) between the devices and parts of the machine or workpieces/materials being processed.	Pass. These devices will not introduce further hazards
	Suitable safeguards (see clause 5) shall be provided if this cannot be ensured.	Pass. Please see the related clause.
	Automatic feeding and removal devices with their own control systems and the control systems of the associated machine shall be interconnected after thoroughly studying how all safety functions are performed in all control and operation modes of the	Pass. This requirement has been complied with by design.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	whole equipment.	
4.15	Limiting exposure to hazards through location of the setting and maintenance points outside of danger zones.	Pass.
	The need for access to danger zones shall be minimized by locating maintenance, lubrication and setting points outside these zones.	Pass.
5	Safeguarding and complementary protective measures	-
5.1	General	-
	Guards and protective devices shall be used to protect persons whenever inherently safe design does not reasonably make it possible either to remove hazards or to sufficiently reduce risks.	Pass. Appropriate guards and protective devices have been used to protect persons whenever inherently safe design does not reasonably make it possible either to remove hazards or to sufficiently reduce risks.
	Complementary protective measures involving additional equipment (e.g. emergency stop equipment)may have to be taken (see ISO 12100-1:2003, 5,4)	Pass. Please see the related clause.
	The different kinds of guards and protective devices are defined in ISO 12100-1:2003, 3.25 and 3.26.	Pass. Please see the related clause.
	Certain safeguards may be used to avoid exposure to more than one hazard (e.g. a fixed guard preventing access to a zone where a mechanical hazard is present being used to reduce noise level and collect toxic emissions)	Pass. Such safeguards exist.
5.2	Selection and implementation of guards and protective devices	-
5.2.1	General	-
	This subclause gives guidelines for the selection and the implementation of guards and protective devices the primary purpose of which is to protect persons against hazard generated by moving parts,	Pass. Please see the related clause.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	according to the nature of those parts (see figure 1) and to the need for access to the danger zone(s).	
	The exact choice of a safeguard for a particular machine shall be made on the basis of the risk assessment for that machine.	Pass.
	In selecting an appropriate safeguard for a particular type of machinery or hazard zone, it shall be borne in mind that a fixed guard is simple and shall be used where access of an operator to the danger zone is not required during normal operation (operation without any malfunction) of the machinery.	Pass.
	As the need for frequency of access increase this inevitably leads to the fixed guard not being replaced.	Pass. This requirement is complied with.
	This requires the use of an alternative protective measure (movable interlocking guard, sensitive protective equipment.)	Pass. Movable interlocking guard is used.
	A combination of safeguards may sometimes be required. For example, where, in conjunction with a fixed guard, a mechanical loading (feeding) device is used to feed a workpiece into a machine, thereby removing the need for access to the primary hazard zone, a trip device may be required to protect against the secondary drawing-in or shearing hazard between the mechanical loading (feeding) device, when reachable, and the fixed guard.	Not applicable.
	Consideration shall be given to the enclosure of control positions or intervention zones to provide combined protection against several hazards which may include:	Pass. This requirement has been taken in to consideration.
	- hazards from falling or ejected objects (e.g. falling object protection structure)	Pass. No such hazards exist in this machine.
	- emission hazards (e.g. protection against noise, vibration, radiation , harmful substances)	Pass. No such hazards exist in this machine.
	- hazards due to the environment (e.g. protection against heat, cold, foul weather)	Pass.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
		No such hazards exist in this machine.
	- hazards due to tipping over or rolling over of machinery (e.g. roll-over or tip-over protection structure)	Pass. No such hazards exist in this machine.
	The design of such enclosed work stations (e.g. cabs and cabins) shall take into account ergonomic principles Concerning visibility, lighting, atmospheric conditions, access, posture.	Pass. Ergonomic principles have been taken into account during design.
5.2.2	Where access to the hazard zone is not required during normal operation	-
	Where access to the hazard zone is not required during normal operation of the machinery, safeguard should be selected from the following:	-
	a) fixed guard (see also ISO 14120)	Pass. Fixed guards are provided.
	b) interlocking guard with or without guard locking (see also ISO 14119, ISO 14120, and 5.3.2.3 of this standard);	Not applicable.
	c) self-closing guard (see ISO 14120:2000, 3.3.2)	Not applicable.
	d) sensitive protective equipment, e.g. electro-sensitive protective equipment (see IEC 61496-1, IEC 61496-2) or pressure sensitive mat (see ISO 13856-1)	Not applicable.
5.2.3	Where access to the hazard zone is required during normal operation	-
	Where access to the hazard zone is required during normal operation of the machinery , safeguards should be selected from the following:	-
	a) interlocking guard with or without guard locking (see also ISO 14119, ISO 14120 and 5.3.2.3 of this standard);	Not applicable.
	b) sensitive protective equipment, e.g electro-sensitive protective equipment (see IEC 61496-1, IEC 61496-2)	Not applicable.
	c) adjustable guard;	Not applicable.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	d) self-closing guard (see ISO 14120:2002, 3.3.2)	Not applicable.
	e) two-hand control device (see ISO 13851)	Not applicable.
	f) interlocking guard with a start function (control guard) (see 5.3.2.5 of this standard)	Not applicable.
5.2.4	Where access to the hazard zone is required for machine setting, teaching, process changeover, fault finding, cleaning or maintenance.	-
	As far as possible, machines shall be designed so that the safeguards provided for the protection of the production operator may ensure also the protection of personnel in charge of setting, teaching, process changeover, fault finding , cleaning or maintenance without hindering them in performing their task.	Not applicable.
	Such tasks shall be identified and considered in the risk assessment as parts of the use of the machine (see ISO 12100-1:2003,5.3)	Not applicable.
5.2.5	Selection and implementation of sensitive protective equipment	-
5.2.5.1	Selection	-
	Due to the great diversity of the technologies on which their detection function is based, all types of sensitive protective equipment are far from being equally suitable for safety applications.	Not applicable.
	The following provisions are intended to provide the designer with criteria for selecting , for each application , the most suitable device(s).	Not applicable.
	Types of sensitive protective equipment include, e.g.:	-
	- light curtains;	Not applicable.
	- scanning devices as, e.g. laser scanners;	Not applicable.
	- pressure sensitive mats;	Not applicable.
	- trip bars, trip wires.	Not applicable.
	Sensitive protective equipment can be used:	-
	- for tripping purposes;	Not applicable.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- for presence sensing;	Not applicable.
	- for both tripping and presence sensing	Not applicable.
	- to re-initiate machine operation, a practice which is subject to stringent conditions.	Not applicable.
	The following characteristics of the machinery, among others, can preclude the sole use of sensitive protective equipment:	-
	- tendency for the machinery to eject materials or component parts;	Not applicable.
	- necessity to guard against emissions (noise, radiation, dust, etc.)	Not applicable.
	- erratic or excessive machine stopping time;	Not applicable.
	- inability of a machine to stop part-way through a cycle.	Not applicable.
5.2.5.2	Implementation	-
	a) consideration should be given to :	-
	- size, characteristics and positioning of the detection zone (see ISO 13855, which deals with the positioning of some types of sensitive protective equipment)	Not applicable.
	- reaction of the device to fault conditions (see IEC 61496-1, IEC 61496-2 for electro-sensitive protective equipment)	
	- possibility of circumvention	Not applicable.
	- detection capability and its variation over the course of time (e.g. as a result of its susceptibility to different environmental conditions such as the presence of reflecting surfaces, other artificial light sources, sunlight or impurities in the air.	Not applicable.
	b) sensitive protective equipment shall be integrated in the operative part and associated with the control system of the machine so that:	Not applicable.
	- a command is given as soon as a person or part of a person is detected;	Not applicable.
	- the withdrawal of the person or part of a person detected does not, by itself, restart the hazardous	Not applicable.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	machine function (s); therefore, the command given by the sensitive protective equipment shall be maintained by the control system until a new command is given;	
	- restarting the hazardous machine function(s) results from the voluntary actuation , by the operator, of a control device placed outside the hazard zone, where this zone can be observed by the operator;	Not applicable.
	- while the detection function of the sensitive protective equipment is interrupted the machine cannot operate, except during muting phases;	Not applicable.
	- the position and the shape of detection field prevents, ,possibly together with fixed guards, a person or part of a person from entering the hazard zone, or being present in it, without being detected.	Not applicable.
5.2.5.3	Additional requirements for sensitive protective equipment when used for cycle initiation.	-
	In this exceptional application, starting of the machine cycle is initiated by the withdrawal of a person or of the detected part of a person from the sensing field of the sensitive protective equipment, without any additional start command, hence deviating from the general requirement given in the 2nd dash of 5.2.5.2.b)	Not applicable.
	After switching on the power supply, or when the machine has been stopped by the tripping function of the sensitive protective equipment the machine cycle shall be initiated only by voluntary actuation of a start control	Not applicable.
	For cycle initiation by a sensitive protective equipment, only active opto-electronic protective devices (AOPDs) complying with IEC 61496 series shall be used, provided that:	Not applicable.
	a) the requirements for an AOPD used as a tripping and presence-sensing device (see IEC 61496-2) are satisfied (in particular: location, minimum distance (see ISO 13855), detection capability , reliability and monitoring of control and braking	Not applicable.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	systems);	
	b) the cycle time of the machine is short and the facility to re-initiate the machine upon clearing of the sensing field is limited to a period commensurate with a single normal cycle;	Not applicable.
	c) entering the sensing field of the AOPD(s) or opening interlocking guards is the only way to enter the hazard zone;	Not applicable.
	d) if there are more than one AOPD safeguarding the machine, only one of them is capable of cycle reinitiation;	Not applicable.
	e) with regard to the higher risk resulting from automatic cycle initiation, the AOPD and the associated part of the control system comply with a higher safety-related performance than under normal conditions.	Not applicable.
5.2.6	Protective measures for stability	-
	If stability cannot be achieved by inherently safe design measures such as weight distribution (see 4.6), it will be necessary to maintain it by protective measures such as the use of :	-
	- anchorage bolts;	Pass. Anchorage bolts have been used.
	- locking devices;	Not applicable.
	- movement limiters or mechanical stops;	Not applicable.
	- acceleration or deceleration limiters;	Not applicable.
	- load limiters;	Not applicable.
	- alarms warning of the approach to stability or tipping limits;	Not applicable.
5.2.7	Other protective devices	-
	When a machine requires continuous control by the operator(e.g. mobile machines, cranes) and an error of the operator can generate a hazardous situation, this machine shall be equipped with the necessary devices to enable the operation to remain within	Not applicable.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	specified limits , in particular:	
	- when the operator has insufficient visibility of the hazard zone;	Not applicable.
	- when the operator lacks knowledge of the actual value of a safety –related parameter (e.g. .a distance, a speed, the mass of a load, the angle of a slope)	Not applicable.
	- when hazards may result from operations other than those controlled by the operator;	Not applicable.
	The necessary devices include, e.g.:	-
	- devices for limiting parameters of movement (distance, angle, velocity , acceleration)	Not applicable.
	- overloading and moment limiting devices:	Not applicable.
	- devices to prevent collisions or interference with other machines;	Not applicable.
	-device for preventing hazards to pedestrian operators of mobile machinery or other pedestrians;	Not applicable.
	- torque limiting devices, breakage points to prevent excessive stress of components and assemblies;	Not applicable.
	- devices for limiting pressure, temperature;	Not applicable.
	- devices for monitoring emissions;	Not applicable.
	- devices prevent operation in the absence of the operator at the control position;	Not applicable.
	- device to prevent lifting operations unless stabilizers are in place;	Not applicable.
	- devices to limit inclination of the machine on a slope;	Not applicable.
	- devices to ensure that components are in a safe position before traveling;	Not applicable.
	Automatic protective measures triggered by such devices which take operation of the machinery out of the control of the operator (e.g. automatic stop of hazardous movement) should be preceded or accompanied by a warning signal to enable the operator to take appropriate action (see 6.3)	Not applicable.
5.3	Requirements for the design of guards and protective devices	-

