

Sign certificate acknowledgement

签发证书最终确认表

Name and address of the Manufacturer 工厂的名称和地址	Wenzhou Huaqiao Packing Machine Factory 温州市华侨包装机械厂 No. 439, Binhai Fourth Road, Economic & Technological Development Zone, Wenzhou, Zhejiang, China 中国浙江省温州经济技术开发区滨海4路439号
Name and address of the Applicant (If it is necessary) 申请商名称和地址 (如果需要的话)	Wenzhou Huaqiao Packing Machine Factory 温州市华侨包装机械厂 No. 439, Binhai Fourth Road, Economic & Technological Development Zone, Wenzhou, Zhejiang, China 中国浙江省温州经济技术开发区滨海4路439号
Product Name 产品名称	Sealing Machine 封口机
Trademark (If necessary) 商标 (如果需要)	N/A
Models (put it as annex if necessary) 型号 (如果必要可以做个附件)	SF-150W, SF-150LD, SF-150LW, FRM-980W, FRM-980LD, FRM-980LW, FRD-980AI, FRD-980AIII, FRQM-980C, SF-150WH, SF-150SD, FRQM-980CD
Directive and standard 申请的指令和标准	MD: EN 415-3, ISO 12100, EN 953, EN 614-1, EN 1037, ISO 3864-1, EN ISO 13849-1, EN ISO 13849-2 LVD: EN 60204-1
REMARK 其他需要说明信息	NO

NOTE: We will issue the certificate referring the above information, please pay attention the necessary information must be correct and accurate.

注意：我们将参考以上的基本信息签发证书，请注意以上的信息必须是正确和准确的。

签字:

朱华

盖章:



Contents

General information

Part I : General

- 1.1 General description
- 1.2 The certificate of relevant components
- 1.3 Applicable standard

Part II : Assessment of conformity

- 2.1 Essential health and safety requirements
- 2.2 ISO 12100 test report

Part III: Test report

- 3.1 EN 415-3 test report
- 3.2 EN 60204-1 test report
- 3.3 Airborne noise test report

Annex: Technical information

- A.1 Declaration of conformity with signature
- A.2 Specifications table
- A.3 Safety pictures
- A.4 Mechanical drawing
- A.5 Electrical system
- A.6 Instruction manual

General information

General Information

Applicant	Wenzhou Huaqiao Packing Machine Factory No. 439, Binhai Fourth Road, Economic & Technological Development Zone, Wenzhou, Zhejiang, China
Manufacturer	Wenzhou Huaqiao Packing Machine Factory No. 439, Binhai Fourth Road, Economic & Technological Development Zone, Wenzhou, Zhejiang, China
Trademark	N/A
Product	Sealing Machine
Model No.	SF-150W, SF-150LD, SF-150LW, FRM-980W, FRM-980LD, FRM-980LW, FRD-980AI, FRD-980AIII, FRQM-980C, SF-150WH, SF-150SD, FRQM-980CD
Rated Voltage	AC220V
Rated Frequency	50Hz/60Hz
Specifications	See the Specification tables listed in Annex A.2
Equipment Mobility	Stationary
Duty Cycle	Continuous
File No.	HQ-150803
Issued Date	Aug. 29, 2015

Part I : General

1.1 General description

1.2 The certificate of relevant components

1.3 Applicable standard

1.1 General description

General Description

Sealing machine is suitable for sealing and bag-making of various plastic and compound films and is a best sealing equipment to be widely used in such sectors as food, pharmaceutical, chemical industry, daily cosmetics, native and special local products, vegetable seeds, electronic components etc..

1.2 The certificate of relevant components

Zertifikat

Certificate



Zertifikat Nr. *Certificate No.*
R 09839329

Blatt *Page*
0006

Ihr Zeichen *Client Reference*
8293900213/MW

Unser Zeichen *Our Reference*
ZTW2-WLE- 09865743 005

Ausstellungsdatum
04.11.2008

Date of Issue
(day/mo/yr)

Genehmigungsinhaber *License Holder*

Tend Technology Co., Ltd.
10F, No. 103-1
Sec. 4, San Ho Road
San Chung City, Taipei 241
Taiwan, R.O.C.

Fertigungsstätte *Manufacturing Plant*

Tend Technology Co., Ltd.
No. 12, Lane 142
Sec. 3, Mingfu Rd.
Yangmei Jeng, Taoyuan Hsien 326
Taiwan, R.O.C.

Prüfzeichen *Test Mark*



Geprüft nach *Tested acc. to*

EN 60947-1:2007
EN 60947-4-1:2001+A1+A2

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Schütz (Magnetic Starters)

Wie Blatt (As Page) 01

Zusammenfassung aller Bezeichnungen von Blatt 01 bis 05
(Summary of all Type Designation from Page 01 to 05)

Bezeichnung : TMX1X2X3X4
(Type Designation)

X1 steht für : R oder (or) S
(stands for)

X2 steht für : 11, 16, 21, 30, 35 oder (or) 40
(stands for)

X3 steht für : 2 oder (or) freibleibend (blank)
(stands for)

X4 steht für : A, B oder (or) freibleibend (blank)
(stands for)

Hinweise : Bemessungswerte für Haupt- und Hilfsstromkreise,
siehe Anlage 1

(Remark : Rated values for main and auxiliary circuits,
see appendix 1)

ANLAGE (Appendix): 1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulation. The product
fulfills above mentioned requirements, the production is subject to surveillance.



Zertifizierungsstelle

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln

Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Dipl.-Ing. B. Scheirer

C E R T I F I C A T E



of Conformity
Low Voltage Directive 2006/95/EC

Registration No.: AN 50118023 0001

Report No.: 15024972 001

Holder: SEW-Motors(Suzhou) Co., Ltd.
No.155, Su Hong Zhong Lu,
Suzhou Industrial Park,
Jiangsu
P.R. China

Product: Motor
(Three-phase Induction Motor)

Identification: Type Designation: DT71K4 DT71C4 DT71D4 DT80K4
DT80N4 DT90S4 DT90L4 DV100M4
DV100L4

Serial No.: n.a.

Remark: Refer to test report 15024972 001 for details.

This certificate of conformity is based on an evaluation of a sample of the above mentioned product. Technical Report and documentation are at the Licence Holder's disposal. This is to certify that the tested sample is in conformity with all revision of Annex I of Council Directive 2006/95/EC, in its latest amended version, referred to as the Low Voltage Directive. This certificate does not imply assessment of the series-production of the product and does not permit the use of a TÜV Rheinland mark of conformity. The holder of the certificate is authorized to use this certificate in connection with the EC declaration of conformity according to Annex III of the Directive.



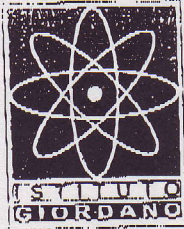
Certification Body

Cologne, 29.11.2007

P. Hartstein
Dipl.-Ing. P. Hartstein

TÜV Rheinland Product Safety GmbH - Am Grauen Stein - D-51105 Köln

CE The CE marking may be used if all relevant and effective EC Directives are complied with. CE



ISTITUTO GIORDANO S.p.A.

SINCE 1959 RESEARCHES AND CERTIFICATIONS EXPERTS

Headquarters

Via Rossini, 2
47814 BELLARIA (RN) Italy
Tel: 0039-0541-343030
Fax: 0039-0541-345540
istitutogiordano@giordano.it

www.giordano.it/CIN

Shanghai representative office

Rm. 2401, Yuyuan Rd., No.172,
Shanghai, China 200040
Tel: 0086-21-32140386
Fax: 0086-21-32140386
Info@igchina.com

OFFICIAL ACKNOWLEDGEMENTS:

"Notified Body" no. 0407 for the following European Directives:

- European Directive 94/25/EC concerning recreational crafts.
- European Directive 98/37/EC relating to machinery.
- European Directive 88/378/EEC concerning the safety of toys.
- European Directive 92/42/EEC on efficiency requirements of new hot water boilers fuelled by combustible or gaseous liquids.
- European Directive 90/269/EEC relating to appliances burning gaseous fuel.
- European Directive 87/404/EEC relating to simple pressure vessels.
- European Directive 97/23/EC concerning pressure equipment.
- European Directive 1999/36/EC on transportable pressure equipment.
- European Directive 89/106/EEC relating to construction products.
- European Directive 2000/14/EC on acoustics emission in the environment for machinery and equipment.
- European Directives 98/36/EC and 98/85/EC on the evaluation of maritime equipment.

MEMBERSHIP OF INTERNATIONAL SOCIETIES:

- ALPI - Association of Independent Test Laboratories.
- ASHRAE - American Society of Heating, Refrigerating and Air Conditioning Engineers Inc.
- ASTM - American Society for Testing and Materials.
- EA - European co-operation for Accreditation.
- EARMA - Research Association for Managers and Administrators.
- EARTO - European Association of Research and Technology Organisations.
- EGOLF - European Group of Official Laboratories for Fire Testing.
- IAF - International Accreditation Forum.
- IFT (Institut für FensterTechnik e.V.): Laboratory testing and surveillance at company on product certification procedures for the release of the "IFT-IG" Quality Mark on burglar-resistance doors.
- ICIM (Mechanics Institute of Industrial Certification): Testing of product certification schemes and releases the "ICIM Mark".
- ILAC - International Laboratory Accreditation Cooperation.
- IMQ (Institute of Quality Marking): Testing of certification schemes for the end product and releases the "IMQ-CIG

CERTIFICATE

No. 27605/362/C

Contract No. CHIG0411229

This is to certify that the products identified below are in compliance with the essential requirements of following standards, according to European Directive 73/23/EEC (LVD).

Description:

INDUCTION MOTOR (Three-Phase)

Models/Types*:

AEEF, AEVF

电机

Standards:

EN 60034-1:1998, EN 60034-5:2001

Applicant:

SHANGHAI LIANG CHI INDUSTRY CO.,LTD.

Address:

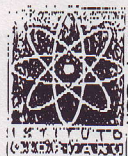
No.1020, Xin Zhu Road, Minhang District, Shanghai, P.R. China

On the basis of this certificate and according to the procedures established by European Directive 73/23/EEC (LVD) the Manufacturer can proceed with the CE marking of the above mentioned products signing the declaration of conformity and affixing the following symbol

CE

ok

电机



Annex to

CERTIFICATE No. 27605/362/C

Product: INDUCTION MOTOR (Three-Phase)

1.3 Applicable standard

List of applicable regulations and standards

Regulations

Machinery Directive (2006/42/EC)

Low Voltage Directive (2006/95/EC)

Standards

- EN 415-3:1999+A1:2009 Safety of packaging machines - Part 3: Form, fill and seal machines.
- ISO 12100:2010 Safety of machinery — general principles for design — risk assessment and risk reduction.
- EN 60204-1:2006+A1:2009 Safety of Machinery – Electrical equipment of machines –
Part 1: General requirements.
- EN 953:1997+A1:2009 Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards.
- EN 614-1:2006+A1:2009 Safety of machinery - Ergonomic design principles - Part 1: Terminology and general principles.
- EN 1037:1995+A1:2008 Safety of machinery - Prevention of unexpected start-up.
- ISO 3864-1:2011 Graphical symbols -- Safety colours and safety signs -- Part 1: Design principles for safety signs and safety markings.
- EN ISO 13849-1:2008 Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design.
- EN ISO 13849-2:2008 Safety of machinery - Safety-related parts of control systems - Part 2: Validation.

Part II : Assessment of conformity

2.1 Essential health and safety requirements

2.2 ISO 12100 test report

2.1 Essential health and safety requirements

Essential health and safety requirements

TEST REPORT NO.: HQ-150803-1

Page 1 of 27

Clause	Requirement – test	Result	Verdict
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.	These specified requirements have been complied with.	Pass
	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.	Appropriate measures have been taken to eliminate or reduce those existed risks.	Pass
b)	In selecting the most appropriate methods, the manufacturer must apply the following principles, in the order given;	-	-
	-Eliminate or reduce risks as far as possible;	The measures have been taken to eliminate or reduce risks as far as possible.	Pass
	- Take the necessary protective measures in relation to risks that can't be eliminated;	Appropriate guards and warning signs are used.	Pass
	- 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.	The related safety information for the users to operate the machine has been included in the instruction manual.	Pass
c)	When designing and constructing machinery and when drafting the instructions, the manufacturer or his authorized representative must envisage not only the intended use of the machinery but also any reasonably foreseeable misuse thereof.	All safety principles have been taken into account as far as possible during the design of these machines.	Pass
	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.	These requirements have been complied with, and the related information also has been provided within the instruction manual.	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	These requirements have been taken into account during the design of this machine.	Pass

Clause	Requirement – test	Result	Verdict
	foreseeable use of personal protective equipment.		
e)	When designing and constructing machinery, the manufacturer must taken account of the constraints to which the operator is subject as a result of the necessary or foreseeable use of personal protection equipment.	Suitable instructions for the use personal protection equipment are indicated in the instruction manual.	Pass
f)	Machinery must be supplied with all the essential special equipment and accessories to enable it to be adjusted, maintained and used without risk.	These related accessories have been supplied.	Pass
1.1.3	Materials and products	-	-
	The materials used to construct machinery or products used and created during its use must not endanger exposed persons' safety or health	Materials and products cannot endanger exposed person's safety or health.	Pass
	In particular, where fluids are used, machinery must be designed and constructed for use without risks due to filling, use, recovery or draining.	No any fluids has been used.	N/A
1.1.4	Lighting	-	-
	The manufacturer must supply integral lighting suitable for the operations concerned where its lack is likely to cause a risk despite ambient lighting of normal intensity.	No any integral lighting has been used.	N/A
	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.	No this situation.	N/A
	Internal parts requiring frequent inspection, and adjustment and maintenance areas, must be provided with appropriate lighting.	No this situation.	N/A
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,	All of them are capable of being handled safely.	Pass
	- be packaged or designed so that it can be stored safely and without damage	The machinery can be stored safely and without damage.	Pass
	During the transportation of the machinery and/or its component parts, there must be no possibility of sudden movements or of hazards due to instability as long as the machinery and/or its component parts are handled in accordance with the instructions.	There are no possibility of sudden movements or of hazards due to insability as long as the machinery and/or its component parts are handled.	Pass
	Where the weight, size or shape of machinery or	-	-

Essential health and safety requirements

TEST REPORT NO.: HQ-150803-1

Page 3 of 27

Clause	Requirement – test	Result	Verdict
	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, or	Not applicable.	N/A
	- Be designed so that it can be fitted with such attachments, or	It has been complied with.	Pass
	- Be shaped in such a way that standard lifting gear can easily be attached	Not applicable.	N/A
	Where machinery or one of its component parts is to be moved by hand, it must:	-	-
	- Either be easily movable, or	Not applicable.	N/A
	- Be equipped for picking up and moving in complete safety	Not applicable.	N/A
	Special arrangement must be made for the handling of tools and/or machinery parts, even if lightweight, which could be dangerous.	No this kind of situation.	N/A
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 principles such as:	Ergonomic principles have been considered when design.	Pass
	- allowing for the variability of the operator's physical dimensions, strength and stamina,	The requirement has been complied with.	Pass
	- providing enough space for movements of the parts of the operator's body,	The requirement has been complied with.	Pass
	- avoiding a machine-determined work rate,	The requirement has been complied with.	Pass
	- avoiding monitoring that requires lengthy concentration,	The requirement has been complied with.	Pass
	- adapting the man/machinery interface to the foreseeable characteristics of the operators.	The requirement has been complied with.	Pass
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.	The requirement has been complied with.	Pass
	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	No this kind of situation.	N/A