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
5.3.1	General requirements	-
	Guards and protective devices shall be designed to be suitable for the intended use, taking into account mechanical and other hazards involved.	Pass. Guards and protective devices have been appropriately designed.
	Guards and protective devices shall be compatible with the working environment of the machine and designed so that they cannot be easily defeated.	Pass. Guards and protective devices have been appropriately designed.
	They shall provide the minimum possible interference with activities during operation and other phases of machine life, in order to reduce any incentive to defeat them.	Pass. Guards and protective devices have been appropriately designed.
	Guards and protective devices shall :	-
	- be of robust construction.	Pass. This requirement has been taken into account during design.
	- not give rise to any additional hazard;	Pass. This requirement has been taken into account during design.
	- not be easy to by-pass or render non-operational;	Pass. This requirement has been taken into account during design.
	- be located at an adequate distance from the danger zone (see ISO 13852, ISO 13853 and ISO 13855).	Pass. This requirement has been taken into account during design.
	- cause minimum obstruction to the view of the production process;	Pass. This requirement has been taken into account during design.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- enable essential work to be carried out on installation and/or replacement of tools and also for maintenance by allowing access only to the area where the work has to be done, if possible without the guard or protective device having to be moved;	Pass. This requirement has been taken into account during design.
	For openings in the guards see ISO 13852 and ISO 13853	Pass. This requirement has been taken into account during design.
5.3.2	Requirements for fixed guards	-
5.3.2.1	Functions of guards	-
	Guards may have to achieve following functions:	-
	- prevention of access to the space enclosed by guard and/or - containment/capture of materials, workpieces, chips, liquids which may be ejected or dropped by the machine and reduction of emissions(noise, radiation, hazardous substances such as dust, fumes, gases) which may be generated by the machine.	Pass These functions are achieved by fixed guards.
	Additionally, they may need to have particular propertied relating to electricity, temperature, fire, explosion, vibration, visibility(see ISO 14120) and operator position ergonomics(e.g. usability, operator's movements, posture, repetitive movements).	Pass These functions are achieved by fixed guards.
5.3.2.2	Requirements for fixed guards	-
	Fixed guards shall be securely held in place:	-
	- either permanently (e.g. by welding) - or by means of fasteners (screws, nuts) making removal/opening impossible without using tools; they should not remain closed without their fasteners (see ISO 14120)	Pass All the fixed guards are securely held in place by appropriate fasteners.
5.3.2.3	Requirements for movable guards	-

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	a) movable guards which provide protection against hazards generated by moving transmission parts shall :	-
	- as far as possible remain fixed to the machinery or other structure (generally by means of hinges or guides) when open;	Not applicable
	- be interlocking guards (with guard locking when necessary) (see ISO 14119)	Not applicable
	b) movable guards against hazards generated by non-transmission moving parts shall be designed and associated with the machine control system so that:	-
	- moving parts cannot start up while they are within the operator's reach and the operator cannot reach moving parts once they have started up ; this can be achieved by interlocking guards, with guard locking when necessary.	NA. Not applicable.
	- they can be adjusted only by an intentional action , such as the use of a tool or a key;	Pass. This requirement is complied with.
	- the absence or failure of one of their components prevents starting of the moving parts or stops them; this can be achieved by automatic monitoring (see 4.11.6)	Pass. This requirement is complied with.
5.3.2.4	Requirements for adjustable guards	-
	Adjustable guards may only be used where the hazard zone cannot for operational reasons be completely enclosed;	Not applicable.
	They shall :	-
	- be designed so that the adjustment remains fixed during a given operation;	Not applicable.
	- be readily adjustable without the use of tools;	Not applicable.
5.3.2.5	Requirements for interlocking guards with a start function (control guards)	-
	An interlocking guard with a start function may be used only when all the following requirements are met:	-

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- all requirements for interlocking guards are satisfied (see ISO 14119)	Not applicable.
	- the cycle time of the machine is short	Not applicable.
	- the maximum opening time of the guard is present to a low value (e.g. equal to the cycle time). When this time is exceeded, the hazardous function(s) cannot be initiated by the closing of the interlocking guard with a start function and resetting is necessary before restarting the machine.	Not applicable.
	- the dimensions or shape of the machine do not allow a person, or part of a person, to stay in the hazard zone or between the hazard zone and the guard while the guard is closed (see ISO 14120)	Not applicable.
	- all other guards whether fixed (removable type) or movable are interlocking guards;	Not applicable.
	- the interlocking device associated with the interlocking guard with a start function is designed in such a way – e.g. by duplication of position detectors and use of automatic monitoring (see 4.11.6)- that its failure cannot lead to an unintended/unexpected start-up;	Not applicable.
	- the guard is securely held open (e.g. by a spring or counterweight)such that it cannot initiate a start while falling by its own weight;	Not applicable.
5.3.2.6	Hazards from guards	-
	Care shall be taken to prevent hazards which might be generated by :	-
	- the guard construction (e.g. sharp edges or corners, material);	Pass. No such hazards exist in this machine.
	- the movements of the guards (shearing or crushing zones generated by power-operated guards and by heavy guards which are liable to fall)	Pass. No such hazards exist in this machine.
5.3.3	Technical characteristics of protective devices	-
	Protective devices shall be selected or designed and connected to the control system so as to ensure correct implementation of their safety function (s)	Pass. This requirement has been taken into

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
		account during design.
	Protective devices shall be either selected as meeting the appropriate product standard (e.g. for active opto-electronic protective devices see IEC 61496-2) or designed according to one or several of the principles formulated in ISO 13849-1.	Pass. This requirement has been taken into account during design.
	Protective devices shall be installed and connected to the control system so that they cannot be easily defeated.	Pass. This requirement has been taken into account during design.
5.3.4	Provisions for alternative types of safeguards.	-
	Provisions should be made to facilitate the fitting of alternative types of safeguards on machinery where it s known that this fitting will be necessary because the work to be done on it will vary.	Not applicable.
5.4	Safeguarding for reducing emissions	-
5.4.1	General	-
	If the measures for the reduction of emissions at source mentioned in 4.2.2 are not adequate, the machine shall be provided with additional protective measures.	Pass. No such hazard exists.
5.4.2	Noise	-
	Additional protective measures include, for example: - enclosures (see ISO 15667) - screens fitted to the machine; - silencers (see ISO 14163)	Pass. No such hazard exists.
5.4.3	Vibration	-
	Additional protective measures include, for example, damping devices for vibration isolation between the source and the exposed person such as resilient mounting or suspended seats.	Pass. No such hazard exists.
	For measures for vibration isolation of stationary industrial machinery see EN 1299	Pass. No such hazard exists.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
5.4.4	Hazardous substances	-
	Additional protective measures include, for example:	-
	- encapsulation of the machine (enclosure with negative pressure);	Not applicable.
	- local exhaust ventilation with filtration.	Not applicable.
	- wetting with liquids;	Not applicable.
	- special ventilation in the area of the machine (air curtains , cabins for operators)	Not applicable.
5.4.5	Radiation	-
	Additional protective measures include, for example:	-
	- use of filtering and absorption;	Not applicable.
	- use of attenuating screens or guards	Not applicable.
5.5	Complementary protective measures	-
5.5.1	General	-
	Protective measures which are neither inherently safe design measures, nor safeguarding (implementation of guards and/or protective devices), nor information for use may have to be implemented as required by the intended use and the reasonably foreseeable misuse of the machine.	Pass.
	Such measures include, but are not limited to , the ones dealt with in 5.5.2 to 5.5.6	-
5.5.2	Components and elements to achieve the emergency stop function	-
	If following a risk assessment, a machine needs to be fitted with components and elements to achieve an emergency stop function to enable actual or impending emergency situations to be averted, the following requirements apply:	-
	- the actuators shall be clearly identifiable, clearly visible and readily accessible	Pass. The actuators can be clearly identifiable, clearly visible and

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
		readily accessible
	- the hazardous process shall be stopped as quickly as possible without creating additional hazards . If this is not possible or the risk cannot be reduced, it should be questioned whether implementation of an emergency stop function is the best solution;	Pass. The hazardous process can be stopped as quickly as possible without creating additional hazards
	- the emergency stop control shall trigger or permit the triggering of certain safeguard movements where necessary.	Pass No this situation exists.
	Once active operation of the emergency stop device has ceased following an emergency stop command, the effect of this command shall be sustained until it is reset.	Pass. Reset is necessary before re-start.
	This reset shall be possible only at that location where the emergency stop command has been initiated.	Pass. This requirement is complied with by appropriate design of the emergency stop.
	The reset of the device shall not restart the machinery, but only permit restarting.	Pass. This requirement is complied with by appropriate design of the emergency stop.
	More details for the design and selection of electrical components and elements to achieve the emergency stop function are provided in IEC 60204 series.	Not applicable
5.5.3	Measures for the escape and rescue of trapped persons	-
	Measures for the escape and rescue of trapped persons may consist e.g. of :	-
	- escape routes and shelters in installations generating operator-trapping hazards’	Not applicable.
	- arrangements for moving some elements by hand, after an emergency stop	Not applicable.
	- arrangements for reversing the movement of some elements	Not applicable.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- anchorage points for descender devices;	Not applicable.
	- means of communication to enable trapped operators to call for help	Not applicable.
5.5.4	Measures for isolation and energy dissipation	-
	Especially with regard to their maintenance and repair , machines shall be equipped with the technical means to achieve the isolation from power supply(ies) and dissipation of stored energy as a result of following actions:	-
	a) isolating (disconnecting, separating) the machine (or defined parts of the machine) from all power supplies;	Pass.
	b) locking (or otherwise securing) all the isolating units in the isolating position;	Pass.
	c) dissipating or , if this is not possible or practicable, restraining (containing) any stored energy which may give rise to a hazard;	Pass.
	d) verifying, by means of a safe working procedure, that the actions taken according to a), b) and c) above have produced the desired effect.	Pass. No this hazard.
	See ISO 14118:2000, clause 5 and IEC 60204-1:1997, 5.5 and 5.6	Not applicable
5.5.5	Provisions for easy and safe handling of machines and their heavy component parts	-
	Machines and their component parts which cannot be moved or transported by hand shall be provided or capable of being provided with suitable attachment devices for transport by means of lifting gear.	Pass. Appropriate attachments are provided.
	These attachments may be, e.g.	-
	- standardized lifting appliances with slings, hooks, eyebolts, or tapped holes for appliance fixing;	Pass. Such devices are used.
	- appliances for automatic grabbing with a lifting hook when attachment is not possible from the	Not applicable.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	ground.	
	- guiding grooves for machines to be transported by a fork truck;	Not applicable.
	- lifting gear and appliances integrated into the machine.	Not applicable.
	Parts of machinery which can be removed manually in operation shall be provided with means for their safe removal and replacement; See also 6.4c) (3rd dash)	Pass
5.5.6	Measures for safe access to machinery	-
	Machinery shall be so designed as to enable operation and all routine tasks relating to setting and/or maintenance, to be carried out, as far as possible, by a person remaining at ground level.	Pass. These requirements have been taken into account during design.
	Where this is not possible, machines shall have built-in platforms, stairs or other facilities to provide safe access for those tasks, but care should be taken to ensure that such platforms or stairs do not give access to danger zones of machinery.	Not applicable.
	The walking areas shall be made from materials which remain as slip resistant as practicable under working conditions and, depending on the height from the ground, suitable guard-rails (see ISO 14122-3) shall be provided.	Not applicable.
	In large automated installations, particular attention shall be given to safe means of access such as walkways, conveyor bridges or crossover points.	Not applicable.
	Means of access to parts of machinery located at a height shall be provided with collective means of protection against falls (e.g. guard-rails for stairways, stepladders and platforms and/or safety cages for ladders)	Not applicable.
	As necessary , anchorage points for personal protective equipment against falls from a height shall also be provided (e.g. in carriers of machinery for lifting persons or with elevating control sations)	Not applicable.
	Openings shall whenever possible open towards a safe position. They shall be designed to prevent hazards due to unintended opening.	Not applicable.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	The necessary aids for access shall be provided (e.g. steps, handholds). Control devices shall be designed and located to prevent their being used as aids for access.	Not applicable.
	When machinery for lifting goods and/or persons includes landings at fixed levels, these shall be equipped with interlocking guards preventing falls when the platform is not present at the level.	Not applicable.
	Movement of the lifting platform shall be prevented while the guards are open.	Not applicable.
	For detailed provisions see ISO 14122-1, ISO 14122-2, ISO 14122-3 and ISO 14122-4.	Not applicable.
6	Information for use	
6.1	General requirements	-
	Drafting information for use is an integral part of the design of a machine (see ISO 12100-1:2003, figure1).	Pass. Please see the related clause.
	Information of use consists of communication links, such as texts, words, signs, signals, symbols or diagrams, used separately or in combination to convey information to the user.	Pass. All the information is stated in the appropriate place.
	It is directed to professional and/or non-professional users.	Pass. All the information is stated in the appropriate place.
6.1.1	Information shall be provided to the user about the intended use of the machine, taking into account, notably, all its operating modes.	-
	It shall contain all directions required to ensure safe and correct use of the machine.	Pass. All the information is stated in the appropriate place.
	With this in view, it shall inform and warn the user about residual risk.	Pass. All the information is stated in the appropriate place.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	The information shall indicate:	-
	- if training is needed;	Pass. All the information is stated in the appropriate place.
	- if personal protective equipment is needed	Pass. All the information is stated in the instruction manual.
	- the possible need for additional guards or protective devices (see ISO 12100-1:2003, figure 1, note 4)	Pass. All the information is stated in the appropriate place.
	It shall not exclude uses of the machine that can reasonably be expected from its designation and description and shall also warn about the risk which would result from using the machine in other ways than the ones described in the information, especially considering its reasonably foreseeable misuse.	Pass. All the information is stated in the appropriate place.
6.1.2	Information for use shall cover, separately or in combination, transport, assembly and installation, commissioning, use (setting, teaching/programming or process changeover, operation, cleaning, fault finding and maintenance) of the machine, and, if necessary , de-commissioning, dismantling and disposal.	Pass. All the information is stated in the appropriate place.
6.2	Location and nature of the information for use	-
	Depending on the risk , the time when the information is needed by the user and the machine design , it shall be decided whether the information – or parts thereof – are to be given:	Pass. All the information is stated in the appropriate place.
	- in /on the machine itself (see 6.3 and 6.4)	Pass. Adequate information is stated in the machine itself.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- in accompanying documents (in particular instruction handbook , see 6.5)	Pass. Adequate information is stated in the accompanying documents
	- on the packaging	Pass. Adequate information is stated on the packaging
	- by other means such as signals and warnings outside the machine.	Pass. Adequate information is stated
	Standardized phrases shall be considered where important messages such as warnings need to be given (see also IEC 62079)	Pass. This requirement is considered.
6.3	Signals and warning devices	-
	Visual signals (e.g. flashing lights) and audible signals (e.g. sirens) may be used to warn of an impending hazardous event such as machine start-up or overspend.	Pass. Signals and warning devices are provided.
	Such signals may also be used to warn the operator before the triggering of automatic protective measures (see last paragraph of 5.2.70	Pass. Please the related clause.
	It is essential that these signals:	-
	- are emitted before the occurrence of the hazardous event;	Pass. This requirement is taken into account during design and selection of the warning devices.
	- are unambiguous;	Pass. This requirement is taken into account during design and selection of the warning devices.
	- can be clearly perceived and differentiated from all other signals used;	Pass. This requirement is taken into account during design and selection of the