Clause	Requirement – test	Result	Verdict
	conditions and is protected against any foreseeable hazards.		
	Where appropriate, the operating position must be fitted with an adequate cabin designed, constructed and/or equipped to fulfill the above requirements. The exit must allow rapid evacuation. Moreover, when applicable, an emergency exit must be provided in a direction which is different from the usual exit.	No this kind of situation.	N/A
1.1.8	Seating	-	-
	Where appropriate and where the working conditions so permit, work stations constituting an integral part of the machinery must be designed for the installation of seats.	No this kind of situation.	N/A
	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.	No this kind of situation.	N/A
	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.	No this kind of situation.	N/A
	If the machinery is subject to vibrations, the seat must be designed and constructed in such a way as to reduce the vibrations transmitted to the operator to the lowest level that is reasonably possible. The seat mountings must withstand all stresses to which they can be subjected. Where there is no floor beneath the feet of the operator, footrests covered with a slip-resistant material must be provided.	No this kind of situation.	N/A
1.2	Control systems	-	-
1.2.1	Safety and reliability of control systems	-	-
	Control systems must be designed and constructed so that they are safe and reliable, in a way that will prevent a dangerous situation arising.	All related safe and reliable technologies have been used adequately for these machines.	Pass
	Above all they must be designed and constructed:	-	-
	- They can withstand the rigors of normal use and external influences	The whole control system can withstand the rigors of normal use and external factors.	Pass

Clause	Requirement – test	Result	Verdict
	- a fault in the hardware or the software of the control system does not lead to hazardous situations,	No this kind of situation.	N/A
	- Errors in control system logic don't lead to dangerous situations	Errors in logic don't lead to dangerous situations.	Pass
	- reasonably foreseeable human error during operation does not lead to hazardous situations.	Reasonably foreseeable human error does not lead to hazardous situations	Pass
	Particular attention must be given to the following points:	-	-
	- the machinery must not start unexpectedly,	The machinery cannot start unexpectedly.	Pass
	- the parameters of the machinery must not change in an uncontrolled way, where such change may lead to hazardous situations,	The parameters of the machinery can not change in an uncontrolled way	Pass
	- the machinery must not be prevented from stopping if the stop command has already been given,	The machinery cannot be prevented from stopping when the stop command has already been given.	Pass
	- no moving part of the machinery or piece held by the machinery must fall or be ejected,	no moving part of the machinery or piece held by the machinery must fall or be ejected,	Pass
	- automatic or manual stopping of the moving parts, whatever they may be, must be unimpeded,	Any stopping can not be unimpeded.	Pass
	- the protective devices must remain fully effective or give a stop command,	The protective devices is remain fully effective.	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.	The safety-related parts of the control system has been apply in a coherent way	Pass
	For cable-less control, an automatic stop must be activated when correct control signals are not received, including loss of communication.	The automatic stop has been activated.	Pass
1.2.2	Control devices	-	-
	Control devices must be:	-	-
	- clearly visible and identifiable, using pictograms where appropriate,	It has been complied with.	Pass
	- positioned in such a way as to be safely operated without hesitation or loss of time and without ambiguity,	Suitable position for each control device has been taken.	Pass
	- Designed so that the movement of the control is consistent with its effect	The movement of the control is consistent with its effect.	Pass
	- located outside the danger zones, except where necessary for certain control devices such as an emergency stop or a teach pendant,	They are located outside the danger zones.	Pass

Clause	Requirement – test	Result	Verdict
	- Positioned so that their operation can't cause additional risk	Suitable position for each control device has been taken.	Pass
	- designed or protected in such a way that the desired effect, where a hazard is involved, can only be achieved by a deliberate action,	Designed and protected can only be achieved by a deliberate action.	Pass
	- made in such a way as to withstand foreseeable forces; particular attention must be paid to emergency stop devices liable to be subjected to considerable forces.	All of them can withstand foreseeable strain.	Pass
	Where a control is designed and constructed to perform several different actions, namely where there is no one-to-one correspondence, the action to be performed must be clearly displayed and subject to confirmation where necessary.	No this situation,	N/A
	Controls devices must be so arranged that their layout, travel and resistance to operation are compatible with the action to be performed, taking account of ergonomic principles	All control devices have been arranged adequately and taking account of ergonomic principles.	Pass
	Constraints due to the necessary foreseeable use of personal protection equipment must be taken into account	This kind of situation doesn't exist.	Pass
	Machinery must be fitted with indicators as required for safe operation	This requirement has been complied with.	Pass
	The operator must be able to read them from the control position	They can be read from the control position.	Pass
	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.	The operator can be able to ensure the no-one is in the danger zones from the control position.	Pass
	If neither of these possibilities is applicable, before the machinery starts, an acoustic and/or visual warning signal must be given. The exposed persons must have time to leave the danger zone or prevent the machinery starting up.	An acoustic and visual warning signal device has been used.	Pass
	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.	Emergency stop switch can be used to prevent the machine starting up.	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	Just one control position.	N/A

Clause	Requirement – test	Result	Verdict
	of the others, except for stop controls and emergency stops.		
	When machinery has two or more operating positions, each position must be provided with all the required control devices without the operators hindering or putting each other into a hazardous situation.	Just one control position.	N/A
1.2.3	Starting	-	-
	It must be possible to start machinery only by voluntary actuation of a control provided for the purpose	These machines shall be started only by voluntary actuation of a control.	Pass
	The same requirement applies:	-	-
	- When restarting the machinery after stoppage, whatever the cause	The same requirement is applied.	Pass
	- When effecting a significant change in the operating conditions	The same requirement is applied.	Pass
	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.	Not applicable.	N/A
	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.	Not applicable.	N/A
	Where machinery has several starting control devices and the operators can therefore put each other in danger, additional devices must be fitted to rule out such risks. If safety requires that starting and/or stopping must be performed in a specific sequence, there must be devices which ensure that these operations are performed in the correct order.	Not applicable.	N/A
1.2.4	Stopping	-	-
1.2.4.1	Normal stopping	-	-
	Each machine must be fitted with a control whereby the machine can be brought safely to a complete stop	The normal stopping devices have been used for these machines.	Pass
	Each workstation must be fitted with a control to stop some or all of the moving parts of the	Workstation has fitted with a normal stopping device.	Pass

Clause	Requirement – test	Result	Verdict
	machinery, depending on the type of hazard, so that the machinery is rendered safe		
	The machinery's stop control must have priority over the start controls	They have priority over the start controls.	Pass
	Once the machinery or its dangerous parts have stopped, the energy supply to the actuators concerned must be cut off	The energy supply has been cut off after the machine is stopped.	Pass
1.2.4.2	Operational stop	-	-
	Where, for operational reasons, a stop control that does not cut off the energy supply to the actuators is required, the stop condition must be monitored and maintained.	No this situation.	N/A
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	The machine has fitted with emergency stop device.	Pass
	The following exceptions apply:	-	-
	- Machines in which an emergency stop device would not lessen the risk, either because it would not reduce the stopping time or because it would not enable the special measures required to deal with the risk to be taken	Not applicable.	N/A
	- Hand-held portable machines and hand-guided machines	Not applicable.	N/A
	The emergency stop device must:	-	-
	- Have clearly identifiable, clearly visible and quickly accessible controls	They are identifiable, clearly visible and quickly accessible controls.	Pass
	- Stop the dangerous process as quickly as possible, without creating additional hazards	They can stop the dangerous process as quickly as possible, without creating additional hazards.	Pass
	- Where necessary, trigger or permit the triggering of certain safeguard movements	No this kind of application	N/A
	Once active operation of the emergency stop control has ceased following a stop command, that command must be sustained by engagement of the emergency stop device until that engagement is specifically overridden	This requirement has been complied with.	Pass
	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	These specified requirements have been complied with.	Pass
	The emergency stop function must be available	This requirement has been complied with.	Pass

Clause	Requirement – test	Result	Verdict
	and operational at all times, regardless of the operating mode.		
	Emergency stop devices must be a back-up to other safeguarding measures and not a substitute for them.	This requirement has been complied with.	Pass
1.2.4.4	Complex installations	-	-
	In the case of machinery or parts of machinery designed to work together, must so design and construct the machinery that the stop controls, including the emergency stop, can stop not only the machinery itself but also all equipment upstream and/or downstream if its continued operation can be dangerous	This requirement has been complied with.	Pass
1.2.5	Mode selection	-	-
	The control mode selected must override all other control systems with the exception of the emergency stop	The control mode of selection can override all other control systems with the exception of the emergency stop.	Pass
	If machinery has been designed and built to allow for its use in several control or operating modes presenting different safety levels, it must be fitted with a mode selector which can be locked in each position	Not applicable.	N/A
	Each position of the selector must correspond to a single operating or control mode	Each of them is corresponding to a single operating or control mode.	Pass
	The selector may be replaced by another selection method which restricts the use of certain functions of the machinery to certain categories of operator	No this kind of application.	N/A
	If, for certain operations, the machinery must be able to operate with its protection devices neutralized, the mode selector must simultaneously:	No this kind of application.	N/A
	- disable all other control or operating modes,	Not applicable.	N/A
	- Permit movements only by controls requiring sustained action	Not applicable.	N/A
	- Permit the operation of dangerous moving parts only in enhanced safety conditions while preventing hazards from linked sequences	Not applicable.	N/A
	- Prevent any movement liable to pose a danger by acting voluntarily or involuntarily on the machine's internal sensors	Not applicable.	N/A
	If these four conditions cannot be fulfilled	This requirement has been complied with.	Pass

Clause	Requirement – test	Result	Verdict
	simultaneously, the control or operating mode selector must activate other protective measures designed and constructed to ensure a safe intervention zone.		
	In addition, the operator must be able to control operation of the parts he is working on at the adjustment point.	Not applicable.	N/A
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	No risk is generated from these accidental situations.	Pass
	In particular:	-	-
	- The machinery must not start unexpectedly	It doesn't start unexpectedly.	Pass
	- the parameters of the machinery must not change in an uncontrolled way when such change can lead to hazardous situations,	the parameters of the machinery will not change in an uncontrolled way	Pass
	- The machinery must not be prevented from stopping if the command has already been given	This requirement has been complied with.	Pass
	- No moving part of the machinery or piece held by the machinery must fall or be ejected	This clause has been met.	Pass
	- Automatic or manual stopping of the moving parts whatever they must be unimpeded	This requirement has been complied with.	Pass
	- The protection devices must remain fully effective	All protection devices can remain effective fully.	Pass
1.2.7	Failure of the control circuit	-	-
	A fault in the control circuit, or failure of or damage to the control circuit must not lead to dangerous situations	The failure of the control circuit will not lead to dangerous situations.	Pass
	In particular:	-	-
	- The machinery must not start unexpectedly	It doesn't start unexpectedly.	Pass
	- The machinery must not be prevented from stopping if the command has already been given	This requirement has been complied with.	Pass
	- No moving part of the machinery or piece held by the machinery must fall or be ejected	No part will fall or be ejected.	Pass
	- Automatic or manual stopping of the moving parts whatever they may be must be unimpeded	This requirement has been complied with.	Pass
	- The protection device must remain fully effective	All of protection devices can remain effective fully.	Pass
1.2.8	Software	-	-
	Interactive software between the operator and the command or control system of a machine must	Not applicable.	N/A

Clause	Requirement – test	Result	Verdict
	be user-friendly		
1.3	Protection against mechanical hazards	-	-
1.3.1	Risk of loss of stability	-	-
	Machinery, components and fittings thereof must be so designed and constructed that they are stable enough, under the foreseen operating conditions for use without risk of overturning, falling or unexpected movement	The stability of machines, components and fittings has been taken into consideration.	Pass
	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.	N/A
1.3.2	Risk of break-up during operation	-	-
	The various parts of machinery and their linkages must be able to withstand the stress to which they are subject when used as foreseen by the manufacturer	All parts used can withstand sufficient stress for working.	Pass
	The durability of the materials used must be adequate for the nature of the workplace foreseen by the manufacturer, in particular as regards the phenomena of fatigue, aging, corrosion and abrasion	All materials used have adequate durability.	Pass
	The manufacturer must indicate in the instructions the type and frequency of inspection and maintenance required for safety reasons, where appropriate, indicate the parts subject to wear and the criteria for replacement	This information in relation to inspection and maintenance etc. are indicated in the instruction manual.	Pass
	Where a risk of rupture or disintegration remains despite the measures taken the moving parts must be mounted and positioned in such a way that in case of rupture their fragments will be contained	No this kind of situation.	N/A
	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 against all manner of external stresses and strains; precaution must be taken to ensure that no risk is posed by a rupture	No this kind of situation.	N/A
	Where the material to be processed is fed to the tool automatically, the following conditions must be fulfilled to avoid risks to the persons exposed:	-	-
	- When the work piece comes into contact with	This requirement has been complied with.	Pass

Clause	Requirement – test	Result	Verdict
	the tool the later must have attained its normal working conditions		
	- When the tool starts and/or stops the feed movement and the tool movement must be coordinated	This requirement has been complied with.	Pass
1.3.3	Risks due to falling or ejected objects	-	-
	Precautions must be taken to prevent risks from falling or ejected objects	No this kind of risk.	N/A
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	All parts have been processed carefully so that they have no sharp edges, no sharp angles, and no rough surfaces likely to cause injury.	Pass
1.3.5	Risks related to combined machinery	-	-
	Where the machinery is intended to carry out several different operations with the manual removal of the piece between each operation, 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 danger or risk for the exposed person	No risk is generated from that situation for the exposed person.	Pass
	For this purpose, it must be possible to start and stop separately and elements that are not protected	Not applicable.	N/A
1.3.6	Risks relating 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	The machinery can be operated safely and reliably under different conditions of use.	Pass
1.3.7	Prevention of risks related to moving parts	-	-
	The moving parts of machinery must be designed, built and laid out to avoid hazards or, where hazards persist, fixed with guards or protective devices in such a way as to prevent all risk of contact which could lead to accidents	Appropriate protective guards have been fitted to avoid hazards.	Pass
	All necessary steps must be taken to prevent accidental blockage of moving parts involved in the work	Appropriate protective guards have been taken to avoid hazards.	Pass
	In cases where, despite the precautions taken, a blockage is likely to occur, specific protection	No this kind of risk situation.	N/A

Clause	Requirement – test	Result	Verdict
	devices or tools, the instruction handbook and possibly a sign on the machinery should be provided by the manufacturer to enable the equipment to be safely unblocked		
	The instructions and, where possible, a sign on the machinery shall identify these specific protective devices and how they are to be used.	It has been included in the instructions.	Pass
1.3.8	Choice of protection against risks arising from moving parts	-	-
	Guards or protection devices used to protect against the risks related to moving parts must be selected on the basis of the type of risk	Guards or protection devices have been used appropriately.	Pass
	The following guidelines must be used to help make the choice	-	-
1.3.8.1	Moving transmission parts	-	-
	Guards designed to protect exposed persons against the risks associated with moving transmission parts must be:	-	-
	- Either fixed, complying with requirements 1.4.1 and 1.4.2.1 or	The fixed guards are used.	Pass
	- Interlocking movable guards as referred to in section 1.4.2.2.	No this situation.	N/A
	Interlocking movable guards should be used where frequent access is envisaged.	No this situation.	N/A
1.3.8.2	Moving parts involved in the process	-	-
	guards or protection devices designed to protect exposed persons against the risks associated with moving parts contributing to the work must be:	-	-
	- either fixed guards complying with requirements 1.4.1 and 1.4.2.1	fixed guards complying with requirements 1.4.1 and 1.4.2.1	Pass
	- interlocking movable guards as referred to in section 1.4.2.2, or	No this situation.	N/A
	- protective devices as referred to in section 1.4.3, or	No this situation.	N/A
	- a combination of the above.	No this situation.	N/A
	However, when certain moving parts directly involved in the process can't be made completely or partially inaccessible during operation owing to operations requiring near-by operator intervention, where technically possible such parts must be fitted with:	-	-
	- fixed guards or interlocking movable guards	Not applicable.	N/A

Clause	Requirement – test	Result	Verdict
	preventing access to those sections of the parts that are not used in the work, and		
	- adjustable guards as referred to in section 1.4.2.3 restricting access to those sections of the moving parts where access is necessary.	Not applicable.	N/A
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.	The requirement has been complied with.	Pass
1.4	Required characteristics of guards and protection devices	-	-
1.4.1	General requirement	-	-
	Guards and protection devices must:	-	-
	- Be of robust construction	They are of robust construction.	Pass
	- be securely held in place,	be securely held in place,	Pass
	- Not give rise to any additional risk	No additional risk is generated.	Pass
	- Not be easy to bypass or render non-operational	They cannot be easy to bypass or render non-operational.	Pass
	- Be located at an adequate distance from the danger zone	Appropriate safety distances according to EN ISO13857 has been complied with.	Pass
	- Cause minimum obstruction to the view of the production process	This requirement has been complied with.	Pass
	- Enable essential work to be carried out on the installation and/or replacement of tools and for maintenance purposes by restricting access exclusively to the area where the work has to be done, if possible without the guard having to be removed or the protective device having to be disabled.	These requirements have been taken into account during the design of the protection devices.	Pass
	In addition, guards must, where possible, protect against the ejection or falling of materials or objects and against emissions generated by the machinery.	No this situation.	N/A
1.4.2	Special requirements for guards	-	-
1.4.2.1	Fixed guards	-	-
	Fixed guards must be fixed by systems that can be opened or removed only with tools.	They are held securely in place.	Pass
	Their fixing systems must remain attached to the guards or to the machinery when the guards are removed.	They can be opened only with tools.	Pass

Clause	Requirement – test	Result	Verdict
	Where possible, guards must be unable to remain in place without their fixings	Guards are unable to remain in place without their fixings	Pass
1.4.2.2	Interlocking movable guards	-	-
	Interlocking movable guards must:	-	-
	- As far as possible remain fixed to the machinery when open	Not applicable.	N/A
	- be designed and constructed in such a way that they can be adjusted only by means of an intentional action.	Not applicable.	N/A
	Interlocking movable guards must be associated with an interlocking device that:	-	-
	- prevents the start of hazardous machinery functions until they are closed and	This kind of situation doesn't exist.	N/A
	- gives a stop command whenever they are no longer closed.	This kind of situation doesn't exist.	N/A
	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:	This kind of situation doesn't exist.	N/A
	- prevents the start of hazardous machinery functions until the guard is closed and locked, and	This kind of situation doesn't exist.	N/A
	- keeps the guard closed and locked until the risk of injury from the hazardous machinery functions has ceased.	This kind of situation doesn't exist.	N/A
	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.	This kind of situation doesn't exist.	N/A
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:	No adjustable guard has been used.	N/A
	- Be adjustable manually or automatically according to the type of work involved	Not applicable.	N/A
	- Be readily adjustable without the use of tools	Not applicable.	N/A
1.4.3	Special requirements for protection devices	-	-
	Protection devices must be designed and incorporated into the control system so that:	-	-
	- Moving parts can't start up while they are within the operator's reach	Not applicable.	N/A

Clause	Requirement – test	Result	Verdict
	- persons cannot reach moving parts while the parts are moving, and	Not applicable.	N/A
	- The absence or failure of one of their components prevents starting or stops the moving parts	Not applicable.	N/A
	Protective devices must be adjustable only by means of an intentional action.	Not applicable.	N/A
1.5	Protection against other hazards	-	-
1.5.1	Electricity supply	-	-
	Where machinery has an electricity supply it must be designed, constructed and equipped so that all hazards of an electrical nature are or can be prevented	Appropriate protections have been taken.	Pass
	The safety objectives set out in Directive 2006/95/EC 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.	This requirement has been complied with.	Pass
1.5.2	Static electricity	-	-
	Machinery must be so designed and constructed as to prevent or limit the build-up of potentially dangerous electrostatic charges and/or be fitted with a discharging system	Adequate safety design for this requirement has been taken.	Pass
1.5.3	Energy supply other than electricity	-	-
	Where machinery is powered by an energy other than electricity, it must be so designed, constructed and equipped as to avoid all potential hazards associated with these types of energy	This situation doesn't exist.	N/A
1.5.4	Errors 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 of such parts or, failing this, by information on moving parts and/or their housings where the direction of movement must be known to avoid a risk	Appropriate design has been taken during design and attention has been paid during fitting.	Pass
	Where necessary, the instructions must give further information on these risks.	Adequate instructions are given in the instruction manual.	Pass
	Where a faulty connection can be the source of risk, incorrect connections must be made impossible by design or, failing this, by	The relative safety technologies have been taken and sufficient information has been given.	Pass

Clause	Requirement – test	Result	Verdict
	information given on the elements to be connected and, where appropriate, on the means of connection.		
1.5.5	Extreme temperatures	-	-
	Step must be taken to eliminate any risk of injury caused by contact with or proximity to machinery parts or materials at high or very low temperatures	This kind of situation doesn't exist.	N/A
	The necessary steps must also be taken to avoid or protect against the risk of hot or very cold material being ejected.	This kind of situation doesn't exist.	N/A
1.5.6	Fire	-	-
	Machinery must be designed and constructed to avoid all risk of fire or overheating posed by the machinery itself or by gases, liquids, dusts, vapors or the other substances produced or used by the machinery	This kind of situation doesn't exist.	N/A
1.5.7	Explosion	-	-
	Machinery must be designed and constructed to avoid any risk of explosion posed by the machinery itself or by gases, liquids, dusts, vapors or other substances produced or used by the machinery	No explosion risk is generated.	N/A
	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.	No explosion risk is generated.	N/A
1.5.8	Noise	-	-
	Machinery must be so designed and constructed that risks resulting from the emission of airborne noise are reduced to the lowest level taking accounting of technical progress and the availability of means of reducing noise, in particular at source	Appropriate measure has been taken.	Pass
	The level of noise emission may be assessed with reference to comparative emission data for similar machinery.	No this necessary.	N/A
1.5.9	Vibration	-	-
	Machinery must be so designed and constructed that risks resulting from vibrations produced by the machinery are reduced to the lowest level, taking account of technical progress and the	Not applicable.	N/A

Clause	Requirement – test	Result	Verdict
	availability of means of reducing vibration, in particular at source		
	The level of vibration emission may be assessed with reference to comparative emission data for similar machinery.	No this necessary.	N/A
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.	No harmful emission of radiation has been found.	N/A
	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.	No harmful emission of radiation has been found.	N/A
	Any functional non-ionising radiation emissions during setting, operation and cleaning must be limited to levels that do not have adverse effects on persons.	No harmful emission of radiation has been found.	N/A
1.5.11	External radiation	-	-
	Machinery must be so designed and constructed that external radiation doesn't interfere with its operation	Appropriate EMC protection measure has been taken.	Pass
1.5.12	Laser equipment	-	-
	Where laser equipment is used, the following provisions should be taken into account;	No laser equipment is used.	N/A
	- Laser equipment on machinery must be designed and constructed so as to prevent any accidental radiation	No laser equipment is used.	N/A
	- Laser equipment on machinery must be protected so that effective radiation, radiation produced by reflection or diffusion and secondary radiation don't damage health	No laser equipment is used.	N/A
	- Optical equipment for the observation or adjustment of laser equipment on machinery must be such that no health risk is created by the laser rays	No laser equipment is used.	N/A
1.5.13	Emissions of hazardous materials and substances	-	-
	Machinery must be so designed, constructed and/or equipped that risks due to gases, liquids, dust, vapors and other waste materials which it	It has been complied with.	Pass

Clause	Requirement – test	Result	Verdict
	produces can be avoided		
	Where a hazard cannot be eliminated, the machinery must be so equipped that hazardous materials and substances can be contained, evacuated, precipitated by water spraying, filtered or treated by another equally effective method.	No this kind of hazard exists.	N/A
	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.	N/A
1.5.14	Risk of being trapped in a machine	-	-
	Machinery must be so designed, constructed or fitted with a means of preventing a exposed person from being enclosed within it or, if that is impossible, with a means of summoning help	It has been complied with the requirement.	Pass
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 to prevent persons slipping, tripping or falling on or off these parts	No slipping, tripping or falling risk has been found.	N/A
	Where appropriate, these parts must be fitted with handholds that are fixed relative to the user and that enable them to maintain their stability.	No this situation.	N/A
1.5.16	Lightning	-	-
	Machinery in need of protection against the effects of lightning while being used must be fitted with a system for conducting the resultant electrical charge to earth.	Not applicable.	N/A
1.6	Maintenance	-	-
1.6.1	Machinery maintenance	-	-
	Adjustment and maintenance points must be located outside danger zones.	They are located outside danger zones.	Pass
	It must be possible to carry out adjustment, maintenance, repair, cleaning and servicing operations while machinery is at a standstill	These jobs can be carried out while the machine is at a standstill.	Pass
	If one or more of the above conditions can't be satisfied for technical reasons, these operations must be possible without risk	Not applicable.	N/A
	In the case of automated machinery and, where necessary, other machinery, the manufacturer	The requirement has been complied with.	Pass

Essential health and safety requirements

TEST REPORT NO.: HQ-150803-1

Page 20 of 27

Clause	Requirement – test	Result	Verdict
	must take provision for a connecting device for mounting diagnostic fault-finding equipment		
	Automated machine components which have to be changed frequently, in particular for a change in manufacture or where they are liable to wear or likely to deteriorate following an accident, must be capable of being removed and replaced easily and in safety	The relative components can be removed and replaced easily and in safety.	Pass
	Access to the components must enable these tasks to be carried out with the necessary technical means in accordance with an operating method specified by the manufacturer	Appropriate means have been given in the instruction manual.	Pass
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.	Appropriate protection measures have been taken so that all areas can be accessed safely.	Pass
1.6.3	Isolation of energy sources	-	-
	All machinery must be fitted with means to isolate it from all energy sources	Circuit breaker has been taken into used.	Pass
	Such isolators must be clearly identified	They are identified clearly.	Pass
	They must be capable of being locked if reconnection could endanger exposed persons	Not applicable.	N/A
	The isolator must be capable of being locked also where an operator is unable, from any of the points to which he has access, to check that the energy is still cut off	The clause has been met.	Pass
	In the case of machinery supplied with electricity through a plug capable of being plugged into a circuit, separation of the plug is sufficient	Not applicable.	N/A
	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 exposed persons	This requirement has been complied with.	Pass
	As an exception to the above requirements, certain circuits may remain connected to their energy source in order, for example, to hold parts, protect information, light interiors, etc. In this case, special steps must be taken to ensure operator safety	This kind of situation doesn't exist.	N/A
1.6.4	Operator intervention	-	-

Clause	Requirement – test	Result	Verdict
	Machinery must be so designed, constructed and equipped that the need for operator intervention is limited	The operator intervention has been limited.	Pass
	If operator intervention can't be avoided, it must be possible to carry it out easily and in safety	No this kind of situation.	N/A
1.6.5	Cleaning of internal parts	-	-
	The machinery must be designed and constructed in such a way that it is possible to clean internal parts which have contained dangerous substances or preparations without entering them; any necessary unblocking must also be possible from the outside	The clause has been met.	Pass
	If it is absolutely impossible to avoid entering the machinery, the manufacturer must take steps during its construction to allow cleaning to take place safely.	It is not need to enter the machinery.	N/A
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.	Information and warnings are readily understandable pictograms.	Pass
	Any written or verbal information and warnings must be expressed in an official Community language or languages, which may be determined in accordance with the Treaty by the Member State in which the machinery is placed on the market and/or put into service and may be accompanied, on request, by versions in any other official Community language or languages understood by the operators.	It is in English.	Pass
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.	Be unambiguous and easily understood.	Pass
	It must not be excessive to the extent of overloading the operator.	No this situation is found.	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.	It can be easily understood and easy to use.	Pass
1.7.1.2	Warning devices	-	-
	Where the health and safety of persons may be	It has been complied with.	Pass

Clause	Requirement – test	Result	Verdict
	endangered by a fault in the operation of unsupervised machinery, the machinery must be equipped in such a way as to give an appropriate acoustic or light signal as a warning.		
	Where machinery is equipped with warning devices these must be unambiguous and easily perceived. The operator must have facilities to check the operation of such warning devices at all times.	Be unambiguous and easily understood.	Pass
	The requirements of the specific Community Directives concerning colors and safety signals must be complied with	It has been 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.	Appropriate warning has been taken.	Pass
	Such warnings should preferably use readily understandable pictograms and/or be drawn up in one of the languages of the country in which the machinery is to be used, accompanied, on request, by the languages understood by the operators	They can be understood readily.	Pass
1.7.3	Marking	-	-
	All machinery must be marked legibly and indelibly with the following minimum particular:	-	-
	- the business name and full address of the manufacturer and, where applicable, his authorised representative,	It has been marked.	Pass
	- designation of the machinery,	It has been marked.	Pass
	- the CE Marking (see Annex III),	It has been marked.	Pass
	- designation of series or type,	It has been marked.	Pass
	- serial number, if any,	It has been marked.	Pass
	- the year of construction, that is the year in which the manufacturing process is completed.	No this contained.	N/A
	It is prohibited to pre-date or post-date the machinery when affixing the CE marking.	The CE marking is affixed in a proper-date.	Pass
	Furthermore, machinery designed and constructed for use in a potentially explosive atmosphere must be marked accordingly.	No this situation.	N/A
	Machinery must also bear full information	This information has been provided.	Pass

Clause	Requirement – test	Result	Verdict
	relevant to its type and essential for safe use. Such information is subject to the requirements set out in section 1.7.1.		
	Where a machine part must be handled during use with lifting equipment, its mass must be indicated legibly, indelibly and unambiguously.	No this situation.	N/A
	The interchangeable equipment referred to in article 1 (2), third subparagraph, must bear the same information	No this situation.	N/A
	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.	This information has been provided.	Pass
1.7.4	Instructions	-	-
	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.	In English.	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.	'Original instructions' has been provided.	Pass
	By way of exception, the maintenance instructions intended for use by specialized personnel mandated by the manufacturer or his authorized representative may be supplied in only one Community language which the specialized personnel understand.	No maintenance instructions has been provided..	N/A
	The instructions must be drafted in accordance with the principles set out below.	It has been complied with.	Pass
1.7.4.1	General principles for the drafting of instructions	-	-
	a) The instructions must be drafted in one or more official Community languages. The words 'Original instructions' must appear on the language version(s) verified by the manufacturer or his authorized representative.	The 'Original instructions' has appeared on the language version.	Pass
	(b) Where no 'Original instructions' exist in the official language(s) of the country where the machinery is to be used, a translation into that/those language(s) must be provided by the manufacturer or his authorized representative or	The 'Original instructions' is in English.	Pass

Clause	Requirement – test	Result	Verdict
	by the person bringing the machinery into the language area in question. The translations must bear the words ‘Translation of the original instructions’.		
	(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.	It is included in the instructions.	Pass
	(d) In the case of machinery intended for use by non-professional operators, the wording and layout of the instructions for use must take into account the level of general education and acumen that can reasonably be expected from such operators.	The requirement has been complied with.	Pass
1.7.4.2	Contents of the instructions	-	-
	Each instruction manual must contain, where applicable, at least the following information:	-	-
	a) the business name and full address of the manufacturer and of his authorized representative;	This information has been provided.	Pass
	b) the designation of the machinery as marked on the machinery itself, except for the serial number (see section 1.7.3);	This information has been provided.	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;	The EC declaration of conformity has been provided.	Pass
	(d) a general description of the machinery;	This information has been provided.	Pass
	(e) the drawings, diagrams, descriptions and explanations necessary for the use, maintenance and repair of the machinery and for checking its correct functioning;	This information has been provided.	Pass
	(f) a description of the workstation(s) likely to be occupied by operators;	No this contained.	N/A
	(g) a description of the intended use of the machinery;	This information has been provided.	Pass
	(h) warnings concerning ways in which the machinery must not be used that experience has shown might occur;	This information has been provided.	Pass
	(i) assembly, installation and connection instructions, including drawings, diagrams and	This information has been provided.	Pass

Clause	Requirement – test	Result	Verdict
	the means of attachment and the designation of the chassis or installation on which the machinery is to be mounted;		
	(j) instructions relating to installation and assembly for reducing noise or vibration;	No this contained.	N/A
	(k) instructions for the putting into service and use of the machinery and, if necessary, instructions for the training of operators;	No this contained.	N/A
	(l) information about the residual risks that remain despite the inherent safe design measures, safeguarding and complementary protective measures adopted;	No this contained.	N/A
	(m) instructions on the protective measures to be taken by the user, including, where appropriate, the personal protective equipment to be provided;	No this contained.	N/A
	(n) the essential characteristics of tools which may be fitted to the machinery;	No this contained.	N/A
	(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;	No this contained.	N/A
	(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;	No this contained.	N/A
	(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;	It has been included in the instructions.	Pass
	(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;	It has been included in the instructions.	Pass
	(s) instructions designed to enable adjustment and maintenance to be carried out safely, including the protective measures that should be taken during these operations;	Use the language of the country in which the machinery is to be used	Pass
	(t) the specifications of the spare parts to be used, when these affect the health and safety of operators;	It has been included in the instructions.	Pass