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
		warning devices.
	- can be clearly recognized by the operator and other persons.	Pass. This requirement is taken into account during design and selection of the warning devices.
	The warning devices shall be designed and located such that checking is easy.	Pass. This requirement is taken into account during design and location of the warning devices.
	The information for use shall prescribe regular checking of warning devices.	Pass. All the related information is stated in the manual.
	The attention of designers is drawn to the risks from "sensorial saturation" which results from too many visual and/or acoustic signals, which may also lead to defeating the warning devices.	-
6.4	Markings, signs (pictograms), written warnings	-
	Machinery shall bear all markings which are necessary:	-
	a) for its unambiguous identification, at least :	-
	- name and address of the manufacturer;	Pass. Adequate information is provided.
	- designation of series or type;	Pass. Adequate information is provided.
	- serial number, if any.	Pass. Adequate information is provided.
	b) in order to indicate its compliance with mandatory requirements;	-
	- marking;	Pass.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
		Adequate marking is provided.
	- written indications (e.g. for machines intended for use in potentially explosive atmosphere)	Pass. Adequate information is provided.
	c) for its safe use, e.g. :	-
	- maximum speed of rotating parts;	Pass. Adequate information is provided.
	- maximum diameter of tools;	Pass. Adequate information is provided.
	- mass (expressed in kilograms) of the machine itself and/or of removable parts'	Pass. Adequate information is provided.
	- maximum working load;	Pass. Adequate information is provided.
	- necessity of wearing personal protective equipment;	Pass. Adequate information is provided.
	- guard adjustment data;	Pass. Adequate information is provided.
	- frequency of inspection.	Pass. Adequate information is provided.
	Information printed directly on the machine should be permanent and remain legible throughout the expected life of the machine.	Pass. This requirement is complied with.
	Signs or written warnings only saying "danger" shall not be used.	Pass. This requirement is complied with.
	Markings, signs and written warnings shall be readily understandable and unambiguous, especially as regards the part of the function(s) of the machine	Pass.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	which they are related to.	This requirement is complied with.
	Readily understandable signs (pictograms) should be used in preference to written warnings.	Pass. This requirement is complied with.
	Signs and pictograms should only be used if the are understood in the culture in which the machinery is to be used.	Pass. This requirement is complied with.
	Markings shall comply with recognized standards (see ISO 2972, ISO 7000, particularly for pictograms, symbols , colours) See IEC 60204 series as regards marking of electrical equipment.	Not applicable
6.5	Accompanying documents (in particular, instruction handbook)	-
6.5.1	Contents	-
	The instruction handbook or other written instructions (e.g. on the packaging) shall contain among others:	-
	a) information relating to transport, handling and storage of the machine e.g. :	Pass All the related information is stated in the instruction handbook
	- storage conditions for the machine;	Pass. All the related information is stated in the instruction handbook
	- dimensions , mass value(s), position of the centre (s) of gravity;	Pass. All the related information is stated in the instruction handbook
	- indications for handling (e.g. drawings indicating application points for lifting equipment)	Pass. All the related information is stated in the instruction handbook
	b) information relating to installation and commissioning of the machine, e.g.	-

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	- fixing/anchoring and vibration dampening requirements;	Pass. All the related information is stated in the instruction handbook
	- assembly and mounting conditions;	Pass. All the related information is stated in the instruction handbook
	- space needed for use and maintenance;	Pass. All the related information is stated in the instruction handbook
	- permissible environmental conditions (e.g. temperature, moisture, vibration, electromagnetic radiation);	Pass. All the related information is stated in the instruction handbook
	- instructions for connecting the machine to power supply (particularly about protection against electrical overloading);	Pass. All the related information is stated in the instruction handbook
	- advice about waste removal /disposal;	Pass. All the related information is stated in the instruction handbook
	- if necessary, recommendations about protective measures which have to be taken by the user; e.g. additional safeguards (see ISO 12100-1:2003, figure 1, note 4), safety distances, safety signs and signals.	Pass. All the related information is stated in the instruction handbook
	c) information relating to the machine itself, e.g. :	-
	- detailed description of the machine, its fittings, its guards and/or protective devices;	Pass. All the related information is stated in the instruction handbook
	- comprehensive range of applications for which the machine is intended, including prohibited	Pass.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	usages, if any , taking into account variations of the original machine if appropriate.	All the related information is stated in the instruction handbook
	- diagrams (especially schematic representation of safety functions);	Pass. All the related information is stated in the instruction handbook
	- data about noise and vibration generated by the machine, about radiation , gases, vapours, dust emitted by it, with reference to the measuring methods used.	Pass. All the related information is stated in the instruction handbook
	- technical documentation about electrical equipment (see IEC 60204 series)	Not applicable
	- documents attesting that the machine complies with mandatory requirements;	Pass. All the related information is stated in the instruction handbook
	d) information relating to the use of the machine, e.g. about:	-
	- intended use;	Pass. All the related information is stated in the instruction handbook
	- description of manual controls (actuators);	Pass. All the related information is stated in the instruction handbook
	- setting and adjustment;	Pass. All the related information is stated in the instruction handbook
	- modes and means for stopping (especially emergency stop)	Pass. All the related information is stated in the instruction handbook
	- risks which could not be eliminated by the protective measures taken by the designer;	Pass.

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
		All the related information is stated in the instruction handbook
	- particular risks which may be generated by certain applications, by the use of certain fittings, and about specific safeguards which are necessary for such applications.	Pass. All the related information is stated in the instruction handbook
	- reasonably foreseeable misuse and prohibited usages;	Pass. All the related information is stated in the instruction handbook
	- fault identification and location , repair, and re-starting after an intervention;	Pass. All the related information is stated in the instruction handbook
	- personal protective equipment which need to be used and training required.	Pass. All the related information is stated in the instruction handbook
	e) information for maintenance e.g.	-
	- nature and frequency of inspections for safety functions;	Pass. All the related information is stated in the instruction handbook
	- instructions relating to maintenance operations which require a definite technical knowledge or particular skills and hence should be carried out exclusively by skilled persons (e.g. maintenance staff, specialists)	Pass. All the related information is stated in the instruction handbook
	- instructions relating to maintenance actions (e.g. replacement of parts) which do not require specific skills and hence may be carried out by users (e.g. operators)	Pass. All the related information is stated in the instruction handbook
	- drawings and diagrams enabling maintenance personnel to carry out their task rationally (especially fault-finding tasks)	Pass. All the related information is stated in

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
		the instruction handbook
	f) information relating to de-commissioning , dismantling and disposal;	Pass. All the related information is stated in the instruction handbook
	g) information for emergency situations , e.g. :	Pass. All the related information is stated in the instruction handbook
	- type of fire-fighting equipment to be used.	Pass. All the related information is stated in the instruction handbook
	- warning about possible emission or leakage of harmful substance(s), and if possible, indication of means to fight their effects.	Pass. All the related information is stated in the instruction handbook
	h) maintenance instructions provided for skilled persons (second dash in e))and maintenance instructions provided for unskilled persons (third dash in e)), that should appear clearly separated from each other.	Pass. All the related information is stated in the instruction handbook
6.5.2	Production of the instruction handbook	-
	a) type and size of print shall ensure the best possible legibility.	Pass. All the related information is stated in the instruction handbook
	Safety warnings and/or cautions should be emphasized b the use of colours, symbols and/or large print.	Pass. All the related information is stated in the instruction handbook
	b) information for use shall be given in the language(s) of the country in which the machine will be used for the first time and in the original version.	Pass. All the related information is stated in the instruction handbook

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	If more than one language are to be used, each language should be readily distinguished from the other(s), and efforts should be made to keep the translated text and the relevant illustration together.	Pass. All the related information is stated in the instruction handbook
	c) whenever helpful to the understanding, text should be supplemented with written details enabling , for instance, manual controls (actuators) to be located and identified; they should not be separated from the accompanying text and should follow sequential operations.	Pass. All the related information is stated in the instruction handbook
	d) consideration should be given to presenting information in tabular form where this will aid understanding. Tables should be adjacent to the relevant text.	Pass. All the related information is stated in the instruction handbook
	e) the use of colours should be considered, particularly in relation to components requiring quick identification.	Pass. All the related information is stated in the instruction handbook
	f) when information for use is lengthy, a table of contents and/or an index should be given.	Pass. All the related information is stated in the instruction handbook
	g) safety-relevant instructions which involve immediate action should be provided in a form readily available to the operator.	Pass. All the related information is stated in the instruction handbook
6.5.3	Advice for drafting and editing information for use	-
	a) relationship to model : the information shall clearly relate to the specific model of machine.	Pass. All the related information is stated in the instruction handbook
	b) communicate principles : when information for use is being prepared, the communication process “see-think-use” should be followed in order to achieve the maximum effect and should follow	Pass. All the related information is stated in the instruction handbook