Clause	Requirement – test	Result	Verdict
	(u) the following information on airborne noise emissions:	-	-
	- Equivalent continuous A-weighted pressure level at workstations, where this exceeds 70 dB (A); where this level doesn't exceed 70 dB (A), this fact must be indicated	A noise test report has been taken in the TCF.	Pass
	- Peak C-weighted instantaneous sound pressure value at workstations, where this exceeds 63 Pa (130 dB in relation to 20 uPa)	Not applicable.	N/A
	- Sound power level emitted by the machinery where the equivalent continuous A-weight sound pressure level at workstations exceeds 80 dB (A)	It has met the requirement.	Pass
	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.	It has met the requirement.	Pass
	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.	Not applicable.	N/A
	Where the harmonized standards are not applied, sound levels must be measured using the most appropriate method for the machinery	The harmonized standards are applied.	Pass
	Whenever sound emission values are indicated the uncertainties surrounding these values must be specified. The operating conditions of the machinery during measurement and the measuring methods used must be described.	See the instruction manual in detail.	Pass
	Where the workstation(s) are undefined or cannot be defined, A-weighted sound pressure levels must be measured at a distance of 1 metre from the surface of the machinery and at a height of 1,6 metres from the floor or access platform.	The workstation(s) are defined.	Pass
	The position and value of the maximum sound pressure must be indicated	No this contained.	N/A
	Where specific Community Directives lay down other requirements for the measurement of sound pressure levels or sound power levels, those Directives must be applied and the corresponding provisions of this section shall not apply;	Not applicable.	N/A

Essential health and safety requirements

TEST REPORT NO.: HQ-150803-1

Page 27 of 27

Clause	Requirement – test	Result	Verdict
	(v) where machinery is likely to emit non-ionising 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.	The machine will not be used in a potentially explosive atmosphere.	N/A
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.	The requirement has been complied with.	Pass
2	Essential health and safety requirements for certain categories of machinery	-	-
3	Essential health and safety requirements to offset the particular hazards due to the mobility machinery	-	-
4	Essential health and safety requirements to offset the particular hazards due to a lifting operation	-	-
5	Essential health and safety requirements for machinery intended for underground work	-	-
6	Supplementary essential health and safety requirements for machinery presenting particular hazards due to the lifting of persons	-	-

2.2 ISO 12100 test report

1. Introduction.

In general this risk assessment report for the **Sealing Machine**, model **SF-150W** and its variants made by **Wenzhou Huaqiao Packing Machine Factory** was carried out in accordance with the requirements of Machinery Directive and the standards of EN ISO 12100-2010.

After the first assessment, some measures to eliminate the risks are given for the modification of machine or of relative documents with taking into account the explicit C-type EN standard or related B-type standard.

While taking appropriate provisions for the existing risks, the procedures and principles to eliminate the risk according to the most general B-type standard for any kind of machine, EN ISO 12100-2010, are followed, i.e.:

- First step: consider the possibility of eliminating risk at design stage.
- Second step: if impossible, protect the dangerous zone with appropriate design of safety guard or safety device.
- Third step: If above impossible, give warning signs to draw attention of operators about the residual risks.

In addition, some check list drawn from the explicit C-type EN standards, which are found suitable for or near the characteristic of this machine, are used to help developing the provisions for the elimination of the risks.

Finally the risk assessment was carried out again to ensure this machine and its relative documents are totally compliance with the Machinery Directive.

2. Risk assessment and risk reduction

Risk assessment and risk reduction				
Machine	Sealing Machine		Analyst	Elis
Sources	Specifications, preliminary design		Extent	Use phase: setting and operation
Method	Checklists: EN ISO 12100: 2010 Annex B		Date	Aug. -2015
No.	Type of group	Hazards		Risk reduction Protective measures
		origin	Potential consequences	
1	Mechanical hazards	Entanglement by rotating elements		Use fixed guards and warning sign
2	Electrical hazards	Burns do to contact electrical Parts which have become live under fault		Electrical equipment in accordance with IEC 60204-1
3	Thermal hazards	Scalding of fingers or hands.		Use fixed guards and warning sign

Part III: Test report

3.1 EN 415-3 test report

3.2 EN 60204-1 test report

3.3 Airborne noise test report

3.1 EN 415-3 test report

Test Report Content

This test report consists of:

* Main report

General information:

The test results presented in this report relate only to the object tested and information given from applicant or manufacturer.

Test case verdicts:

Pass= Pass, Fail = Fail, N/A = Not applicable. Placed in the column marked “Verdict”.

This is a Computer generated Test Report.

× Information written in “Italic” or “Italic and bold” font style is written by project Engineer during testing.

All other information in “Regular” or “Regular and bold” font style is a part of this “Test Report Form”.

EN 415-3:1999+A1:2009 Safety of Packaging Machines –
Part 3: Form, Fill and Seal Machines

TEST REPORT NO.: HQ-150803-3

Page 2 of 17

Clause	Requirement - test	Result	Verdict
0	Introduction	-	-
1	Scope	-	-
2	Normative references	-	-
3	Definitions	-	-
4	Hazards on form, fill and seal machines	-	-
5.	Safety requirements for form, fill and seal machines	-	-
5.1	General requirements for all form, fill and seal machines	-	-
	The following general requirements apply to all form, fill and seal machines where the equivalent hazard exists. In addition Annex A indicates in tabular form those sections in this clause which apply to each of the machines described in clause 3.	-	-
5.1.1	Drive mechanisms	-	-
	Drive mechanisms of all types shall be safeguarded with fixed or interlocked guards complying with 5.1.12.	Fixed guard has been taken.	Pass
5.1.2	Handwheels	-	-
	Where a handle or spoked handwheel is provided to operate a machine manually, the hazards which arise if the handwheel moves under power when the machine is in operation shall be eliminated in one of the following ways:	-	-
a)	Fitting an interlocking device which prevents the machine from operating under power until the handwheel has been disengaged;	No this situation.	N/A
b)	Making the handwheel solid with no protrusions;	No this situation.	N/A
c)	Recessing the handwheel so that it is flush with the casing of the machine and does not present an entanglement hazard.	No this situation.	N/A
	If detachable handle or handwheel is used, an interlocking device shall be fitted which prevents the machine being operated under power until the handle or handwheel is removed from the machine.	No this situation.	N/A
5.1.3	Size changing	-	-
	Typically form, fill and seal machines are constructed to handle a range of product and	Change from size to size could be manual.	Pass

EN 415-3:1999+A1:2009 Safety of Packaging Machines –
Part 3: Form, Fill and Seal Machines

TEST REPORT NO.: HQ-150803-3

Page 3 of 17

	pack sizes. Change from size to size may be manual or automatic.		
5.1.3.1	Manual size changing	-	-
	The design of the guards shall ensure that hazards on the machine are safeguarded for all the product and pack sizes for which the machine has been specified. Where, during manual size changing, manual adjustments have to be made to adjustable guards to prevent danger and/or change part guards are used, a warning label shall be fitted in a prominent position on the machine body and appropriate safety instructions included in the machine's instructions. Adjustable guards shall be capable of being adjusted to prevent danger for all purposes for which the machine has been specified and all change part guards necessary to prevent danger for all the purposes for which the machine has been specified shall be supplied with the machine.	It is complied with.	Pass
	Where change parts are to be used, their weight and location shall be carefully considered with reference to EN 614. If necessary, provision shall be made for change parts to be lifted and positioned with mechanical handling equipment.	No this situation.	N/A
5.1.3.2	Automatic size changing	-	-
	In addition to the requirements for manual size changing, where size change powered movements are contained within the machine guards, automatic size changing shall only be possible with the guards closed.	No this situation.	N/A
	Where size change powered movements are outside the normal extent of the machine guards, hazards may be avoided in one of the following ways:	-	-
a)	By eliminating crushing and shearing points using EN 349;	No this situation.	N/A
b)	Reducing the force of movements to less than 150N;	No this situation.	N/A
c)	Allowing movement only through a hold to run control.	No this situation.	N/A
5.1.4	Pneumatic and hydraulic equipment	-	-

EN 415-3:1999+A1:2009 Safety of Packaging Machines –
Part 3: Form, Fill and Seal Machines

TEST REPORT NO.: HQ-150803-3

Page 4 of 17

	All pneumatic components and pipework shall conform to the requirements of EN 983.	No this situation.	N/A
5.1.5	Electrical equipment	-	-
	Electrical equipment shall comply with EN 60204-1 option 1. Machines shall fitted with a category 0 stopping device (9.2.2 of EN 60204-1) unless stated otherwise in this standard or unless the immediate removal of power would delay stopping or create an additional hazard, in which case a category 1 or 2 stop shall be used.	It is complied with. Please see report of EN 60204-1.	Pass
	All electrical enclosures shall have a minimum protection level of IP 54 (EN 60529) except in those situations indicated in 13.3 of EN 60204-1 where a lower standard of protection is acceptable. When the machine is cleaned with water jets a protection level of IPX5 is required.	It is complied with.	Pass
	Safety related control circuits shall be designed in accordance with EN 13849-1 category 1 unless indicated otherwise in this standard.	It has been so designed.	Pass
	The machine shall be provided with an emergency stop button located on the control panel. If the distance from the control panel to the extremities of the machine is greater than 4 metres, additional emergency stop buttons shall be fitted at 4 metre intervals. The emergency stop function shall comply with category 0 in 4.1.5 of EN 13850 unless the immediate removal of power slows down stopping or creates an additional risk, in which case a category 1 function shall be used.	An emergency stop has been provided. No this situation. The emergency stop function has been complied with category 0 in 4.1.5 of EN 13850.	Pass
	After a stop the machine shall start only an intentional start command. It must not start unexpectedly, e.g. by a start command which is the result of a failure in the control system, by a start command generated by a sensor, by restoration of the power supply after an interruption. The control circuit shall comply to EN 1037.	After a stop the machine is started only an intentional start command.	Pass
	A visual and/or audible signal shall be provided to warn of an impending hazardous event. Warning devices shall comply with to EN 457 and be positioned in accordance with EN 842.	A visual audible signal has been provided to warn of an impending hazardous event.	Pass

5.1.6	Agri-foodstuffs and pharmaceuticals	-	-
	Machines may be designed to pack agri-foodstuffs and pharmaceuticals which can be contaminated by neglecting hygienic design principles. Because of the wide range of such products, it is not possible to give any precise requirements in this standard. Where a machine is designed or specified to pack agri-foodstuffs or pharmaceuticals there is a need to:	-	-
a)	Identify the level of hygienic design appropriate to the product;	It has been taken to considered during design.	Pass
b)	Carry out a risk assessment of the product while being packed on the machine;	See the report EN ISO 14121-1.	Pass
c)	Design a safe system for packing the product;	It is complied with.	Pass
d)	Determine appropriate contact materials;	It is complied with.	Pass
e)	Fit appropriate filters to prevent contamination by compressed air exhausts;	It has fit appropriate filters.	Pass
f)	Draft appropriate cleaning and disinfecting procedures for the instructions for use.	It has been drafted appropriate cleaning and disinfecting procedures	Pass
	In many situations it will be the machine user rather than the manufacturer that will have the necessary expertise to carry out a), b), c) and e) and the form, fill and seal machine manufacturer may only be responsible for part of c), d), e) and f). Nevertheless the form, fill and seal machine manufacturer shall ensure that the above requirements are carried out by competent persons.	Please see the usage instruction manual.	Pass
	Refer to EN 1672-2 for details of hygienic design requirements of a general nature for food products and ISO 14159 for other products.	It is complied with.	Pass
	On machines using compressed air, the design shall ensure that compressed air does not contaminate the product being packed.	Compressed air can not contaminate the product being packed.	Pass
5.1.7	Packaging materials and products	-	-
	Machines may be designed to pack products which are hazardous to health. Because of the wide range of such materials it is not possible to give any precise requirements in this standard.	This machine is not designed to pack products which are hazardous to health.	N/A
	Where a machine is designed or specified to pack products which are hazardous to health there is a need to:	-	-
a)	Identify the nature of the hazard;	Not applicable.	N/A

EN 415-3:1999+A1:2009 Safety of Packaging Machines –
Part 3: Form, Fill and Seal Machines

TEST REPORT NO.: HQ-150803-3

Page 6 of 17

b)	Carry out a risk assessment of the product while being packed on the machine;	Not applicable.	N/A
c)	Design a safe system for packing the product;	Not applicable.	N/A
d)	Supply the necessary ancillary equipment e.g. explosion proof electrical equipment, dust or fume extraction or monitoring devices;	Not applicable.	N/A
e)	Draft relevant sections for the instructions for use;	Not applicable.	N/A
f)	Install the ancillary equipment and check that it is operating safely before the hazardous product is handled.	Not applicable.	N/A
	In most situations it will be the machine user rather than the manufacturer that will have the necessary expertise to carry out a), b), c) and e) and the form, fill and seal machine manufacturer may only be responsible for part of d) and e). Nevertheless the form, fill and seal machine manufacturer shall ensure that the above requirements [a] to [f] are carried out by competent persons.	Not applicable.	N/A
	Heater controls	-	-
	Where the packaging machine incorporates a facility for heating packaging materials e.g. for sealing, or has a hot melt adhesive installation, thermostatic controls shall be installed which minimize the risk of the packaging materials or adhesive catching fire. The user shall be advised in the Instructions for Use, of the risk of fire or of potentially harmful fumes, if controls are set at an incorrect temperature and advised of the need to install such machines in a well ventilated room.	No applicable.	N/A
5.1.8	Controlled atmosphere packaging	-	-
	All vessels, pipework and fittings of controlled atmosphere installations shall be designed to safety contain the pressure. The gas supply shall be fitted with a lockable valve so that cleaning and maintenance operations can be carried out in safety.	No this situation.	N/A
	The design of the gas control system shall ensure that dangerous levels of gas do not build up around the machine. This may be achieved by	No this situation.	N/A

EN 415-3:1999+A1:2009 Safety of Packaging Machines –
Part 3: Form, Fill and Seal Machines

TEST REPORT NO.: HQ-150803-3

Page 7 of 17

a)	Fitting a solenoid valve to shut off the supply of gas when the machine stops;	No this situation.	N/A
b)	Providing ventilation equipment;	No this situation.	N/A
c)	Other measures recommended by EN 626.	No this situation.	N/A
	The safety requirements for machines which use oxygen are not covered by this standard.	-	-
5.1.9	Sterilization of packaging materials	-	-
	The machine's instructions shall advise operators of machines which use hydrogen peroxide, of dangers of contact with the skin and the need to ensure, by regular monitoring and effective ventilation, that the levels of the gas in the vicinity of the machine do not rise to levels which are hazardous to health.	No this contained.	N/A
	Machines which use ultraviolet light shall be so designed that the lamps do not present a hazard to operators with the machine guards open or closed. The light source shall be fitted with interlocked guards which prevent hazardous radiation when they are lit (see EN 953).	Not applicable.	N/A
5.1.10	Ergonomic design principles	-	-
	Bad posture/excessive effort-When designing or specifying a form, fill and seal machine the position of hand feeding stations, magazines for blanks and reel unwind mechanisms shall be carefully designed to avoid bad posture or excessive efforts which can cause injury. Refer to EN 614.	Ergonomic design principles has been taken to considered during design.	Pass
	Where platforms to assist access are provided with the machine, these platforms shall not reduce the standard of safety provided by the guards.	Not applicable.	N/A
	Controls-Controls and control panels shall be positioned according to the requirements of EN 614.	Controls-Controls and control panels have been positioned according to the requirements of EN 614.	Pass
	Hand and arm anatomy limitations-When a machine is to be fed by hand, the design hands and arms. Refer to EN 614-2.	Not applicable.	N/A
5.1.11	Slip, trip and fall	-	-
	The design of the machine should avoid assemblies at low level which are likely to cause a trip accident. Where access is required above floor level, to operate, clean or maintain the	It has been so designed. No this situation.	Pass

EN 415-3:1999+A1:2009 Safety of Packaging Machines –
Part 3: Form, Fill and Seal Machines

TEST REPORT NO.: HQ-150803-3

Page 8 of 17

	machine, the manufacturer shall provided the user with the necessary information regarding platforms or steps required for these activities to be carried out safely. Refer to EN 614.		
5.1.12	Guards and guard interlocking	-	-
	Unless otherwise specified in this standard, fixed and interlocking guards shall be dimensioned using ISO 13857. Interlocking guards shall be designed in accordance with EN 953 and shall be interlocked with devices complying with EN 1088, in a control circuit complying with EN 13849-1 category 1 as a minimum.	Fixed guards have been dimensioned using ISO 13857.	Pass
	Unless otherwise specified in this standard, the machine controls shall ensure that hazardous movements stop within 1,0 s of an interlocked guard being opened. If the hazardous movement cannot be stopped with 1,0 s the guards shall be fitted with guard locking devices which prevent access to the danger zone until the hazardous movement has stopped.	The machine controls can stop within 1.0s of an interlocked guard being opened.	Pass
	On machines which automatically reverse to safe position after they have stopped, the reversing movement may continue after the 1,0 s stopping time, provided the reversing mechanisms do not present a hazard e.g. by crushing or shearing between the moving mechanisms and fixed parts of the machine.	It is complied with.	Pass
5.1.13	Noise reduction	-	-
	Noise can be prevented or the emission minimized by the following measures:	-	-
a)	Drive mechanisms-fitting acoustic attenuation material to the fixed guards;	It has fitted acoustic attenuation material to the fixed guards	Pass
b)	Mechanisms should be designed so that they do not over-stroke;	It has been so designed.	Pass
c)	Air solenoids-fit silencers;	No applicable.	N/A
d)	Blow-off devices-fit low noise nozzle.	No applicable.	N/A
	For further details refer to EN ISO 11688-1.	-	-
5.2	Safety requirements for a flowwrapping machine	-	-
5.3	Safety requirements for a vertical form, fill and seal machine	-	-
5.4	Safety requirements for a pre-made bag, erect, fill and close machine	-	-

EN 415-3:1999+A1:2009 Safety of Packaging Machines –
Part 3: Form, Fill and Seal Machines

TEST REPORT NO.: HQ-150803-3

Page 9 of 17

5.5	Safety requirements for a mandrel flexible package form, fill and seal machine	-	-
5.6	Safety requirements for a horizontal end load cartoner	-	-
5.7	Safety requirements for a thermoform, fill and seal machine	-	-
	The hazards described in 4.7 shall be safeguarded by the following methods.	It is complied with the requirement.	Pass
5.7.1	Lower web reel unwind mechanism	-	-
	See 5.2.2. on machines with chain and clamp or clamp transport mechanisms, the access to these mechanisms from the reel unwind mechanism, shall be safeguarded with fixed guards which incorporate a slot for the lower film web no wider than 4 mm. Where this cannot be achieved the relationship between the slot width and distance from the hazard shall comply with Table ISO 13857.	No this situation.	N/A
5.7.2	Transport mechanism	-	-
	Transport mechanisms shall be safeguarded as follows.	It is complied with the requirement.	Pass
5.7.2.1	Counter rotating rollers	-	-
	The transport mechanisms of machines of this type shall be guarded with interlocking guards complying with 5.1.12.	No this situation.	N/A
5.7.2.2	Chains and clamps	-	-
	Machines with chain and clamp transport mechanisms where products are manually fed, shall be safeguarded with fixed guards which incorporate a slot for the lower film web no wider than 4 mm. Where this cannot be achieved the relationship between the slot width and the distance from the hazard shall comply with Table 4 of ISO 13857. Where the machine is automatically fed, the mechanisms shall be guarded as in 5.1.12.	No this situation.	N/A
5.7.2.3	Clamps	-	-
	Machines with clamp transport mechanisms where the products are manually fed, shall be safeguarded with fixed guards which incorporate a slot for the lower film web. The dimensions and position of the fixed guards shall comply with EN 294 Table 4. Where the	No this situation.	N/A

EN 415-3:1999+A1:2009 Safety of Packaging Machines –
Part 3: Form, Fill and Seal Machines

TEST REPORT NO.: HQ-150803-3

Page 10 of 17

	machine is automatically fed, the mechanisms shall be guarded as in 5.1.12.		
5.7.3	Heating chamber	-	-
	The machine shall be designed in such a way that when the machine stops there is no risk of the film catching fire.	No this situation.	N/A
	The heating chamber and forming die shall be safeguarded with interlocking guards in accordance with 5.1.12 and if appropriate 5.7.5.3, 5.7.5.4, 5.7.5.5, 5.7.5.6, 5.7.5.7 and 5.7.5.8. In addition the control system shall ensure that the heating chamber and forming die cannot move under gravity when the power source is disconnected. This may involve fitting a mechanical or pneumatic device which prevents the die from moving when power is removed.	No this situation.	N/A
	The reach distance through apertures in these guards shall wherever possible be in accordance with dimension B in Table 1.	No this situation.	N/A
	A label or pictogram shall be fitted to the heating chamber to warn of a residual burning hazard if this exists.	No this situation.	N/A
	The external guard temperature shall not exceed 65 °C.	No this situation.	N/A
5.7.4	Forming die-See 5.7.3.	-	-
5.7.5	Product loading area	-	-
	The product loading area shall be safeguarded as follow.	It is complied with the requirement.	Pass
5.7.5.1	Automatic product feeding devices	-	-
	Automatic product feeding devices shall be safeguarded with interlocking guards in accordance with 5.1.12 and if appropriate 5.7.5.3, 5.7.5.4, 5.7.5.5, 5.7.5.6, 5.7.5.7 and 5.7.5.8.	No this situation.	N/A
	The reach distance through apertures in these guards shall wherever possible be in accordance with dimension B in Table 1.	No this situation.	N/A
5.7.5.2	Manual product feeding	-	-
	Where a machine is to be manually fed, the transport mechanism shall be guarded as indicated in 5.7.2 and the access to the forming and sealing dies limited by the fitting of a false	It is complied with the requirement.	Pass

	base in the product loading area. The reach distance through apertures in the guards preventing to the forming and sealing dies shall wherever possible be in accordance with dimension B in Table 1. In situations where this is not practicable, the alternative guarding strategies described in 5.7.5.3, 5.7.5.4, 5.7.5.5, 5.7.5.6, 5.7.5.7 and 5.7.5.8 may be used.		
5.7.5.3	Trip guard	-	-
	This comprises an interlocked guard complying with 5.1.12. The interlocking device shall be interlocked in such a way that if it is disturbed, the hazardous movements will stop and/or reverse to a safe position. For this type of device, safety distance C, in Table 1 can be used. See Figure 45, however, the machine's instructions shall warn the user that such a device can become ineffective if a heavy object is placed on the guard.	It is complied with the requirement.	Pass
5.7.5.4	Trip guard with deterring device	-	-
	When supplemented with a deterring device (3.24 of EN 12100-1) e.g. falling fingers, the safety distance D, in Table 1 can be used. See figure 46.	Not applicable.	N/A
5.7.5.5	Trip guard with photo-electric device	-	-
	When supplemented with a electro-sensitive safety device complying with EN 61496-1 type 2 incorporated in a category 2 (EN 13849-1) control system, the safety distance E, in Table 1, can be used. See Figure 47.	Not applicable.	N/A
5.7.5.6	Light sensitive trip device	-	-
	This comprises one or a number of electro-sensitive safety devices complying with EN 61496-1 type 2 incorporated in a category 2 (see EN 13849-1) control system, which monitor the whole aperture. The control system shall ensure that the machine stops hazardous movements if an object is detected in the danger area. In this case safety distance F, in Table 1, can be used, provided the hazardous movements can be stopped by the control system in less than 0,5 s.	Not applicable.	N/A
5.7.5.7	Linked automatic guard	-	-

EN 415-3:1999+A1:2009 Safety of Packaging Machines –
Part 3: Form, Fill and Seal Machines

TEST REPORT NO.: HQ-150803-3

Page 12 of 17

	This comprises a guard which is attached to the forming or sealing die mechanism, and moves into place when the hazardous movements of the forming or sealing dies begin. The guard shall be interlocked with the machine to stop hazardous movements if the guard does not close in less than 0,5 s. The guard shall be fitted with a pressure sensitive device (see EN 1760-2) incorporated into a category 2 circuit (see EN 13849-1) or move with a force less than 150 N, so that the guard does not, of itself present a hazard. In this case, safety distance G, in Table 1, may be used.	Not applicable.	N/A
5.7.5.8	Automatic guard	-	-
	This guard is powered independently of other movements on the machine. It moves into place after the transport cycle, and before the forming and sealing cycles. It shall be interlocked with the machine, to ensure that hazardous movements cannot start until the guard is in position. The guard shall be fitted with a pressure sensitive device (EN 1760-2) incorporated into a category 1 circuit (EN 13849-1) or move with a force less than 150 N, so that the guard does not, of itself present a hazard. In this case safety distance H, in Table 1, may be used.	Not applicable.	N/A
5.7.6	Upper film reel unwind mechanism-See 5.2.2.	Not applicable.	N/A
5.7.7	Sealing die	-	-
	Mechanisms 5.7.7 to 5.7.9 shall be safeguarded with fixed guards or interlocking guards in accordance with 5.1.12 and if appropriate 5.7.5.3, 5.7.5.4, 5.7.5.5, 5.7.5.6, 5.7.5.7 and 5.7.5.8. In addition the control system shall ensure that these mechanisms cannot move under gravity when power or compressed air is disconnected.	Fixed guards have been taken. The mechanisms cannot move under gravity when power or compressed air is disconnected.	Pass
5.7.8	Reciprocating cutting devices-see 5.7.7.	-	-
5.7.9	Rotary cutting devices-See 5.7.7.	-	-
5.7.10	Scrap reels	-	-
	The drawing-in hazard shall be reduced either by fitting a fixed guard around the reel with a slot for the scrap no wider than 4 mm or by	Not applicable.	N/A

EN 415-3:1999+A1:2009 Safety of Packaging Machines –
Part 3: Form, Fill and Seal Machines

TEST REPORT NO.: HQ-150803-3

Page 13 of 17

	limiting the pulling force of the reel drive, so it is less than 150 N.		
5.7.11	Ancillary equipment	-	-
	Pad or leaflet inserters shall be considered as bag magazines (5.4.1) and bag erecting mechanisms (5.4.2).	Not applicable.	N/A
5.7.12	Coders-See 5.2.2.2.	Not applicable.	N/A
5.7.13	Noise reduction	-	-
	In addition to 5.1.13, noise can be prevented or the emission minimized by the following measures:	-	-
a)	Forming die-fit noise attenuating guards;	Not applicable.	N/A
b)	Filling machine-see appropriate clause;	Not applicable.	N/A
c)	Sealing die- fit noise attenuating guards;	It is complied with.	Pass
d)	Cutting die- fit noise attenuating guards.	Not applicable.	N/A
5.7.14	General form, fill and seal machine requirements	-	-
	In addition to the above requirements, the requirements, the requirements in 5.1 shall apply where the equivalent hazard exists.	It is complied with the requirement.	Pass
5.8	Safety requirements for an auger filler	-	-
5.9	Safety requirements for volumetric cup filler	-	-
5.10	Safety requirements for a volumetric piston filler	-	-
5.11	Safety requirements for a volumetric filler	-	-
6.	Verification of safety requirements	-	-
	A manufacturer or supplier who wishes to claim conformity to this standard, shall first verify that the machine fulfils the safety requirements.	The manufacturer has verified the machine fulfils the safety requirements.	-
	The following verification procedures shall be followed.	See the following verification procedures.	Pass
6.1	Visual inspections with machine stopped	-	-
6.1.1	Mechanical parts	-	-
	Check all mechanical components are securely fixed and all sharp edges have been removed.	Check all mechanical components are securely fixed and all sharp edges have been removed.	Pass
6.1.2	Pneumatic systems	-	-
	Check all pneumatic components and pipework conform to safety requirements (see EN 983) and are correctly installed.	Not applicable.	N/A
6.1.3	Hydraulic systems	-	-
	Check all hydraulic components and pipework	Not applicable.	N/A

EN 415-3:1999+A1:2009 Safety of Packaging Machines –
Part 3: Form, Fill and Seal Machines

TEST REPORT NO.: HQ-150803-3

Page 14 of 17

	conform to safety requirements (see EN 983) and are correctly installed.		
6.1.4	Electrical systems	-	-
	Check that the electrical equipment and installation is in compliance with the technical documentation described in clause 18 of EN 60204-1.	It is complied with. See the report of EN 60204-1.	Pass
6.1.5	Guards	-	-
	Check all guards are in place and securely fixed. Check that all interlocking devices are fitted and working correctly.	All guards and interlocking devices are checked.	Pass
6.1.6	Design requirements	-	-
	Check that the design features stipulated in the safety requirements have been incorporated.	It has been met the requirement.	Pass
6.2	Measurements with machine stopped	-	-
6.2.1	Guards	-	-
	Check the relationship between the size of any apertures in the guards and their distance from the nearest danger zones conform to the requirements of Table 4 in ISO 13857, EN 349 or this standard.	It has been met the requirement.	Pass
6.2.2	Electrical testing	-	-
	Perform the tests described in clause 20 of EN 60204-1.	It is complied with.	Pass
6.3	Visual inspections with machine running	-	-
6.3.1	Guards	-	-
	Check with machine running that the guards conform to the safety requirements.	It is complied with.	Pass
6.3.2	Interlocks	-	-
	Check the operation of all emergency stop and interlocking devices. Check that following the operation of an emergency stop or interlocking device, no hazards remain in the machine when the guards are opened.	It has met requirement.	Pass
6.4	Measurements with machine running	-	-
6.4.1	Noise	-	-
	Sound pressure level measurements shall be made either at the operating position of the machine, 1,6 m off the floor, or at four points around the machine 1, 0 m away from the surface of the machine and 1, 6 m off the floor.	It is complied with. See the noise of report.	Pass
	Measurements shall be taken with the machine dry running and if possible when running with	It is complied with. See the noise of report.	Pass

EN 415-3:1999+A1:2009 Safety of Packaging Machines –
Part 3: Form, Fill and Seal Machines

TEST REPORT NO.: HQ-150803-3

Page 15 of 17

	the product for which the machine has been specified. In situations where this is not possible e.g. because the product is frozen, the machine shall be tested with a representative product which is likely to produce similar noise emissions to the specified product.		
	Where the sound pressure levels exceed 70 dB(A) continuous A-weighted or 130 dB peak C-weighted, the measurements shall be recorded in the instructions for use.	It is complied with. See the noise of report.	Pass
6.4.2	Temperature	-	-
	With the machine fully warmed up, check that the external guard temperatures are less than 65°C.	No this situation.	N/A
6.5	Hazardous product and packaging material related requirements	-	-
6.5.1	Visual inspections before delivery	-	-
	Check that design requirements for handling the products or packaging materials in question have been followed.	The design requirements have checked. It has met the requirement.	Pass
6.6	Verification procedures	-	-
	Verification procedures for each safety requirement detailed in 5.1 to 5.7 are shown in Table 2.	It is complied with.	Pass
	Verification procedures for each safety requirement detailed in 5.8 to 5.11 are shown in Table 3.	It is complied with.	Pass
7.	Information for use	-	-
7.1	Requirements for all form, fill and seal machines	-	-
7.1.1	Marking	-	-
	Machines shall be marked with the following information:	-	-
a)	Name and address of the manufacturer or his authorized representative established in the European Economic Area;	It has been contained.	Pass
b)	Designation of series or type;	It has been contained.	Pass
c)	Year of construction;	It has been contained.	Pass
d)	Serial number (if any);	It has been contained.	Pass
e)	The CE mark (if applicable);	It has been contained.	Pass
f)	Electrical markings as indicated in 18.4 of EN 60204-1;	It has been contained.	Pass
g)	Warning labels or pictograms where specifically	It has been contained.	Pass

EN 415-3:1999+A1:2009 Safety of Packaging Machines –
Part 3: Form, Fill and Seal Machines