Clause	EN ISO 12100:2010 Requirements	Compliance (Pass/Fail/Not applicable)
	sequential operations. The questions “how ?” and “why ?” should be anticipated and the answers provided.	
	c) information for use shall be as simple and as brief as possible, and should be expressed in consistent terms and units with a clear explanation of unusual technical terms.	Pass. All the related information is stated in the instruction handbook
	d) when it is foreseen that a machine will b put to non-professional use, the instructions should be written in a form that is readily understood by the non-professional users.	Pass. All the related information is stated in the instruction handbook
	If personal protective equipment is required for the safe use of the machine, clear advice should be given, e.g. on the packaging as well as on the machine, so that this information is prominently displayed at the point of sale.	Pass. All the related information is stated in the instruction handbook
	e) durability and availability of the documents : documents giving instructions for use should be produced in durable form (i.e. they should be able to survive frequent handling by the user).	Pass. All the related information is stated in the instruction handbook
	It may be useful to mark them “keep for future reference”.	Pass. All the related information is stated in the instruction handbook
	Where information for use is kept in electronic form (e.g. CD, DVD, tape) information on safety-related issues that need immediate action shall always be backed up with a hand copy that is readily available.	Pass. All the related information is stated in the instruction handbook

EN1494: 2000+A1: 2008 Mobile or movable jacks and associated lifting equipment			
Clause	**Requirement-Test**	**Result**	**Verdict**
1	scope		—
	This European Standard specifies technical safety requirements and measures for mobile or movable jacks (see 3.6) and associated lifting equipment. This European Standard deals with all significant hazards pertinent to mobile or movable jacks and associated lifting equipment when they are used as intended and under the conditions foreseen by the manufacturer. This European Standard specifies the appropriate technical measures to eliminate or reduce risks arising from the significant hazards.		P
4	List of hazards		—
	The list of hazards at table 1 are applicable in the situation described and could involve risk to persons if not reduced or eliminated. The corresponding requirements are designed to limit the risk or reduce these hazards in each situation.		—
5	Safety requirements		—
5.1	Braking device		—
5.1.1	General Jacks shall be designed or equipped in a way that the load can be restrained and held. Unintentional descent shall be prevented. This requirement may be fulfilled e.g. by a) self-blocking drives for manual driven jacks and self-braking drives-for power driven jacks;		P

	b) automatic brakes; c) a load pressure brake in conjunction with a blocking device, e. g. automatically engaging pawls; d) non-return valves at the supporting cylinder.		
5.1.2	Dimensioning		P
	Braking mechanisms shall be constructed in a way that the forces generated during braking can be safely restrained by the jack in any position of the load carrying device.		P
5.1.3	Interruption of the power flow		P
	There shall be no device between the load carrying device and the braking device which the can interrupt the power flow.		P
5.1.4	Automatic operation		—
	Braking mechanisms shall operate automatically after the control device has returned to the „Off“ position or when the drive power is interrupted or when the mechanisms described in 5.4 and 5.5.2.2 have responded.		—
5.1.5	Alterations		—
	Braking mechanisms shall be designed in a way that the operator cannot alter their constructionally defined effect without the aid of tools.		P
5.2	Security against dropping		P
	On manual driven hydraulic and pneumatic jacks it shall be possible for the operator to regulate the lowering speed or stop the lowering at any load up to the rated load.		P
5.3	Speeds		—
	The maximum admissible average speed of descend for a jack, loaded with the rated load, is 0,15 m/s.		P
5.4	Security against overloading		N
	Hydraulic and pneumatic jacks with a rated load of more than 100 kg and power driven mechanical jacks with a rated load of 1 000 kg at least shall be fitted with security devices against overloading.		P

	This requirement can be fulfilled e. g. by a) torque limiters; b) pressure relief valves; c) limitation of driving energy.		
5.5	Transmission systems		P
5.5.1	Security of guides		P
	Jacks shall be so equipped that rackstrips, spindles or pistons cannot unintentionally loosen from their guides. This requirement shall be fulfilled in the case of cylinders if the piston is mechanically prevented from coming out of the cylinder.		P
5.5.2	End stops		P
5.5.2.1	Limitation of end positions		—
	Each end position of jacks shall be limited mechanically or hydraulically. The forces generated when reaching the end positions shall be absorbed safely by the jacks. It shall not be possible to put these end-stop mechanisms unintentionally out of action.		—
5.5.2.2	End-stop mechanism		P
	If power-driven jacks are provided with an automatic end-stop mechanism to limit the upwards and downwards travel the movement in the opposite direction shall still be possible when the automatic mechanism has responded. Such end-stop mechanisms may be e. g. a) end-stop switches fulfilling the requirements of chapter 3 of EN 60947-5-1:1997 which are fitted in such a way that overshoot is taken into account, or b) slip-clutches which are fitted to limit the working travel safely, or c) pressure relief valves which are fitted in hydraulic or pneumatic systems to limit the working travel.		P
5.5.2.3	Height adaption spindle		P
	Load carrying devices fitted with a height adaption spindle shall be provided with an automatic operating spindle travel stop which prevents turning out.		-
5.5.3	Additional requirements for hydraulic jacks		P
5.5.3.1	Dimensioning		P
	Cylinders, pipes and their connections which can be exposed to the maximum pressure limited by the pressure relief valve shall resist at least 2 times this pressure without showing permanent deformations. Hoses and their connections shall be dimensioned to resist a bursting pressure that is at least 3		P

	times the set pressure of the pressure relief valve.		
5.5.3.2	Pressure relief valve		—
	A pressure relief valve shall be fitted between the pump and the non return valve. The adjustment of the pressure relief valve only shall be possible by means of tools and it shall be secured against unauthorized adjustment. The allowed tolerance of the adjustment is between 100 % and 125 % of the rated load. The pressure relief valve shall be adjusted to the lowest possible value.		P
5.5.3.3	Bleeding the hydraulic system		—
	In the hydraulic system means shall be provided to remove entrapped air.		—
5.5.3.4	Cleanliness of system medium		P
	Every refillable hydraulic system shall have adequate means (e.g. filters) to aid the proper and continued working of the safety devices.		P
5.5.3.5	Refilling hydraulic fluid		—
	Hydraulic jacks shall be provided with refilling openings to enable refilling without the spillage of hydraulic fluid.		N
5.5.3.6	Fluid tank To prevent gas cushion in the hydraulic cylinders the fluid tank shall contain the maximum displaced volume necessary to operate the cylinder at its full stroke, + 10 % at least.		N
5.5.3.7	Protection against escaping hydraulic fluid		—
	Apertures in jacks, e. g. those serving to limit the piston movement, and from which hydraulic fluid can escape during operation, shall be secured in such a way that persons cannot be injured by escaping hydraulic fluid.		N
5.5.3.8	Allocation of hoses and pipes		—
	All connecting parts the failure of which can endanger persons by escaping hydraulic fluid shall be adequately covered.		P
5.5.4.1	Additional requirements for pneumatic jacks		P
	Harmful effects of occasional condensation shall be avoided by proper design of the equipment or, where necessary, by proper additional measures.		P
5.6	Control devices		—
5.6.1	Hold to run control		P

	Control devices for setting power driven jacks in motion shall be of the hold-to-run type.		—
5.6.2	Unintentional operation		P
	Control devices for power driven jacks shall be protected against unintentional operation.		—
5.6.3	Identification		P
	The direction of movement caused by the control device shall be identified in a durable, unambiguous and easily recognisable manner. The direction of motion can be identified by symbols or words. The identification can be attached to the control device itself or immediately alongside it.		P
5.6.4	Obviousness		—
	For power driven jacks and - wherever possible for manual driven jacks - the direction of operation of the controls and of the movements they cause shall be arranged in an obvious relationship to one another.		P
5.6.5	Visibility		P
	The operator´s position shall give the operator a clear view of the hazardous parts of the jack and its load at all times through its vertical movement. If the operator´s position is not determined by the manufacturer.		—
5.6.6	Control devices of manually operated jacks		N
	Control devices of manually operated jacks shall be equipped in such a way that a) winding handles, levers, or wheels cannot turn back under load more than 15 cm, measured at the greatest radius of the control (reversal security). Reversal security shall not be necessary for hand-wheels if these take the form of complete smooth disc wheels shut and without any other handles; b) the direction of rotation of winding handles remains the same regardless of gearing, and c) removable winding handles, levers, and hand- wheels shall be secured against slipping and unintentional removal from the drive shaft. Requirement c) may be fulfilled e.g. − if securing mechanisms such as snap-in latches or locking springs are fitted or − for winding handles or levers up to a length of 250 mm if they can be pushed into their shafts at least to one-fifth of their own lengths		P

5.6.7	External power supply		—
	If an external power supply is used there shall be means to disconnect the power and to secure them against unallowed re-connection.		N
5.7	Combined manual and power-operated jacks		—
5.8	Requirements for safety mechanisms		N
5.8.1	Adjustments The braking device mentioned in 5.1, the security device against overloading mentioned in 5.4 and the reversal security device mentioned in 5.6.6 shall be designed and constructed in such a way that adjustment is impossible without the aid of tools.		—
5.8.2	Materials		P
	Ratchet pawls, fixing wheels, and similar locking mechanisms shall be so constructed that neither a breakage after a period of time or through brittleness need be feared nor plastic deformations occur by reason of the toughness of the material used.		N
5.8.3	Effects of weather and dirt		N
	The safety devices on jacks shall be constructed and fitted in such a way that they cannot be put out of action by the effects of the weather or by dirt when used as intended by the manufacturer. This requirement may be fulfilled e. g. by a) encapsulating; b) choice of material; c) design.		P
5.8.4	Breakage of springs		P
	Failure of a spring shall not make safety devices inoperative.		P
5.9	Lift pad		P
	The lift pad shall have a rough surface or be designed in such a way to counteract any tendency of the load to slip off. By design the projection of the lift pad shall always be within the tipping lines of the jack. This requirement does not apply to claws at the side of the jack.		P
5.10	Structural design		P

	All manual operated mechanical jacks defined within the scope of this standard shall be designed to withstand at least 150 % of the rated load in all critical modes at ambient temperature without showing permanent deformation of any part. For all other jacks the same requirement is valid with the exception that 150 % of the maximum possible load shall be taken into consideration.		
5.11	Climatic conditions		N
	The jacks shall be designed to work at rated load in a temperature range of -20 °C to +50 °C.		N
5.12	Hot surfaces		N
	If any parts of the driving system (e. g. hydraulic tanks, motors etc.) are designed to operate at a high temperature of above 55 °C, these parts shall be protected or positioned to avoid contact of persons.		—
5.13	Forces		—
	Maximum admissible forces for operating and translating the jack and methods to measure it see Annex C.		P
5.14	Protection against pinching and shearing		P
	Generally pinching and shearing shall be avoided by minimum gaps according to EN 349 and EN 811 between moving parts and between moving and fixed parts. As an alternative to these minimum gaps other safety measures can be taken to avoid the operator or any other persons being endangered, e. g. screens, barriers, deflectors, non-mechanically actuated trip devices complying with EN 61496-1:1997, mechanically actuated trip systems complying with category 1 of EN 954-1:1996, multiple controls requiring simultaneous operation. Some of these examples will not be sufficient by themselves in particular cases.		N
5.15	Electricity		P
	If an electrical power supply is used it shall conform to EN 60204-32.		P
5.16	Transport and installation equipment		—
	Movable jacks shall be so equipped that they can be transported and set up or fixed safely. The requirement that jacks can be transported safely shall be met if such devices with a weight of 10 kilos or more are provided with handles, carrying hooks, attachment loops or other means of attachment. The requirement shall also be met if the design of the jacks inherently guarantees safe		—

	handling and transport.		
5.17	Provisions for maintenance		—
5.17.1	Accessibility		P
	All bearing parts and all moving parts that require regular inspection shall be easily accessible.		N
5.17.2	Adjustment		N
	All screws, pins, bolts and similar parts shall have means for preventing self loosening. They shall allow adjustment if necessary.		N
5.18	Special requirements for hydraulic transmission jacks		—
5.19	Special requirements for trolley jacks		—
5.19.1	Guidance of the lift pad The lift pad shall remain horizontal throughout the travel of the lifting beam (see figure 4) and be free to rotate through 360° about a vertical axis.		N
5.19.2	Lowering of the load		N
	The lift pad shall return to its lowest position with no load and with no form of activation other than the control device.		N
5.20	Special requirements of pit jacks		N
5.21	Special requirements of jacks without integrated pump		N
6	Verification		—
6.1	General		—
6.1.1	Test		—
6.1.1	**Tests** The checks and tests to ensure that the jack complies with this standard shall consist of: a) design check (see 6.1.2); b) manufacturing check (see 6.1.3); c) visual verification (see 6.1.4); d) practical tests (see 6.1.5); e) electrical tests (see 6.1.6); f) final inspection before despatch (see 6.2).		P
6.1.2	**Design check**		P