TEST REPORT NO.: HQ-150803-3

Page 16 of 17

	required in clause 5 of this standard;		
h)	the business name and full address of the authorised representative (where applicable);	No this contained.	N/A
i)	the designation of the machinery.	It has been contained.	Pass
7.1.2	Instructions for use	-	-
	All machines shall be accompanied by instructions which include at least the following:	-	-
a)	A repeat of the information marked on the machine;	No this contained.	N/A
b)	A record of the signs and pictograms fixed to the machine together with an explanation of their significance;	It has been contained.	Pass
c)	A description of the foreseen use of the machine which should include details of the product, packaging materials, pack sizes and speed of operation. On machines for use with controlled atmospheres or sterilizing agents the nature of these materials shall be stated;	It has been contained.	Pass
d)	A drawing indicating the work stations likely to be occupied by operators;	It has been contained.	Pass
e)	Instructions for safe handling of the machine during installation;	No this situation.	N/A
f)	Instructions for installation including services requirements, appropriate levels of local lighting and ventilation, if bolting down is required with the machine;	No this contained.	N/A
g)	Instructions for safe commissioning;	It has been contained.	Pass
h)	Instructions for safe use, cleaning and size changing including details of the mass of machine parts which must regularly be removed for size changing or cleaning;	It has been contained.	Pass
i)	Instructions for safe maintenance and adjustment;	It has been contained.	Pass
j)	Training requirements for machine operators and maintenance staff;	No this contained.	N/A
k)	A record of the sound pressure level when the machine is in use and instructions on how the machine should be installed to minimize noise;	No this contained.	N/A
l)	A statement indicating whether the machine is or is not suitable for use in a potentially explosive atmosphere;	No this situation.	N/A
m)	On machines for use with agri-foodstuffs or	No this contained.	N/A

EN 415-3:1999+A1:2009 Safety of Packaging Machines –
Part 3: Form, Fill and Seal Machines

TEST REPORT NO.: HQ-150803-3

Page 17 of 17

	pharmaceuticals, instructions for cleaning and disinfection of the machine, together with details of appropriate and inappropriate cleaning and disinfecting materials.		
n)	Any other instructions specifically required in clause 5 of this standard.	It is complied with.	Pass
7.2	Flowwrapping machine	-	-
7.3	Vertical form, fill and seal machine	-	-
7.4	Pre-made bag erect fill and close machine	-	-
7.5	Mandrel flexible package form, fill and seal machine	-	-
7.6	Horizontal end load cartoner	-	-
7.7	Thermoform, fill and seal machine	-	-
	In addition to the requirements of 7.1, the instructions for a thermoform, fill and seal machine shall include the following information:	-	-
a)	The method of installing feeding devices;	It has been contained.	Pass
b)	The way to load reels of film onto the reel unwind mechanisms to avoid strain injuries;	It has been contained.	Pass
c)	The method of earthing the machine to avoid static build up;	It has been contained.	Pass
d)	The correct temperature for the heating chamber and sealing dies to avoid the risk of fire;	No this situation.	N/A
e)	The ventilation requirements to remove packaging materials fumes.	No this contained.	N/A
7.8	Auger filler	-	-
7.9	Volumetric cup filler	-	-
7.10	Volumetric piston filler	-	-
7.11	Gravimetric filler	-	-

3.2 EN 60204-1 test report

Test Report Content

This test report consists of:

*Main report

*Annex A

- Continuity of the protective bonding circuit
- Insulation resistance test
- Withstanding voltage test

General information:

The test results presented in this report relate only to the object tested and information given from applicant or manufacturer.

Test case verdicts:

Pass=Pass, Fail=Fail, N/A=Not applicable. Placed in the column marked“Verdict”.

This is a Computer generated Test Report.

×Information written in “Italic” or “Regular and bold” font style is a part of this “Test Report Form”.

CONTENT FOR ADDITIONAL INFORMATION

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 3 of 89

Clause	Requirement - test	Result	Verdict
1	Scope	-	-
2	Normative references	-	-
3	Terms and definitions	-	-
4	General requirements	-	-
4.1	General	-	-
	This part of IEC 60204 is intended to apply to electrical equipment used with a wide variety of machines and with a group of machines working together in a co-ordinated manner.	electrical equipment used in machines	Pass
	The risks associated with the hazards relevant to the electrical equipment shall be assessed as part of the overall requirements for risk assessment of the machine. This will determine the adequate risk reduction, and the necessary protective measures for persons who can be exposed to those hazards, while still maintaining an acceptable level of performance of the machine and its equipment.	See EN 14121-1 test report	Pass
4.2	Selection of equipment	-	-
4.2.1	General	-	-
	Electrical components and devices shall:	-	-
	- be suitable for their intended use; and	-	-
	- conform to relevant IEC standards where such exist; and	conform to relevant IEC standards	Pass
	- be applied in accordance with the supplier's instructions.	It has been applied in accordance with the supplier's instructions.	Pass
4.2.2	Electrical equipment in compliance with the EN 60439 series	-	-
	The electrical equipment of the machine shall satisfy the safety requirements identified by the risk assessment of the machine. Depending upon the machine, its intended use and its electrical equipment, the designer may select parts of the electrical equipment of the machine that are in compliance with EN 60439-1 and, as necessary, other relevant parts of the EN 60439 series.	It has been compliance with relevant parts of the EN 60439 series.	Pass
4.3	Electrical supply	-	-
4.3.1	General	-	-
	The electrical equipment shall be designed to operate correctly with the conditions of the	-	-

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 4 of 89

Clause	Requirement - test	Result	Verdict
	supply:		
	- as specified in 4.3.2 or 4.3.3, or	See 4.3.2 or 4.3.3 for details	Pass
	- as otherwise specified by the user, or	Not applicable.	N/A
	- as specified by the supplier in the case of a special source of supply such as an on-board generator.	Not applicable.	N/A
4.3.2	AC supplies	-	-
	Steady state voltage: 0,9 to 1,1 of nominal voltage.	0,9 to 1,1 of nominal voltage.	Pass
	0,99 to 1,01 of nominal frequency continuously; 0,98 to 1,02 short time.	0,99 to 1,01 of nominal frequency continuously; 0,98 to 1,02 short time.	Pass
	Harmonic distortion not exceeding 10 % of the total r.m.s. voltage between live conductors for the sum of the 2nd through to the 5th harmonic. An additional 2 % of the total r.m.s. voltage between live conductors for the sum of the 6th through to the 30th harmonic is permissible.	It met the requirements	Pass
	Neither the voltage of the negative sequence component nor the voltage of the zero sequence component in three-phase supplies exceeding 2 % of the positive sequence component.	It met the requirements	Pass
	Supply interrupted or at zero voltage for not more than 3 ms at any random time in the supply cycle with more than 1 s between successive interruptions.	It met the requirements	Pass
	Voltage dips not exceeding 20 % of the peak voltage of the supply for more than one cycle with more than 1 s between successive dips.	It met the requirements	Pass
4.3.3	DC supplies	-	-
	From batteries	Not applicable.	N/A
	0.85 to 1.15 of nominal voltage; 0.7 to 1.2 of nominal voltage in the case of battery-operated vehicles.	Not applicable.	N/A
	Voltage interruption not exceeding 5 ms.	Not applicable.	N/A
	From converting equipment	Not applicable.	N/A
	0.9 to 1.1 of nominal voltage.	Not applicable.	N/A
	Voltage interruption not exceeding 20 ms with more than 1 s between successive interruptions.	Not applicable.	N/A
	Ripple (peak-to-peak) Not exceeding 0.15 of nominal voltage.	Not applicable.	N/A

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 5 of 89

Clause	Requirement - test	Result	Verdict
4.3.4	Special supply systems	-	-
	For special supply systems such as on-board generators, the limits given in 4.3.2 and 4.3.3 may be exceeded provided that the equipment is designed to operate correctly with those conditions.	Not applicable	N/A
4.4	Physical environment and operating conditions	-	-
4.4.1	General	-	-
	The electrical equipment shall be suitable for the physical environment and operating conditions of its intended use.	It met the requirements	Pass
	The requirements of 4.4.2 to 4.4.8 cover the physical environment and operating conditions of the majority of machines covered by this part of EN 60204. When special conditions apply or the limits specified are exceeded, an agreement between user and supplier (see 4.1) is recommended.	See the follow clauch for details	Pass
4.4.2	Electromagnetic compatibility (EMC)	-	-
	The equipment shall not generate electromagnetic disturbances above levels that are appropriate for its intended operating environment. In addition, the equipment shall have a level of immunity to electromagnetic disturbances so that it can function in its intended environment.	It met the requirements	Pass
	Measures to limit the generation of electromagnetic disturbances, i.e. conducted and radiated emissions include: - power supply filtering; - cable shielding; - enclosures designed to minimize RF radiation; - RF suppression techniques.	Take the requirements to limit the generatation.	Pass
	Measures to enhance the immunity of the equipment against conducted and radiated RF disturbance include: - design of functional bonding system taking into account the following; - connection of sensitive electrical circuits to the chassis. Such terminations should be marked or labelled with the symbol IEC 60417-5020 (DB:2002-10):	The supplier has taken the requirement to limit the generation.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 6 of 89

Clause	Requirement - test	Result	Verdict
	<ul style="list-style-type: none"> - connection of the chassis to earth (PE) using a conductor with low RF impedance and as short as practicable; - connection of sensitive electrical equipment or circuits directly to the PE circuit or to a functional earthing conductor (PE), to minimize common mode disturbance. This latter terminal should be marked or labelled by the symbol IEC 60417-5018(DB:2002-10). - separation of sensitive circuits from disturbance sources; - enclosures designed to minimize RF transmission; 		
	EMC wiring practices:	-	-
	- using twisted conductors to reduce the effect of differential mode disturbances,	The supplier has taken the requirement to limit the generation.	Pass
	- keeping sufficient distance between conductors emitting disturbances and conductors of sensitive circuits,	Enough distance between the conductor emitting disturbances and conductors of sensitive circuits,	Pass
	- using cable orientation as close to 90° as possible when cables cross,	90°	Pass
	- running the conductors as close as possible to the ground plane,	as possible to the ground plane,	Pass
	- using electrostatic screens and/or electromagnetic shields with a low RF impedance termination.	using electrostatic screens	Pass
4.4.3	Ambient air temperature	-	-
	The minimum requirement for all electrical equipment is correct operation between air temperatures of +5 °C and +40 °C. For very hot environments (for example hot climates, steel mills, paper mills) and for cold environments, additional measures are recommended.	It met the requirement	Pass
4.4.4	Humidity	-	-
	The electrical equipment shall be capable of operating correctly when the relative humidity does not exceed 50% at a maximum temperature of +40°C. Higher relative humidities are permitted at lower temperature (for example 90% at 20°C).	It has been complied with.	Pass
	Harmful effects of occasional condensation shall	It has been considered when designed.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 7 of 89

Clause	Requirement - test	Result	Verdict
	be avoided by design of the equipment or, where necessary, by additional measures (for example built-in heaters, air conditioners, drain holes).		
4.4.5	altitude	-	-
	Electrical equipment shall be capable of operating correctly at altitudes up to 1000m above mean sea level.	It has been complied with.	Pass
4.4.6	Contaminants	-	-
	Electrical equipment shall be adequately protected against the ingress of solids and liquids (see 11.3).	It has been complied with.	Pass
	The electrical equipment shall be adequately protected against contaminants (for example dust, acids, corrosive gases, salts) that can be present in the physical environment in which the electrical equipment is to be installed.	It has been complied with.	Pass
4.4.7	Ionizing and non-ionizing radiation	-	-
	When equipment is subject to radiation (for example microwave, ultraviolet, lasers, X-rays), additional measures shall be taken to avoid malfunctioning of the equipment and accelerated deterioration of the insulation. A special agreement is recommended between the supplier and the user.	Not applicable.	N/A
4.4.8	Vibration, shock, and bump	-	-
	Undesirable effects of vibration, shock and bump (including those generated by the machine and its associated equipment and those created by the physical environment) shall be avoided by the selection of suitable equipment, by mounting it away from the machine, or by provision of anti-vibration mountings. A special agreement is recommended between the supplier and the user.	No this situation.	N/A
4.5	Transportation and storage	-	-
	Electrical equipment shall be designed to withstand, or suitable precautions shall be taken to protect against, the effects of transportation and storage temperatures within a range of -25 °C to +55 °C and for short periods not exceeding 24 h at up to +70 °C. Suitable means shall be provided to prevent damage from humidity,	The relevant environment condition has been described in the instruction manual.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 8 of 89

Clause	Requirement - test	Result	Verdict
	vibration, and shock. A special agreement can be necessary between the supplier and the user.		
4.6	Provisions for handling	-	-
	Heavy and bulky electrical equipment that has to be removed from the machine for transport, or that is independent of the machine, shall be provided with suitable means for handling by cranes or similar equipment.	It is moved by hand.	N/A
4.7	Installation and operation	-	-
	Electrical equipment shall be installed in accordance with the electrical equipment supplier's instructions.	The installation of each electrical component has been made according to the supplier's instruction.	Pass
5	Incoming supply conductor terminations and devices for disconnecting and switching off	-	-
5.1	Incoming supply conductor terminations	-	-
	It is recommended that, where practicable, the electrical equipment of a machine is connected to a single incoming supply. Where another supply is necessary for certain parts of the equipment (for example, electronic equipment that operates at a different voltage), that supply should be derived, as far as is practicable, from devices (for example, transformers, converters) forming part of the electrical equipment of the machine. For large complex machinery comprising a number of widely-spaced machines working together in a co-ordinated manner, there can be a need for more than one incoming supply depending upon the site supply arrangements (see 5.3.1).	a single incoming supply	Pass
	Unless a plug is provided with the machine for the connection to the supply (see 5.3.2 e), it is recommended that the supply conductors are terminated at the supply disconnecting device.	the supply conductors are terminated at the supply disconnecting device.	Pass
	Where a neutral conductor is used it shall be clearly indicated in the technical documentation of the machine, such as in the installation diagram and in the circuit diagram, and a separate insulated terminal, labelled N in accordance with 16.1, shall be provided for the neutral conductor.	a neutral conductor is clearly indicated in the technical documentation of the machine and a separate insulated terminal, labelled N in accordance.	Pass
	There shall be no connection between the neutral conductor and the protective bonding circuit	no connection between the neutral conductor and the protective bonding	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 9 of 89

Clause	Requirement - test	Result	Verdict
	inside the electrical equipment nor shall a combined PEN terminal be provided.	circuit inside the electrical equipment	
	Exception: a connection may be made between the neutral terminal and the PE terminal at the point of the connection of the power supply to the machine for TN-C systems.	Not applicable	N/A
	All terminals for the incoming supply connection shall be clearly identified in accordance with IEC 60445 and 16.1. For the identification of the external protective conductor terminal, see 5.2.	clearly identified	Pass
	See 17.8 for the provision of instructions for maintenance.	It met the requirements	Pass
5.2	Terminal for connection to the external protective earthing system	-	-
	For each incoming supply, a terminal shall be provided in the vicinity of the associated phase conductor terminals for connection of the machine to the external protective earthing system or to the external protective conductor, depending upon the supply distribution system.	It met the requirements	Pass
	The terminal shall be of such a size as to enable the connection of an external protective copper conductor with a cross-sectional area in accordance with Table 1.	It met the requirements	Pass
	Where an external protective conductor of a material other than copper is used, the terminal size shall be selected accordingly (see also 8.2.2).	Copper is used.	N/A
	At each incoming supply point, the terminal for connection of the external protective earthing system or the external protective conductor shall be marked or labelled with the letters PE (see IEC 60445).	labelled with the letters PE.	Pass
5.3	Supply disconnecting (isolating) device	-	-
5.3.1	General	-	-
	A supply disconnecting device shall be provided:	-	-
	- for each incoming source of supply to a machine(s);	be provided:	Pass
	- for each on-board power supply.	Not applicable	N/A
	The supply disconnecting device shall disconnect (isolate) the electrical equipment of the machine from the supply when required (for example for	It met the requirement	Pass