	The design check shall verify that the requirements of this standard are fulfilled. It shall also be checked that: a) the drawings are available and complete and give the main dimensions of the jack; b) there is a description of the jack with the necessary information about it's capabilities; c) information is given concerning the materials and proprietary components used; d) diagrams of the hydraulic, pneumatic and electrical circuits are available and complete; e) instructions covering installation, commissioning, operating, maintenance and dismantling are available and complete. The documents shall give all the necessary information to enable the check of the calculation requirements.	
6.1.3	Manufacturing check The manufacturing check shall verify that: a) the jack has been manufactured in accordance with the checked documents and drawings; b) test certificates are available, e.g. for wire ropes, chains and hoses if used.	P
6.1.4	**Visual verification** It shall be visually verified that: a) all the marking specified in 7.2 have been affixed to the jack; b) the jack is in accordance with all the documentation provided by the manufacturer; c) the means of transport and installation conform to 5.16; d) there is no evidence of external leakage of hydraulic fluid; e) the instruction handbook described in 7.1 is provided.	P
6.1.5	**Practical tests** Practical tests, as detailed in B.1 for type testing and B.2 for individual machine final verification, shall be carried out to verify that: a) the jack is stable; b) the jack is structurally sound; c) all the functions of the jack can be safely and correctly carried out.	P
6.1.6	**Electrical tests** The electrical tests shall be carried out according to EN 60204-32, where applicable.	—

6.2	Individual final verification before despatch	P
6.2.1	Before despatch of each jack, a verification shall show that the jack satisfies the safety requirements of this standard. The results of this verification shall be recorded.	P
6.2.2	If a type test for the jack model has been carried out, then it is only necessary to functionally test: – each individual jack without load throughout its full travel; – each individual hydraulic/pneumatic jack with rated load throughout its full travel and also the correct functioning of the pressure relief valve; – on manually driven mechanical jacks at least 10 % of the series with the rated load throughout its full travel; – each individual power driven mechanical jack with 110 % of the rated load throughout its full travel.	P
6.2.3	Where the jack has not been type tested, the final verification shall consist of tests and verifications according to 6.1.2, 6.1.3, 6.1.4, 6.1.5 and 6.1.6.	P
7	Informations for use	P
7.1	**Instruction for use and instruction handbook** An operating and instruction handbook complying with 5.5 of EN 292-2:1991 shall be delivered by the manufacturer with each jack.	—
7.1.1	**General** The instruction handbook shall clearly describe the type and scope of the jack and state the standard to which it conforms. Further, it shall include at least the rules according to 7.1.2 to be followed by the user. Further, the following restrictions given in this standard and hints necessary according to this standard shall be contained:	P
7.1.2	Rules for operating The rules for operating shall include the following: the user shall work in accordance with the instruction handbook; it is necessary that the operator can watch the lifting device and the load during all movements; it is not allowed to work under the raised load until it is secured by suitable means; the operator shall be provided with all necessary information about training and about pumping and translating forces.	P
7.1.3	**Maintenance and repair** The rules for maintenance and repair shall include the following: _ when refilling the hydraulic system the characteristics of the hydraulic fluid used in the jack and the level of the hydraulic fluid as it is given by the manufacturer shall be observed; _ information about hoses;	P

	_ need to check the state of the markings and that the markings remain as the initial one; _ jacks shall be maintained and repaired in accordance with the manufacturers instructions. Such maintenance and repair shall be carried out by qualified persons; _ no modifications shall be carried out which adversly affect the compliance of the jack with this standard.	
7.2	Minimum marking Every jack shall be marked permanently and legibly on a non removable part of the device with the following information:	P
	manufacturer name and address; product code; serial number or batch code; year of manufacture; rated load; where the rated load depends on the configuration of the jack the rated loads shall be shown for each configuration on a load plate, preferably in diagrammatic form or by means of tables; all necessary hydraulic supply information if an external hydraulic power supply is used; all necessary pneumatic supply information if an external pneumatic power supply is used; all necessary electrical supply information if an external electric power supply is used; hint to residual risks.	P
Annex A	Noise For most machinery dealt with in this standard noise is not considered to be a significant hazard. This does however not absolve manufacturers of machines of the responsibility to provide information about the noise emission in the information for use of the machine.	P
	The A-weighted, time averaged emission sound pressure level at the work station shall be measured according to EN ISO 11201 throughout one complete cycle (lifting from ground position to maximum height and then lowering to ground position) with the jack loaded with rated load. The position of the work station shall be defined in accordance with 11.5 of EN ISO 11201:1995. If this value does not exceed 70 dB(A) this fact shall be stated in the manual. If this value exceeds 70 dB(A), the value declared in accordance with EN ISO 4871, using the dual-number format, shall be specified in the manual.	P
Annex B	Test procedures	--
B.1	Practical tests for Type Testing Procedure	---

B.1.1	**General**	---
a	Check the correct operation of the controls;	P
b	Check that the safety devices are functioning as intended	P
c	Operate the unloaded jack through one complete cycle;	P
d	Place the rated load distributed as specified by the manufacturer on the jack and operate it through one complete cycle. Record the maximum operating pressure in steady state for hydraulic and pneumatic drives;	P
e	Record the time taken to fully lower the jack while carrying the rated load. The average speed shall not exceed 0,15 m/s;	P
f	Leave the jack, still carrying the rated load, fully raised for 10 min. Measure and record the vertical descend of the jack in this time. Generally this descend shall not exceed 2 mm. On hydraulic jacks using mechanical linkages (e.g. trolley jacks) a maximum descend of 5 mm is admissible;	P
g	static overload Lift the lift pad without the load to half stroke position. Expose the jack positioned vertically to a vertical load of 150 % of the rated load in case of manual operated mechanical jacks 150 % of the maximum possible load in all other cases. Under this condition (height adaptation spindle turned to the highest position) it shall be possible to carry the load, to sustain it for a period of 15 minutes and to lower it. After this test the tested jack shall be dismantled to prove that no permanent deformation has occurred in any part.	N
h	dynamic overload For the following test the pressure relief valve of hydraulic and pneumatic jacks shall be neutralized. Position the jack vertically and apply a vertical load of 125 % of the rated load in case of manual operated mechanical jacks 125 % of the maximum possible load in all other cases. The jack shall then be capable of lifting and lowering this load through its entire stroke as for intended use. After this test the tested jack shall be dismantled to prove that no permanent Deformation has occurred in any part.	P
i	Manual forces; Manual forces shall be measured according to Annex C.	P
j	Over travel device;	P

	Operate the jack without load 10 times to the upper position until the over travel device is operating. No permanent deformation of any part is permissible.	
k	Test the load limiting device;	P
l	Check satisfactory operation of braking or holding devices according to the design, where fitted.	P
B.1.2	Additional tests for hydraulic jacks	---
	All types of hydraulic jacks can exist in principle also as pneumatic jack. For the pneumatic jacks the same additional tests as stated in B.1.2 shall be performed.	P
a	Stati test Store the jack at an ambient temperature of + (23 + 5) °C for at least 12 hours. Then expose it to its maximum possible load at nominal full stroke specified by the manufacturer, for at least 30 minutes. Within that time, generally a maximum lift pad lowering movement of 2 mm is admissible. On hydraulic jacks using mechanical linkages (e.g. trolley jacks) a maximum descend of 5 mm is admissible. The measurement is to start 5 minutes after applying the load. If an auxiliary load point is fitted then the jack or cylinder shall be subjected additionally to the above tests using the auxiliary load point to apply the load. Any lower maximum possible load of the auxiliary load point shall be used instead of the maximum maximum possible load to which it is attached.	P
b	Pressure reliefvalve Expose the jack to a load according to the set pressure of the pressure relief valve plus 5 %. Then the jack shall not be capable to lift this load but shall be able to sustain it. Then, pump the jack up to its full stroke without the load until the pressure relief valve operates. This pressure shall be recorded and shall not exceed 125 % of the rated load. This test shall be performed 10 times in a row. No failure of the pressure relief valve is admissible. On devices with hydraulic limitation of the end position the test shall be performed at 2/3 of the full stroke. At this test the piston shall be blocked by application of an external force. On devices with telescopic cylinder the stage with the smallest diameter shall be partially extended.	P
c	Safety device against pipe damage On jacks a breaking of the connection between cylinder and pump (hose, pipe) shall be simulated. The non-return valve on the jack shall respond. The load shall not come down more than 100 mm. It shall not be possible to reoperate the jack by the normal controls until proper measures are taken.	P
B.1.3	Additional tests for hydraulic jacks for road vehicles	---
	In addition to the tests according to B.1.1 and B.1.2 the following tests shall be performed:	P

a	Behaviour at temperatures Store the jack at + (50 + 5) °C for a min. period of 12 h. No visible leakage is admissible during this test. Then store the jack at - (20 + 2) °C for a min. period of 12 h. No visible leakage is admissible during this test. The jack shall be placed in its operating position on the test rig immediately after each of the above conditioning and shall be able to lift the rated load at each of the above temperatures through the full stroke specified by the manufacturer. Use the test rig as shown in figure B.1. Lever A is intended to simulate the travel of the axle to be lifted. Dimension h shall be adjusted in the way that lever A is horizontal when the jack is in the middle of its stroke. The area on lever A where the head of the jack is applied shall have a hardness of at least 285 HB and a surface roughness of Ra 6,3 m, to avoid slipping off.	P
b	Strength test The jack shall be capable to lift, to stop and to lower the rated load 50 times over the full stroke at a temperature of (23 + 5) °C, with the height adaptation spindle turned to the lowest position. Between each lift, there shall be a pause of 5 minutes. Lubrication after 10 strokes is allowed. After maintaining the rated load for 2 minutes, the height shall be checked after the last lift. This height shall be such that it proves that the nominal stroke quoted by the manufacturer is achieved with an acceptable tolerance of -2 mm.	P
c	Stability test Hydraulic jacks shall be placed on a 6° plate as figure B.2 and a load equivalent to 125 % of its rated load applied in the middle of the lift pad at 80 % of its maximum stroke, spindle not extended, for a period of 5 minutes. The jack shall show no permanent deformation and no failure of any part. Further it shall be verified by calculation that the vertically projected area of the lift pad is within the tipping lines when the jack is inclined by 6° in the worst condition.	P
B.1.4	Additional tests for trolley jacks	---
	In addition to the tests according to B.1.1 and B.1.2 and instead of the tests according to B.1.3 the following tests shall be performed:	P
1	Test: Operate the unloaded jack through one cycle. The lift pad shall remain horizontal over the whole stroke. It shall return to its lowest position without load by operating the normal controls for lowering.	P