Clause	Requirement - test	Result	Verdict
	work on the machine, including the electrical equipment).		
	When two or more supply disconnecting devices are provided, protective interlocks for their correct operation shall also be provided in order to prevent a hazardous situation, including damage to the machine or to the work in progress.	Not applicable	N/A
5.3.2	Type	-	-
	The supply disconnecting device shall be one of the following types:	-	-
	a) switch-disconnector, with or without fuses, in accordance with IEC 60947-3, utilization category AC-23B or DC-23B;	A switch-disconnector	Pass
	b) disconnector, with or without fuses, in accordance with IEC 60947-3, that has an auxiliary contact that in all cases causes switching devices to break the load circuit before the opening of the main contacts of the disconnector;	Not applicable	N/A
	c) a circuit-breaker suitable for isolation in accordance with IEC 60947-2;	Not applicable	N/A
	d) any other switching device in accordance with an IEC product standard for that device and which meets the isolation requirements of IEC 60947-1 as well as a utilization category defined in the product standard as appropriate for on-load switching of motors or other inductive loads;	Not applicable	N/A
	e) a plug/socket combination for a flexible cable supply.	Not applicable	N/A
5.3.3	Requirements	-	-
	When the supply disconnecting device is one of the types specified in 5.3.2 a) to d) it shall fulfil all of the following requirements:	-	-
	- isolate the electrical equipment from the supply and have one OFF (isolated) and one ON position marked with "O" and "I" (symbols IEC 60417-5008 (DB:2002-10) and IEC 60417-5007 (DB:2002-10), see 10.2.2);	Marked O.	Pass
	- have a visible contact gap or a position indicator which cannot indicate OFF (isolated) until all	Not applicable	N/A

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 11 of 89

Clause	Requirement - test	Result	Verdict
	contacts are actually open and the requirements for the isolating function have been satisfied;		
	- have an external operating means (for example handle), (exception: power-operated switchgear need not be operable from outside the enclosure where there are other means to open it). Where the external operating means is not intended for emergency operations, it is recommended that it be coloured BLACK or GREY (see 10.7.4 and 10.8.4);	have an external operating means	Pass
	- be provided with a means permitting it to be locked in the OFF (isolated) position (for example by padlocks). When so locked, remote as well as local closing shall be prevented;	Not applicable	N/A
	- disconnect all live conductors of its power supply circuit. However, for TN supply systems, the neutral conductor may or may not be disconnected except in countries where disconnection of the neutral conductor (when used) is compulsory;	No TN supply system.	Pass
	- have a breaking capacity sufficient to interrupt the current of the largest motor when stalled together with the sum of the normal running currents of all other motors and/or loads. The calculated breaking capacity may be reduced by the use of a proven diversity factor.	A breaking capacity is supplied.	Pass
	When the supply disconnecting device is a plug/socket combination, it shall fulfil the following requirements:	-	-
	- have the switching capability, or be interlocked with a switching device that has a breaking capacity, sufficient to interrupt the current of the largest motor when stalled together with the sum of the normal running currents of all other motors and/or loads. The calculated breaking capacity may be reduced by the use of a proven diversity factor. When the interlocked switching device is electrically operated (for example a contactor) it shall have an appropriate utilisation category.	A switching device with a breaking capacity is supplied.	Pass
	- a) to f) of 13.4.5.	-	-
	Where the supply disconnecting device is a	A switching device with an appropriate	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 12 of 89

Clause	Requirement - test	Result	Verdict
	plug/socket combination, a switching device with an appropriate utilisation category shall be provided for switching the machine on and off. This can be achieved by the use of the interlocked switching device described above.	utilisation category is provided for switching the machine on and off.	
5.3.4	Operating means		Pass
	The operating means (for example, a handle) of the supply disconnecting device shall be easily accessible and located between 0,6 m and 1,9 m above the servicing level. An upper limit of 1,7 m is recommended.	It met the requirement	Pass
5.3.5	Excepted circuits		Pass
	The following circuits need not be disconnected by the supply disconnecting device:	-	-
	- lighting circuits for lighting needed during maintenance or repair;	No this situation.	N/A
	- plug and socket outlets for the exclusive connection of repair or maintenance tools and equipment (for example hand drills, test equipment);	No this situation.	N/A
	- undervoltage protection circuits that are only provided for automatic tripping in the event of supply failure;	It met the requirement	Pass
	- circuits supplying equipment that should normally remain energized for correct operation (for example temperature controlled measuring devices, product (work in progress) heaters, program storage devices);	It met the requirement	Pass
	- control circuits for interlocking.	It met the requirement	Pass
	It is recommended, however, that such circuits be provided with their own disconnecting device.	No this situation.	N/A
	Where such a circuit is not disconnected by the supply disconnecting device:	-	-
	- permanent warning label(s) in accordance with 16.1 shall be appropriately placed in proximity to the supply disconnecting device;	It met the requirement	Pass
	- a corresponding statement shall be included in the maintenance manual, and one or more of the following shall apply;	It met the requirement	Pass
	- a permanent warning label in accordance with 16.1 is affixed in proximity to each excepted	It met the requirement	Pass

Clause	Requirement - test	Result	Verdict
	circuit, or		
	- the excepted circuit is separated from other circuits, or	No this situation.	N/A
	- the conductors are identified by colour taking into account the recommendation of 13.2.4.	No this situation.	N/A
5.4	Devices for switching off for prevention of unexpected start-up	-	-
	Devices for switching off for the prevention of unexpected start-up shall be provided (for example where, during maintenance, a start-up of the machine or part of the machine can create a hazard).	It met the requirement	Pass
	Such devices shall be appropriate and convenient for the intended use, shall be suitably placed, and readily identifiable as to their function and purpose (for example by a durable marking in accordance with 16.1 where necessary).	It met the requirement	Pass
	Means shall be provided to prevent inadvertent and/or mistaken closure of these devices either at the controller or from other locations (see also 5.6).	It met the requirement	Pass
	The following devices that fulfil the isolation function may be provided for this purpose:	-	-
	- devices described in 5.3.2,	It met the requirement	Pass
	- disconnectors, withdrawable fuse links and withdrawable links only if located in an enclosed electrical operating area (see 3.19).	No any fuse is used.	N/A
	Devices that do not fulfil the isolation function (for example a contactor switched off by a control circuit) may only be provided where intended to be used for situations that include:	-	-
	- inspections;	No this situation.	N/A
	- adjustments;	No this situation.	N/A
	- work on the electrical equipment where: - there is no hazard arising from electric shock (see Clause 6) and burn; - the switching off means remains effective throughout the work; - the work is of a minor nature (for example replacement of plug-in devices without disturbing existing wiring).	No this situation.	N/A

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 14 of 89

Clause	Requirement - test	Result	Verdict
5.5	Devices for disconnecting electrical equipment	-	-
	Devices shall be provided for disconnecting (isolating) electrical equipment to enable work to be carried out when it is de-energised and isolated. Such devices shall be:	-	-
	- appropriate and convenient for the intended use;	It met the requirement	Pass
	- suitably placed;	It met the requirement	Pass
	- readily identifiable as to which part(s) or circuit(s) of the equipment is served (for example by durable marking in accordance with 16.1 where necessary).	It met the requirement	Pass
	Means shall be provided to prevent inadvertent and/or mistaken closure of these devices either at the controller or from other locations (see also 5.6).	It met the requirement	Pass
	The supply disconnecting device (see 5.3) may, in some cases, fulfil that function. However, where it is necessary to work on individual parts of the electrical equipment of a machine, or on one of a number of machines fed by a common conductor bar, conductor wire or inductive power supply system, a disconnecting device shall be provided for each part, or for each machine, requiring separate isolation.	It met the requirement	Pass
	In addition to the supply disconnecting device, the following devices that fulfil the isolation function may be provided for this purpose:	-	-
	- devices described in 5.3.2;	It met the requirement	Pass
	- disconnectors, withdrawable fuse links and withdrawable links only if located in an electrical operating area (see 3.15) and relevant information is provided with the electrical equipment (see 17.2 b)9) and b)12)).	No this situation.	N/A
5.6	Protection against unauthorized, inadvertent and/or mistaken connection	-	-
	The devices described in 5.4 and 5.5 that are located outside an enclosed electrical operating area shall be equipped with means to secure them in the OFF position (disconnected state), (for example by provisions for padlocking, trapped key interlocking). When so secured, remote as	It met the requirement	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 15 of 89

Clause	Requirement - test	Result	Verdict
	well as local reconnection shall be prevented.		
	Where a non-lockable disconnecting device (for example withdrawable fuse-links, withdrawable links) other means of protection against reconnection (for example warning labels in accordance with 16.1) may be provided.	No this situation.	N/A
	However, when a plug/socket combination according to 5.3.2 e) is so positioned that it can be kept under the immediate supervision of the person carrying out the work, means for securing in the disconnected state need not be provided.	No this situation.	N/A
6	Protection against electric shock	-	-
6.1	General	-	-
	The electrical equipment shall provide protection of persons against electric shock from:	-	-
	- direct contact (see 6.2 and 6.4);	Please see the following statements.	Pass
	- indirect contact (see 6.3 and 6.4).	Please see the following statements.	Pass
	The measures for this protection given in 6.2, 6.3, and, for PELV, in 6.4, are a recommended selection from IEC 60364-4-41. Where those recommended measures are not practicable, for example due to the physical or operational conditions, other measures from IEC 60364-4-41 may be used.	It met the requirement	Pass
6.2	Protection against direct contact	-	-
6.2.1	General	-	-
	For each circuit or part of the electrical equipment, the measures of either 6.2.2 or 6.2.3 and, where applicable, 6.2.4 shall be applied.	Please see the following statements.	Pass
	Exception: where those measures are not appropriate, other measures for protection against direct contact (for example by using barriers, by placing out of reach, using obstacles, using construction or installation techniques that prevent access) as defined in IEC 60364-4-41 may be applied (see 6.2.5 and 6.2.6).	It met the requirement	Pass
	When the equipment is located in places open to all persons, which can include children, measures of either 6.2.2 with a minimum degree of protection against direct contact corresponding to IP4X or IPXXD (see IEC 60529), or 6.2.3 shall	It met the requirement	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 16 of 89

Clause	Requirement - test	Result	Verdict
	be applied.		
6.2.2	Protection by enclosures	-	-
	Live parts shall be located inside enclosures that conform to the relevant requirements of Clauses 4, 11, and 14 and that provide protection against direct contact of at least IP2X or IPXXB (see IEC 60529).	Minimum protection degree for live part while cover of control cabinet is IP2X	Pass
	Where the top surfaces of the enclosure are readily accessible, the minimum degree of protection against direct contact provided by the top surfaces shall be IP4X or IPXXD.	IP54 for the top surface.	Pass
	Opening an enclosure (i.e. opening doors, lids, covers, and the like) shall be possible only under one of the following conditions:	-	-
	a) The use of a key or tool is necessary for access. For enclosed electrical operating areas, see IEC 60364-4-41, or IEC 60439-1 as appropriate.	Not tool and key have been used for the skilled person.	N/A
	All live parts, that are likely to be touched when resetting or adjusting devices intended for such operations while the equipment is still connected, shall be protected against direct contact to at least IP2X or IPXXB. Other live parts on the inside of doors shall be protected against direct contact to at least IP1X or IPXXA.	IP 2X has been used for the skilled person.	Pass
	b) The disconnection of live parts inside the enclosure before the enclosure can be opened. This may be accomplished by interlocking the door with a disconnecting device (for example, the supply disconnecting device) so that the door can only be opened when the disconnecting device is open and so that the disconnecting device can only be closed when the door is closed.	By the use of hand-operated power disconnection device the requirement of this clause could be ensured.	Pass
	Exception: a special device or tool as prescribed by the supplier can be used to defeat the interlock provided that:	-	-
	- it is possible at all times while the interlock is defeated to open the disconnecting device and lock the disconnecting device in the OFF (isolated) position or otherwise prevent	It met the requirement	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 17 of 89

Clause	Requirement - test	Result	Verdict
	unauthorised closure of the disconnecting device;		
	- upon closing the door, the interlock is automatically restored;	It met the requirement	Pass
	- all live parts, that are likely to be touched when resetting or adjusting devices intended for such operations while the equipment is still connected, are protected against direct contact to at least IP2X or IPXXB and other live parts on the inside of doors are protected against direct contact to at least IP1X or IPXXA;	No this situation.	N/A
	- relevant information is provided with the electrical equipment (see 17.2 b)9) and b)12)).	No this situation.	N/A
	Means shall be provided to restrict access to live parts behind doors not directly interlocked with the disconnecting means to skilled or instructed persons. (See 17.2 b)12)).	It met the requirement	Pass
	All parts that are still live after switching off the disconnecting device(s) (see 5.3.5) shall be protected against direct contact to at least IP2X or IPXXB (see IEC 60529). Such parts shall be marked with a warning sign in accordance with 16.2.1 (see also 13.2.4 for identification of conductors by colour).	IP 2X has been used for the protection of cable inlet connection.	Pass
	Excepted from this requirement for marking are:	-	-
	- parts that can be live only because of connection to interlocking circuits and that are distinguished by colour as potentially live in accordance with 13.2.4;	No this situation.	N/A
	- the supply terminals of the supply disconnecting device when the latter is mounted alone in a separate enclosure.	No this situation.	N/A
	c) Opening without the use of a key or a tool and without disconnection of live parts shall be possible only when all live parts are protected against direct contact to at least IP2X or IPXXB (see IEC 60529). Where barriers provide this protection, either they shall require a tool for their removal or all live parts protected by them shall be automatically disconnected when the barrier is removed.	No this situation.	N/A
6.2.3	Protection by insulation of live parts	-	-

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 18 of 89

Clause	Requirement - test	Result	Verdict
	Live parts shall be covered by insulation which can only be removed by destruction	Live part has been covered appropriately.	Pass
	Such insulation shall withstand the mechanical, chemical, electrical and thermal stresses under normal service conditions	Insulation could withstand the mechanical stress under normal service conditions.	Pass
6.2.4	Protection against residual voltages	-	-
	Live parts having a residual voltage greater than 60 V after the supply has been disconnection shall be discharged to 60V or less within a time period of 5 s after disconnection of the supply voltage provided that this rate of discharge does not interfere with the proper functioning of the equipment. Exempted from this requirement are components having a stored charge of 60 μ C or less. Where this specified rate of discharge would interfere with the proper functioning of the equipment, a durable warning notice drawing attention to the hazard and stating the delay required before the enclosure may be opened shall be displayed at an easily visible location on or immediately adjacent to the enclosure containing the capacitances.	In any situation, the voltage could even drop to 0V within one second.	Pass
	In the case of plugs or similar devices, the withdrawal of which results in the exposure of conductors (for example pins), the discharge time shall not exceed 1 s, otherwise such conductors shall be protected against direct contact to at least IP2X or IPXXB. If neither a discharge time of 1 s nor a protection of at least IP2X or IPXXB can be achieved (for example in the case of removable collectors on conductor wires, conductor bars, or slip-ring assemblies, see 12.7.4), additional switching devices or an appropriate warning device (for example a warning notice in accordance with 16.1) shall be applied.	No this situation.	N/A
6.2.5	Protection by barriers	-	-
	For protection by barriers, 412.2 of IEC 60364-4-41 shall apply.	No this situation.	N/A
6.2.6	Protection by placing out of reach or protection by obstacles	-	-
	For protection by placing out of reach see 412.4	No this situation.	N/A

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 19 of 89

Clause	Requirement - test	Result	Verdict
	of IEC 60364-4-41 shall apply.		
	For protection by obstacles see 412.3 of IEC 60364-4-41 shall apply.	No this situation.	N/A
	For collector wire systems or collector bar systems with a degree of protection less than IP2X see 12.7.1	No this situation.	N/A
6.3	Protection against indirect contact	-	-
6.3.1	General	-	-
	Protection against indirect contact (3.29) is intended to prevent hazardous situations due to an insulation fault between live parts and exposed conductive parts.	It met the requirement	Pass
	For each circuit or part of the electrical equipment, at least one of the measures in accordance with 6.3.2 to 6.3.3 shall be applied:	-	-
	- measures to prevent the occurrence of a touch voltage (6.3.2); or	It met the requirement	Pass
	- automatic disconnection of the supply before the time of contact with a touch voltage can become hazardous (6.3.3).	No this situation.	N/A
6.3.2	Prevention of the occurrence of a touch voltage	-	-
6.3.2.1	General	-	-
	Measures to prevent the occurrence of a touch voltage include the following:	-	-
	- provision of class II equipment or by equivalent insulation;	By equivalent insulation.	Pass
	- electrical separation.	No this situation.	N/A
6.3.2.2	Protection by provision of class II equipment or by equivalent insulation	-	-
	This measure is intended to prevent the occurrence of touch voltages on the accessible parts through a fault in the basic insulation.	It met the requirement	Pass
	This protection is provided by one or more of the following:	-	-
	- class II electrical devices or apparatus (double insulation, equivalent insulation in accordance with IEC 61140);	By equivalent insulation.	Pass
	- switchgear and controlgear assemblies having total with IEC 60439-1;	No this situation.	N/A
	- supplementary or reinforced insulation in	No this situation.	N/A