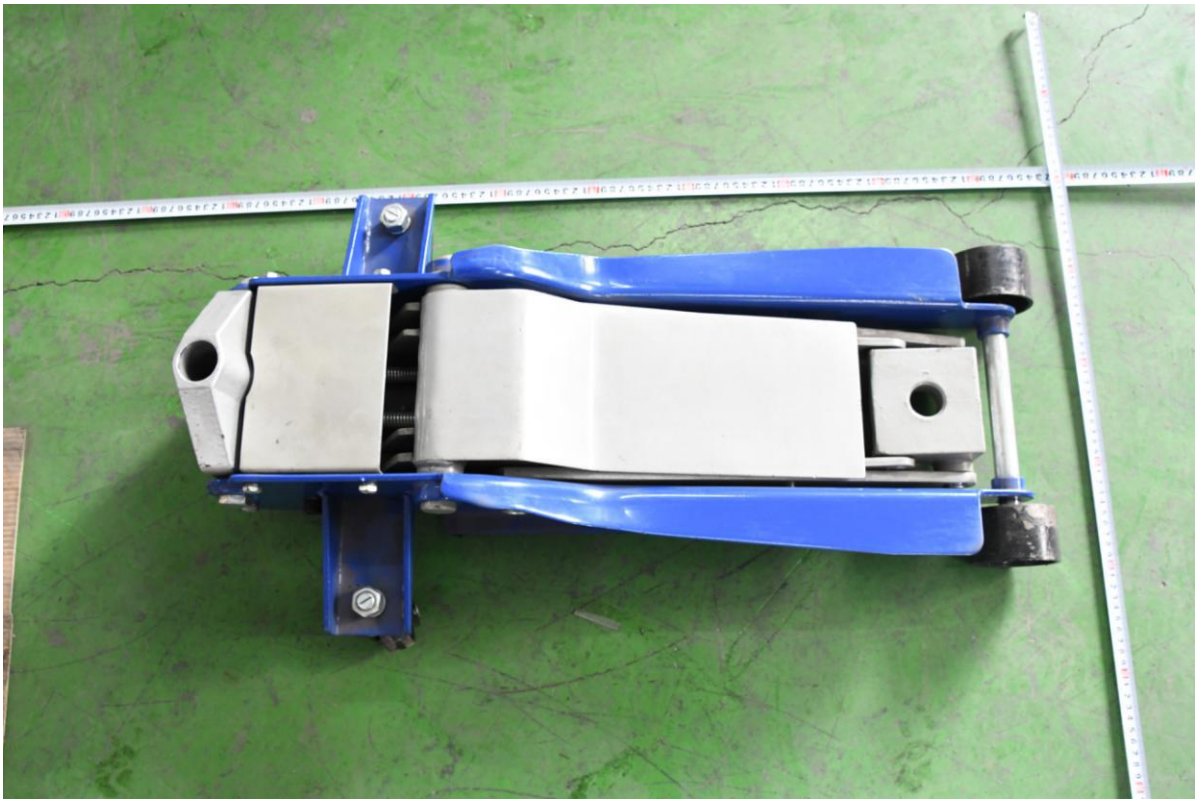
2	Test: Point-load outside the centre of the lift pad with the load displaced in transverse direction of the jack Lift the load from the lowest to the highest position. The test shall be performed twice while changing the load from one side to the other.	P
3	Test: Centric applied load on the trolley jack which is located with one front wheel on a 15 mm high sheet. Lift the load from the lowest to the highest position. The test shall be performed twice while the sheet is once located below the right and once below the left front wheel. Load: F = 0,75 x rated load Check under load that the trolley jack functions without restrictions. Check after removing the load that no permanent deformations are existing.	P
4	Test: Centric applied load on the trolley jack which is on one side located with one front wheel and one rear wheel on a 15 mm high sheet Lift the load from the lowest to the highest position. The test shall be performed twice while the sheet is once located below the right and once below the left side of the jack. Load: F = 0,75 x rated load Check under load that the trolley jack functions without restrictions. Check after removing the load that no permanent deformations are existing.	P
5	Test: Point-load outside the centre of the lift pad with the load displaced in longitudinal direction of the jack The load is lifted from the lowest to the highest position. The test shall be performed twice while changing the load from the front side to the rear side. Load: F = rated load Check under load in lowest, highest and mid-position of the lift pad that the trolley jack functions without restrictions declination of the lift pad ≤ 6° Check after removing the load that no permanent deformations are existing.	P
6	Test: Centric applied load on the trolley jack Lift the load from the lowest to the highest position and then lower it to the lowest	P

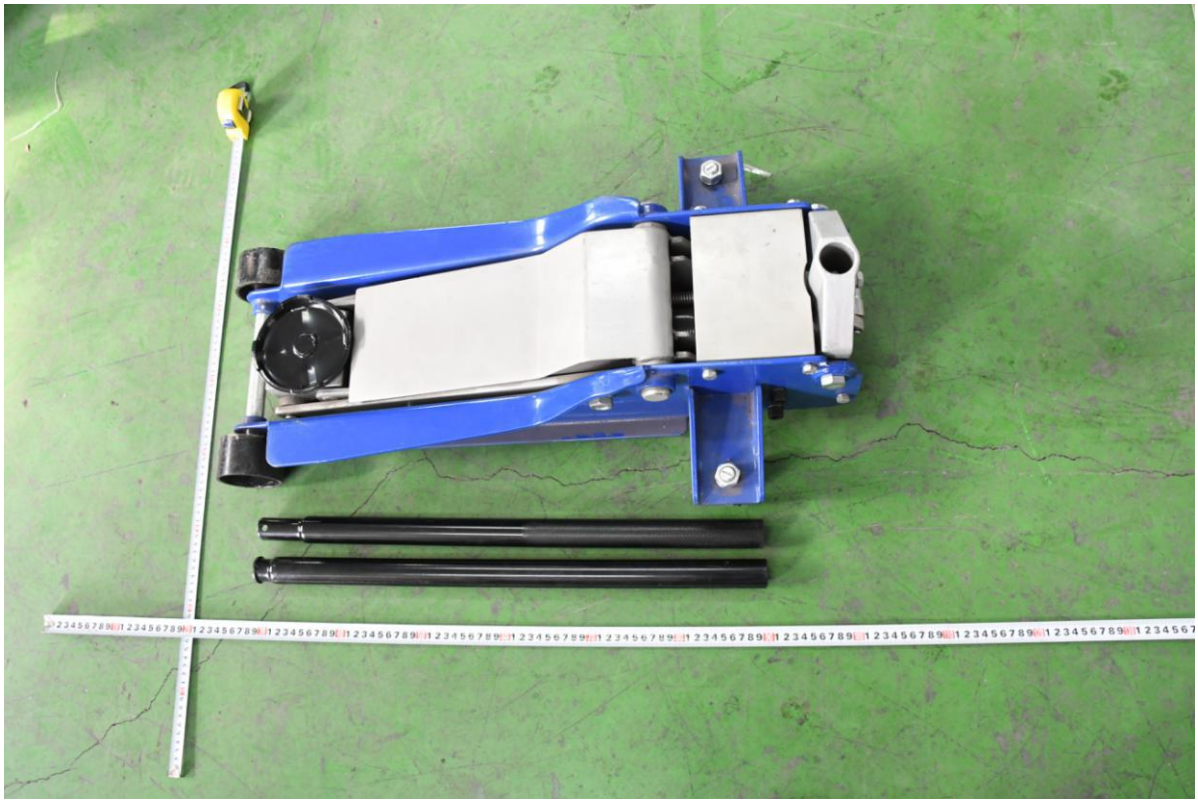
	position. The test shall be performed 50 times. Lubrication during the tests is admissible. Load: F = rated load Check under load that the trolley jack functions without restrictions 10 minutes after the last lifting the stroke shall not be less than the nominal stroke given by the manufacturer minus 5 mm. Check after removing the load that no permanent deformations are existing.	
B.2	Practical tests for fitness for purpose test when the jack has been type tested	---
a	Check the correct operation of the controls;	P
b	Check that the emergency stop and other safety devices (if fitted) are correctly functioning;	P
c	Operate the unloaded jack through at least one complete cycle;	P
d	Load the jack with 10 % more than the rated load and operate it through one complete cycle;	P
e	Test the load limiting device.	P
Annex C	Manual forces and manual force measurement methods	---
C.1	Maximum allowed forces	---
	The maximum manual forces required for jack operations (unloaded respectively loaded with rated load) shall not exceed the following figures: To start moving an unloaded movable or mobile jack: 300 N To maintain the movement of the unloaded jack: 200 N To start moving a loaded mobile jack: 400 N To maintain the movement of the loaded mobile jack: 300 N	P
	To raise the loaded jack using the lever of a hand pump: 400 N To raise the loaded jack using a foot pump: 400 N To raise the loaded jack with a rated load ≤ 5 t using a crank: 250 N To raise the loaded jack with a rated load > 5 t using a crank: 400 N. If the generated efforts exceed these values, the efforts shall be lowered by additional persons.	P
C.2	Conditions for test	---

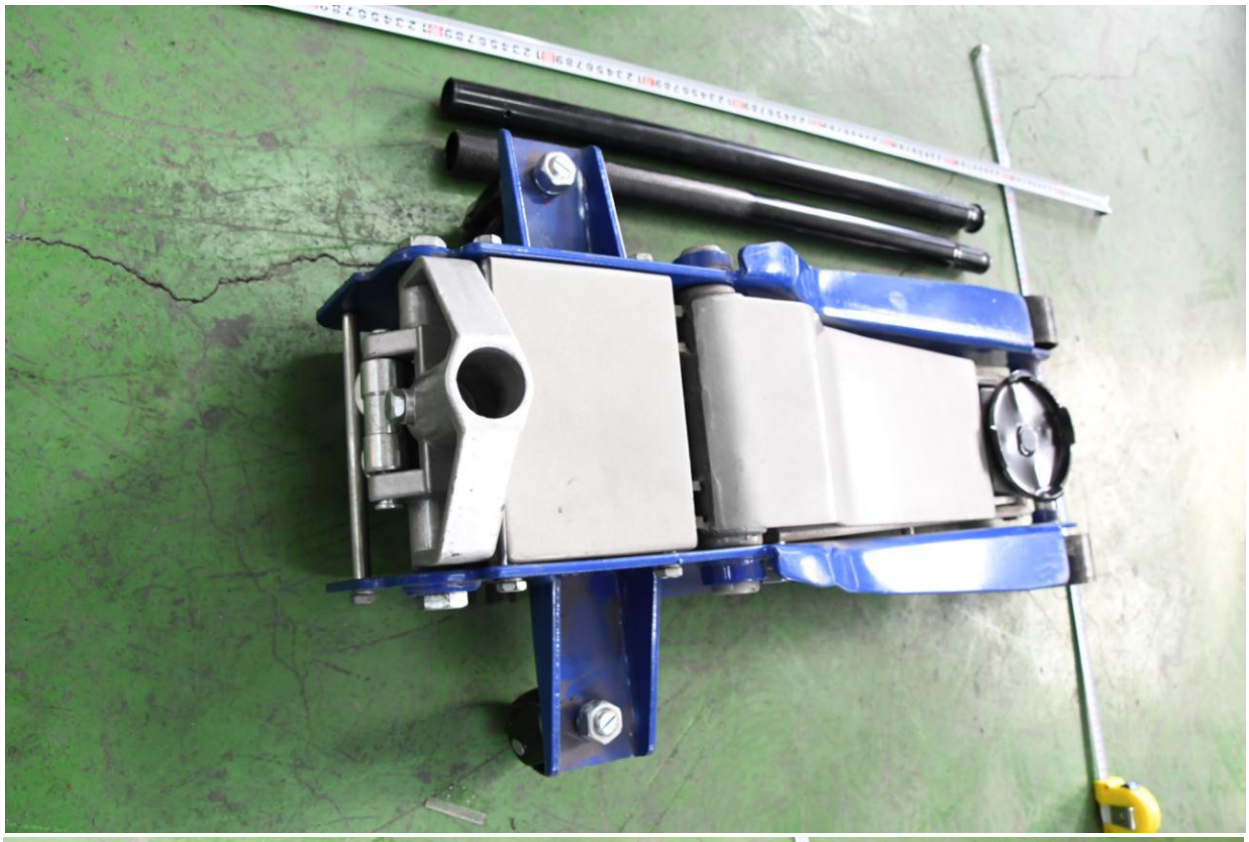
	The tests shall be carried out with a new jack on a smooth, dry, level, trowelled finish concrete floor in good condition. The tests shall be carried out in an ambient temperature of between 15 °C and 28 °C. The measuring instrument used shall have a range of error of +3 %. The forces required are measured in accordance with the methods described below. Two tests in both the forward and reverse directions shall be carried out and the average result recorded.	P
C.3	Measurement of starting force and rolling force	---
	With the unloaded jack in starting position and stationary, the wheels are positioned in the direction that they naturally take when moving the jack in the test direction. The force shall be applied horizontally along the jack's axis, on the handle or bar in the test direction.	P
C.4	Starting force	---
	The maximum value necessary to start the jack moving shall be recorded.	P
C.5	Rolling force	---
	The maximum value necessary to maintain the jack at a stabilised speed of 0,5 m/s shall be recorded.	P
C.6	Average forces	---
	The maximum starting force or the maximum rolling force is the average of the maximum values recorded in each direction of travel, forward and reverse, during two successive tests.	P
C.7	Hand or foot forces	---
	Actuate the handle or foot pedal as many times as necessary raise the fully loaded jack to its maximum height. The maximum force value is measured perpendicularly to the handle or pedal during each pumping cycle. The maximum force value is the average of the maximum values recorded at each handle or pedal cycle during one complete lifting.	P
Annex ZA	Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC.	---
	This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 2006/42/EC., amended by 2006/42/EC. on machinery.	P
	Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant	P

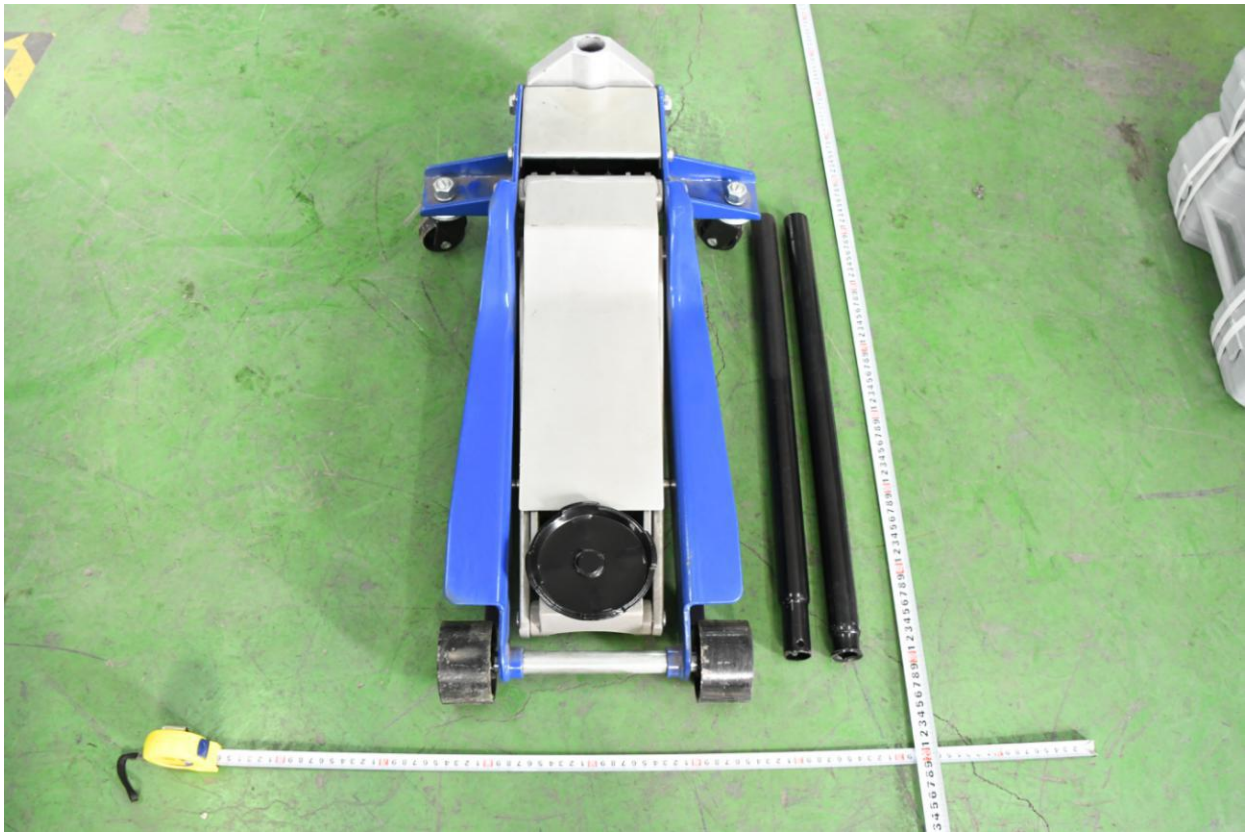
	Essential Requirements of that Directive and associated EFTA regulations.	
	WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard	P
Annex ZB	Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC	---
	This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 2006/42/EC.	P
	Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of that Directive and associated EFTA regulations.	P
	WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.	P

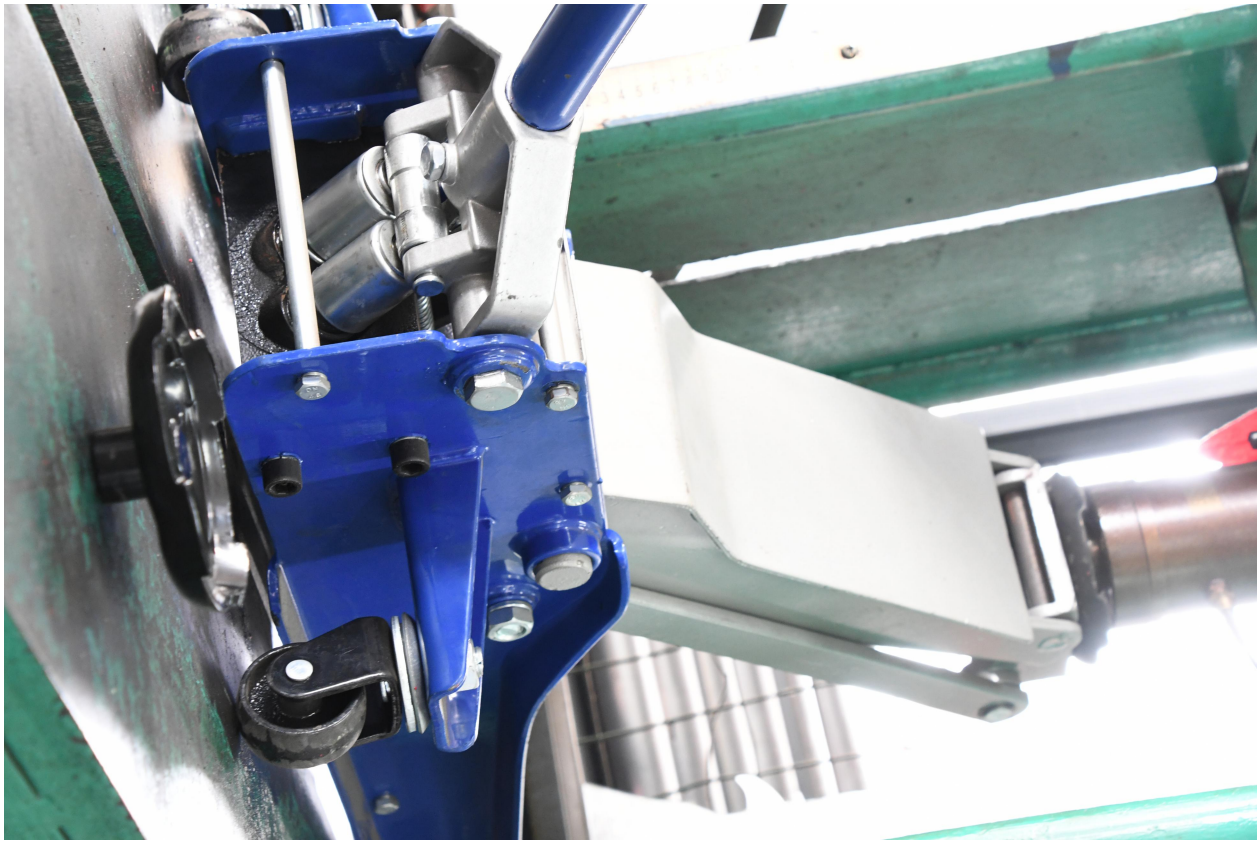
Picture of products:

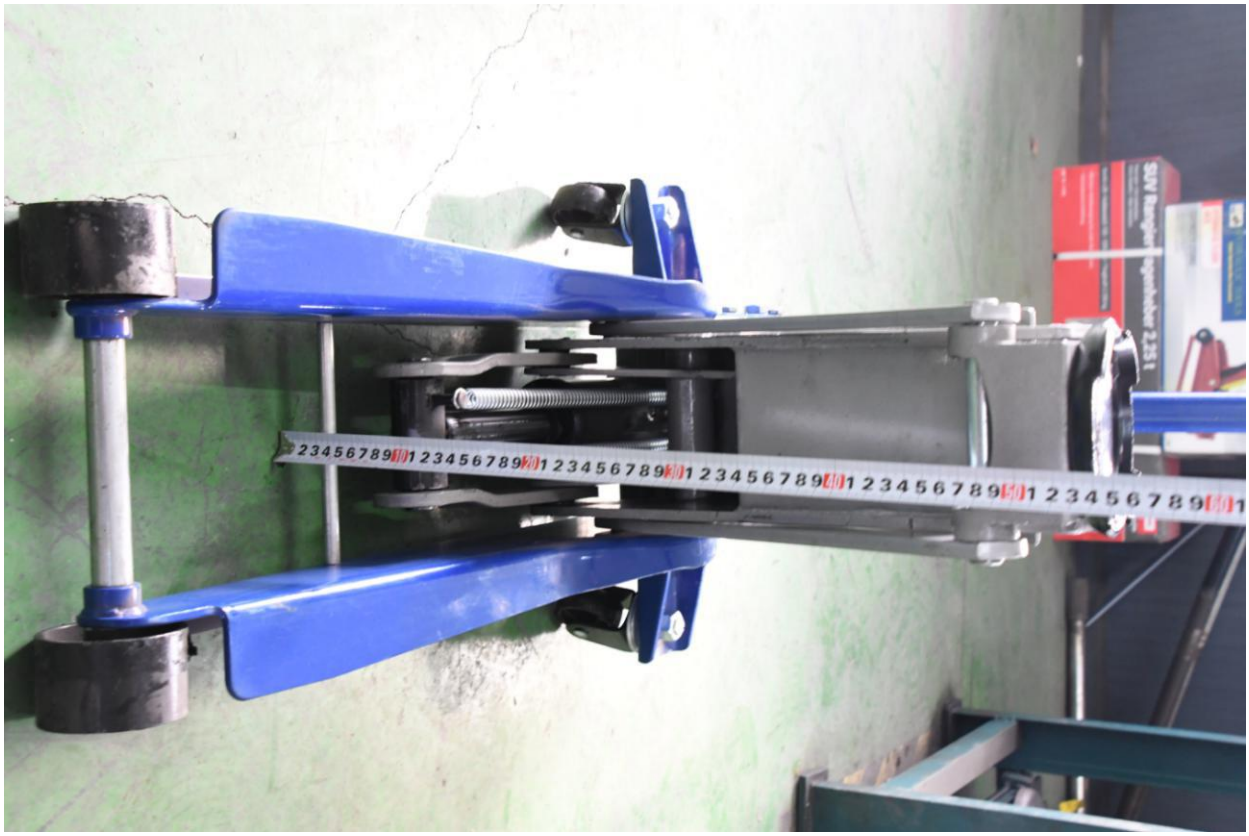


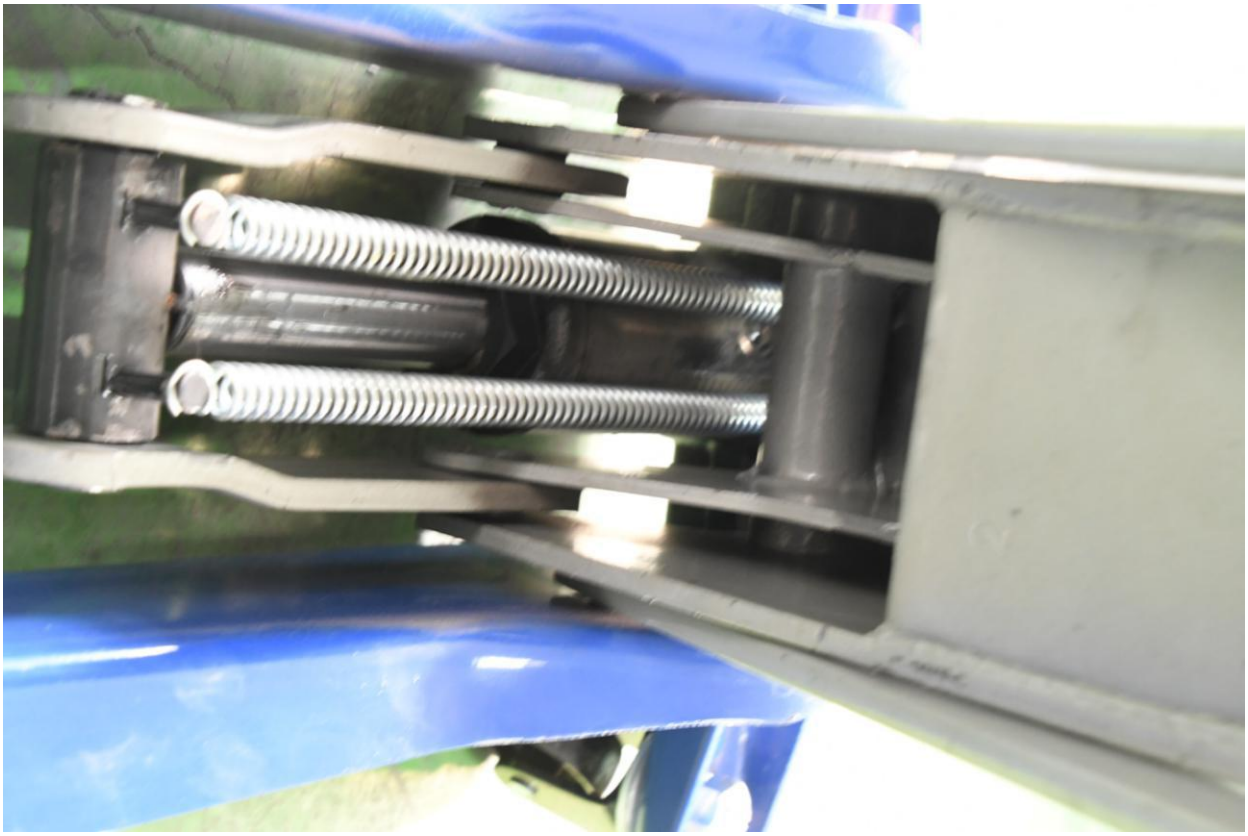


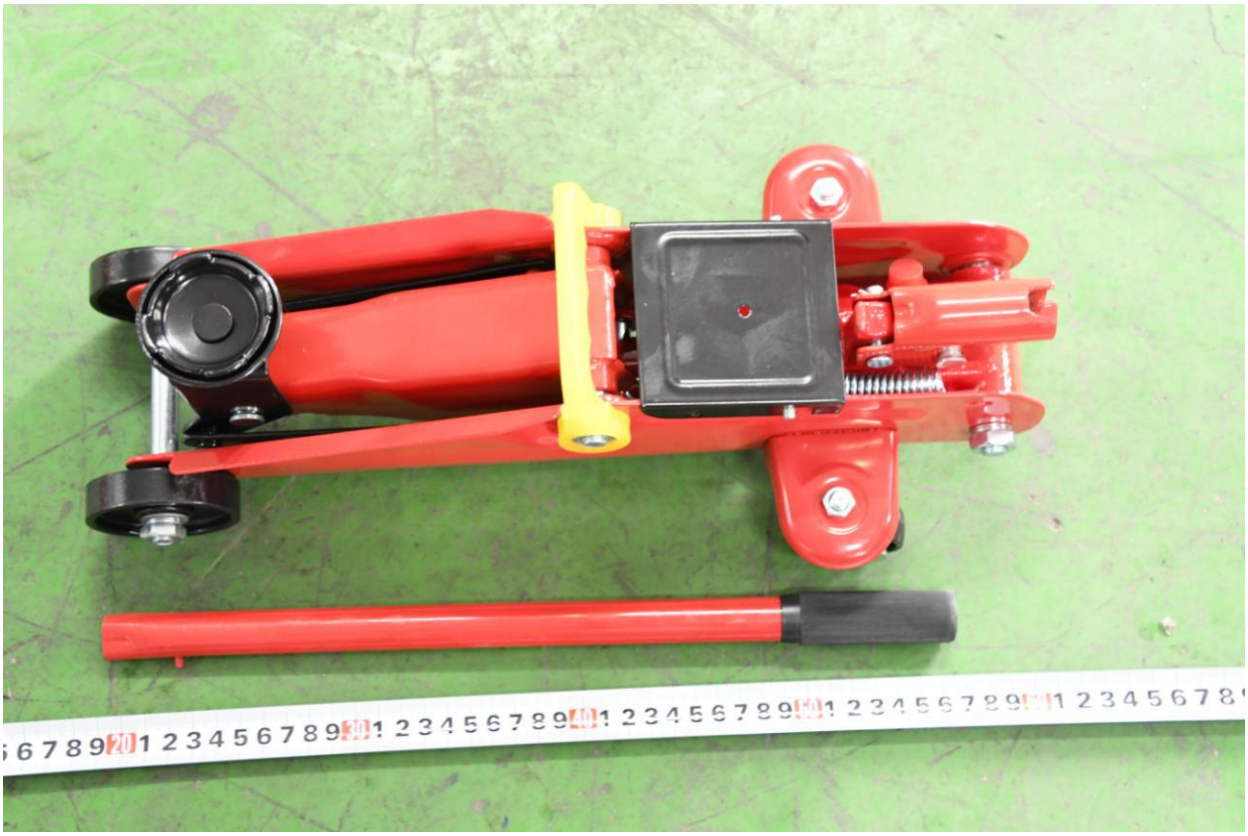


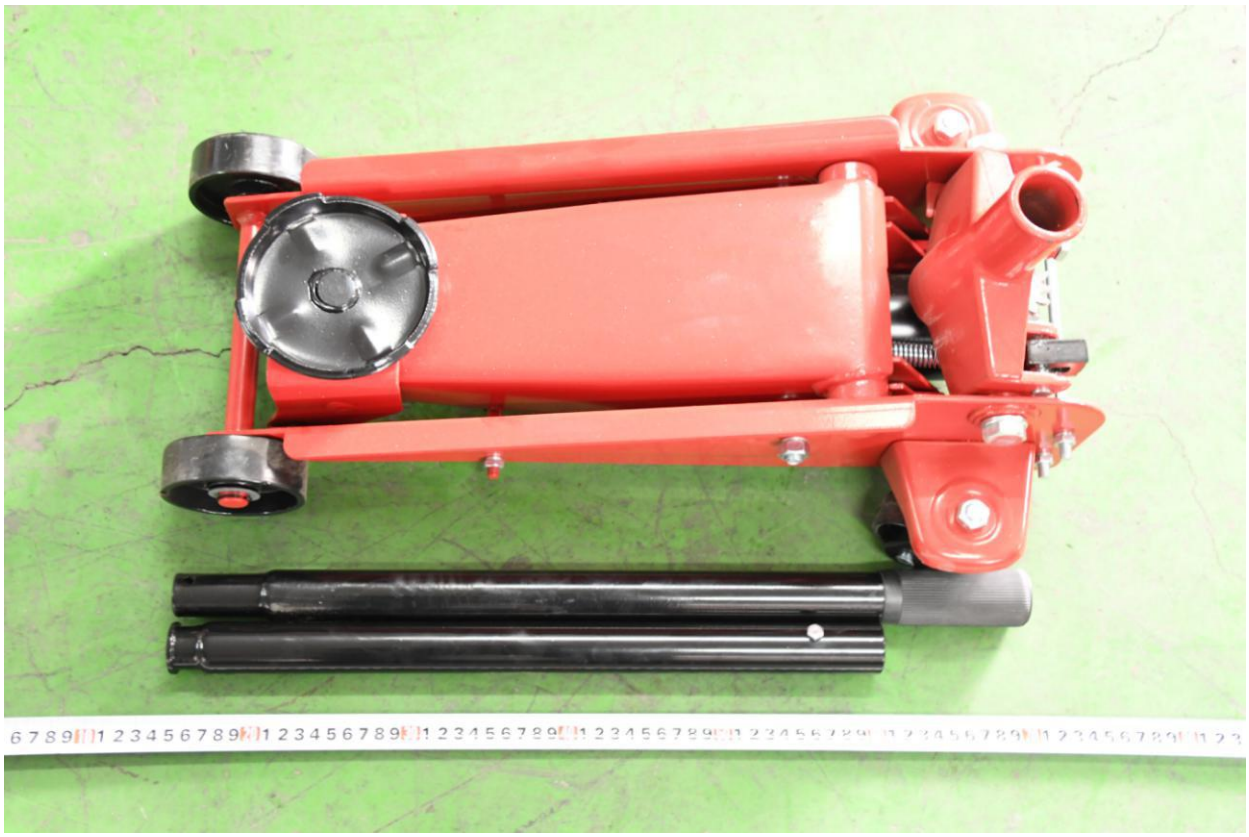












EC DECLARATION OF CONFORMITY

According to the following EC Directives,

Machinery Directive: 2006/42/EC

The undersigned, Jin Jianfen , representing

JIAXING JINRISHENG TOOLS CO.,LTD

NO.186 JIULONG ROAD CAOQIAO STREET PINGHU CHINA(314200)

FLOOR JACK

Type:：

QJD60A(1T),QJD60A(2T),QJD60A-1(1T),QJD60A-1(1.5T),QJD60A-1(2T),QJD60A-2(1T),QJD60A-2(1.5T)QJD60A-2(2T),QJD61A-1(2T),QJD61A-1(2.5T),QJD61A-2(2T),JD61A-2(2.5T),QJD61B-1ONE(2T),QJD61B-1TWO(2T),QJD61B-2ONE(2T),QJD61B-2TWO(2T),QJD61-3A-1(2.5T),QJD61-3A-2(2.5T),QJD61-5A-1(2.5T),QJD61-5A-2(2.5T),QJD62A(3T),QJD63A(3T),QJD63A-with pedal(3T),QJD63BA(3T),QJD64A(3T),QJD64A(4T), QJD64A-with pedal(3T),QJD64A-withpedal(4T),QJD64A-1(3T),QJD64A-1(4T),QJD64A-3(3T),QJD64A-3(4T),QJD64A-5(3T),QJD64A-5(4T),QJD64A-6(3T),QJD64A-6(3.5T),QJD64A-6(4T),QJD64A-7(3T),QJD64A-8(3T),QJD73A(3T), QJD73A(3.5T), QJD73A(4T)

Provided that it is used and maintained in accordance with the general accepted codes of good practice and the recommendations of the instructions manual, meet the essential safety and health requirements of the Machinery Directive and Low Voltage Directive. For the most specific risks of this machine, safety and compliance with the essential requirements of the Directive has been based on elements of :

EN ISO 12100: 2010	**Safety of machinery — GenerSafety of machinery — General principles for design — Risk assessment and risk reductional principles for design — Risk assessment and risk reduction**
EN1494:2000+A1: 2008	**Mobile or movable jacks and associated lifting equipment**

The technical files are compiled by:

Date: 2020-03-12

Signature: Jin Jianfen

Qualification:

END OF REPORT