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 20 of 89

Clause	Requirement - test	Result	Verdict
	accordance with 413.2 of IEC 60364-4-41.		
6.3.2.3	Protection by electrical separation	-	-
	Electrical separation of an individual circuit is intended to prevent a touch voltage through contact with exposed conductive parts that can be energized by a fault in the basic insulation of the live parts of that circuit.	Appropriate electrical separation has been used for this machine.	Pass
	For this type of protection, the requirements of 413.5 of IEC 60364-4-41 apply.	It met the requirement	Pass
6.3.3	Protection by automatic disconnection of supply	-	-
	This measure consists of the interruption of one or more of the line conductors by the automatic operation of a protective device in case of a fault. This interruption shall occur within a sufficiently short time to limit the duration of a touch voltage to a time within which the touch voltage is not hazardous. Interruption times are given in Annex A.	No this situation.	N/A
	This measure necessitates co-ordination between:	-	-
	- the type of supply and earthing system;	No this situation.	N/A
	- the impedance values of the different elements of the protective bonding system;	No this situation.	N/A
	- the characteristics of the protective devices that detect insulation fault(s).	No this situation.	N/A
	Automatic disconnection of the supply of any circuit affected by an insulation fault is intended to prevent a hazardous situation resulting from a touch voltage.	No this situation.	N/A
	This protective measure comprises both:	-	-
	- protective bonding of exposed conductive parts (see 8.2.3),	No this situation.	N/A
	- and either:	-	-
	a) overcurrent protective devices for the automatic disconnection of the supply on detection of an insulation fault in TN systems, or	No this situation.	N/A
	b) residual current protective devices to initiate the automatic disconnection of the supply on detection of an insulation fault from a live part to exposed conductive parts or to earth in TT systems, or	No this situation.	N/A

Clause	Requirement - test	Result	Verdict
	c) insulation monitoring or residual current protective devices to initiate automatic disconnection of IT systems. Except where a protective device is provided to interrupt the supply in the case of the first earth fault, an insulation monitoring device shall be provided to indicate the occurrence of a first fault from a live part to exposed conductive parts or to earth. This insulation monitoring device shall initiate an audible and/or visual signal which shall continue as long as the fault persists.	No this situation.	N/A
	Where automatic disconnection is provided in accordance with a), and disconnection within the time specified in Clause A.1 cannot be assured, supplementary bonding shall be provided as necessary to meet the requirements of Clause A.3.	No this situation.	N/A
6.4	Protection by the use of PELV	-	-
6.4.1	General requirements	-	-
	The use of PELV (Protective Extra-Low Voltage) is to protect persons against electric shock from indirect contact and limited area direct contact (see 8.2.5).	It met the requirement	Pass
	PELV circuits shall satisfy all of the following conditions:	-	-
	a) the nominal voltage shall not exceed:	-	-
	<ul style="list-style-type: none"> 25 V a.c. r.m.s. or 60 V ripple-free d.c. when the equipment is normally used in dry locations and when large area contact of live parts with the human body is not expected; or 	It met the requirement	Pass
	<ul style="list-style-type: none"> 6 V a.c. r.m.s. or 15 V ripple-free d.c. in all other cases; 	No this situation.	N/A
	b) one side of the circuit or one point of the source of the supply of that circuit shall be connected to the protective bonding circuit;	It met the requirement	Pass
	c) live parts of PELV circuits shall be electrically separated from other live circuits. Electrical separation shall be not less than that required between the primary and secondary circuits of a	It met the requirement	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 22 of 89

Clause	Requirement - test	Result	Verdict
	safety isolating transformer (see IEC 61558-1 and IEC 61558-2-6);		
	d) conductors of each PELV circuit shall be physically separated from those of any other circuit. When this requirement is impracticable, the insulation provisions of 13.1.3 shall apply;	It met the requirement	Pass
	e) plugs and socket-outlets for a PELV circuit shall conform to the following:	-	-
	1) plugs shall not be able to enter socket-outlets of other voltage systems;	No this situation.	N/A
	2) socket-outlets shall not admit plugs of other voltage systems.	No this situation.	N/A
6.4.2	Sources for PELV	-	-
	The source for PELV shall be one of the following:	-	-
	- a safety isolating transformer in accordance with IEC 61558-1 and IEC 61558-2-6;	No this situation.	N/A
	- a source of current providing a degree of safety equivalent to that of the safety isolating transformer (for example a motor generator with winding providing equivalent isolation);	It met the requirement	Pass
	- an electrochemical source (for example a battery) or another source independent of a higher voltage circuit (for example a diesel-driven generator);	No this situation.	N/A
	- an electronic power supply conforming to appropriate standards specifying measures to be taken to ensure that, even in the case of an internal fault, the voltage at the outgoing terminals cannot exceed the values specified in 6.4.1.	No this situation.	N/A
7	Protection of equipment	-	-
7.1	General	-	-
	This Clause details the measures to be taken to protect equipment against the effects of:	-	-
	- overcurrent arising from a short circuit;	It met the requirement	Pass
	- overload and/or loss of cooling of motors;	It met the requirement	Pass
	- abnormal temperature;	It met the requirement	Pass
	- loss of or reduction in the supply voltage;	It met the requirement	Pass
	- overspeed of machines/machine elements;	It met the requirement	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 23 of 89

Clause	Requirement - test	Result	Verdict
	- earth fault/residual current;	It met the requirement	Pass
	- incorrect phase sequence;	It met the requirement	Pass
	- overvoltage due to lightning and switching surges.	It met the requirement	Pass
7.2	Overcurrent protection	-	-
7.2.1	General	-	-
	Overcurrent protection shall be provided where the current in a machine circuit can exceed either the rating of any component or the current carrying capacity of the conductors, whichever is the lesser value. The ratings or settings to be selected are detailed in 7.2.10.	It met the requirement	Pass
7.2.2	Supply conductors	-	-
	Unless otherwise specified by the user, the supplier of the electrical equipment is not responsible for providing the overcurrent protective device for the supply conductors to the electrical equipment (see Annex B).	The manufacturer does not provide the over-current protection for the whole machine.	Pass
	The supplier of the electrical equipment shall state on the installation diagram the data necessary for selecting the overcurrent protective device (see 7.2.10 and 17.4).	The data necessary for over current protective device is provided in the electrical installation diagram.	Pass
7.2.3	Power circuits	-	-
	Devices for detection and interruption of overcurrent, selected in accordance with 7.2.10, shall be applied to each live conductor.	Each power circuit has their overcurrent protective device.	Pass
	The following conductors, as applicable, shall not be disconnected without disconnecting all associated live conductors:	-	-
	- the neutral conductor of a.c. power circuits;	No this situation.	N/A
	- the earthed conductor of d.c. power circuits;	It met the requirement	Pass
	- d.c. power conductors bonded to exposed conductive parts of mobile machines.	It met the requirement	Pass
	Where the cross-sectional area of the neutral conductor is at least equal to or equivalent to that of the phase conductors, it is not necessary to provide overcurrent detection for the neutral conductor nor a disconnecting device for that conductor. For a neutral conductor with a cross-sectional area smaller than that of the associated phase conductors, the measures detailed in 524 of	The cross-section area of neutral conductor is 6mm ²	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 24 of 89

Clause	Requirement - test	Result	Verdict
	IEC 60364-5-52 shall apply.		
	In IT systems, it is recommended that the neutral conductor is not used. However, where a neutral conductor is used, the measures detailed in 431.2.2 of IEC 60364-4-43 shall apply.	No this situation.	N/A
7.2.4	Control circuits	-	-
	Conductors of control circuits directly connected to the supply voltage and of circuits supplying control circuit transformers shall be protected against overcurrent in accordance with 7.2.3.	It met the requirement	Pass
	Conductors of control circuits supplied by a control circuit transformer or d.c. supply shall be protected against overcurrent (see also 9.4.3.1):	-	-
	- in control circuits connected to the protective bonding circuit, by inserting an overcurrent protective device into the switched conductor;	It met the requirement	Pass
	- in control circuits not connected to the protective bonding circuit;	It met the requirement	Pass
	- where the same cross sectional area conductors are used in all control circuits, by inserting an overcurrent protective device into the switched conductor, and;	It met the requirement	Pass
	- where different cross sectional areas conductors are used in different sub-circuits, by inserting an overcurrent protective device into both switched and common conductors of each sub-circuit.	It met the requirement	Pass
7.2.5	Socket outlets and their associated conductors	-	-
	Overcurrent protection shall be provided for the circuits feeding the general purpose socket outlets intended primarily for supplying power to maintenance equipment. Overcurrent protective devices shall be provided in the unearthed live conductors of each circuit feeding such socket outlets.	No socket outlet is used for this machine.	N/A
7.2.6	Lighting circuits	-	-
	All unearthed conductors of circuits supplying lighting shall be protected against the effects of short circuits by the provision of overcurrent devices separate from those protecting other circuits	No lighting circuit is used for this machine.	N/A

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 25 of 89

Clause	Requirement - test	Result	Verdict
7.2.7	Transformers	-	-
	Transformers shall be protected against overcurrent in accordance with the manufacturer's instructions. Such protection shall (see also 7.2.10):	No transformer is used for this machine.	N/A
	- avoid nuisance tripping due to transformer magnetizing inrush currents;	No transformer is used for this machine.	N/A
	- avoid a winding temperature rise in excess of the permitted value for the insulation class of transformer when it is subjected to the effects of a short circuit at its secondary terminals.	No transformer is used for this machine.	N/A
	The type and setting of the overcurrent protective device should be in accordance with the recommendations of the transformer supplier.	No transformer is used for this machine.	N/A
7.2.8	Location of overcurrent protective devices	-	-
	An overcurrent protective device shall be located at the point where a reduction in the cross-sectional area of the conductors or another change reduces the current-carrying capacity of the conductors, except where all the following conditions are satisfied:	It met the requirement	Pass
	- the current carrying capacity of the conductors is at least equal to that of the load;	It met the requirement	Pass
	- the part of the conductor between the point of reduction of current-carrying capacity and the position of the overcurrent protective device is no longer than 3 m;	It met the requirement	Pass
	- the conductor is installed in such a manner as to reduce the possibility of a short-circuit, for example, protected by an enclosure or duct.	It met the requirement	Pass
7.2.9	Overcurrent protective devices	-	-
	The rated short-circuit breaking capacity shall be at least equal to the prospective fault current at the point of installation. Where the short-circuit current to an overcurrent protective device can include additional currents other than from the supply (for example from motors, from power factor correction capacitors), those currents shall be taken into consideration.	It met the requirement	Pass
	A lower breaking capacity is permitted where another protective device (for example the	It met the requirement	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 26 of 89

Clause	Requirement - test	Result	Verdict
	overcurrent protective device for the supply conductors (see 7.2.2) having the necessary breaking capacity is installed on the supply side. In that case, the characteristics of the two devices shall be co-ordinated so that the let-through energy (I ² t) of the two devices in series does not exceed that which can be withstood without damage to the overcurrent protective device on the load side and to the conductors protected by that device (see Annex A of IEC 60947-2).		
	Where fuses are provided as overcurrent protective devices, a type readily available in the country of use shall be selected, or arrangements shall be made for the supply of spare parts.	No fuse is used for this machine.	N/A
7.2.10	Rating and setting of overcurrent protective devices	-	-
	The rated current of fuses or the setting current of other overcurrent protective devices shall be selected as low as possible but adequate for the anticipated overcurrents (for example during starting of motors or energizing of transformers). When selecting those protective devices, consideration shall be given to the protection of switching devices against damage due to overcurrents (for example welding of the switching device contacts).	The rating and setting of overcurrent protective device is appropriate.	Pass
	The rated current or setting of an overcurrent protective device is determined by the current carrying capacity of the conductors to be protected in accordance with 12.4, D.2 and the maximum allowable interrupting time t in accordance with Clause D.3, taking into account the needs of co-ordination with other electrical devices in the protected circuit.	The rating and setting of overcurrent protective device is appropriate.	Pass
7.3	Protection of motors against overheating	-	-
7.3.1	General	-	-
	Protection of motors against overheating shall be provided for each motor rated at more than 0,5 kW.	It met the requirement	Pass
	Exceptions: In applications where an automatic interruption of the motor operation is	No this situation.	N/A

Clause	Requirement - test	Result	Verdict
	unacceptable (for example fire pumps), the means of detection shall give a warning signal to which the operator can respond.		
	Protection of motors against overheating can be achieved by:	-	-
	- overload protection (7.3.2),	It met the requirement	Pass
	- over-temperature protection (7.3.3), or	No this situation.	N/A
	- current-limiting protection (7.3.4).	No this situation.	N/A
	Automatic restarting of any motor after the operation of protection against overheating shall be prevented where this can cause a hazardous situation or damage to the machine or to the work in progress	Automatic restarting of any motor after the operation of overload protection is prevented.	Pass
7.3.2	Overload protection	-	-
	Where overload protection is provided, detection of overload(s) shall be provided in each live conductor except for the neutral conductor. However, where the motor overload detection is not used for cable overload protection (see also Clause D.2), the number of overload detection devices may be reduced at the request of the user (see also Annex B). For motors having single-phase or d.c. power supplies, detection in only one unearthed live conductor is permitted.	Detection of overload has been provided in each live conductor excepted for the neutral conductor.	Pass
	Where overload protection is achieved by switching off, the switching device shall switch off all live conductors. The switching of the neutral conductor is not necessary for overload protection.	The switching device has been switched off all live conductors.	Pass
	Where motors with special duty ratings are required to start or to brake frequently (for example, motors for rapid traverse, locking, rapid reversal, sensitive drilling) it can be difficult to provide overload protection with a time constant comparable with that of the winding to be protected. Appropriate protective devices designed to accommodate special duty motors or over-temperature protection (see 7.3.3) can be necessary.	No this situation.	N/A
	For motors that cannot be overloaded (for example torque motors, motion drives that either	No this situation.	N/A

Clause	Requirement - test	Result	Verdict
	are protected by mechanical overload protection devices or are adequately dimensioned), overload protection is not required.		
7.3.3	Over-temperature protection	-	-
	The provision of motors with over-temperature protection (see IEC 60034-11) is recommended in situations where the cooling can be impaired (for example dusty environments). Depending upon the type of motor, protection under stalled rotor or loss of phase conditions is not always ensured by over-temperature protection, and additional protection should then be provided.	No this situation.	N/A
	Over-temperature protection is also recommended for motors that cannot be overloaded (for example torque motors, motion drives that are either protected by mechanical overload protection devices or are adequately dimensioned), where the possibility of over-temperature exists (for example due to reduced cooling).	No this situation.	N/A
7.3.4	Current limiting protection	-	-
	Where protection against the effects of overheating in three phase motors is achieved by current limitation, the number of current limitation devices may be reduced from 3 to 2 (see 7.3.2). For motors having single phase a.c or d.c. power supplies, current limitation in only one unearthed live conductor is permitted.	No this situation.	N/A
7.4	Abnormal temperature protection	-	-
	Resistance heating or other circuits that are capable of attaining or causing abnormal temperatures (for example, due to short-time rating or loss of cooling medium) and therefore can cause a hazardous situation shall be provided with suitable detection to initiate an appropriate control response.	Abnormal temperature protection has been provided for the heating and injection is prevented.	Pass
7.5	Protection against supply interruption or voltage reduction and subsequent restoration	-	-
	Where a supply interruption or a voltage reduction can cause a hazardous situation, damage to the machine, or to the work in	No under-voltage protection is used for this machine.	N/A

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 29 of 89

Clause	Requirement - test	Result	Verdict
	progress, undervoltage protection shall be provided by, for example, switching off the machine at a predetermined voltage level.		
	Where the operation of the machine can allow for an interruption or a reduction of the voltage for a short time period, delayed undervoltage protection may be provided. The operation of the undervoltage device shall not impair the operation of any stopping control of the machine.	No under-voltage protection is used for this machine.	N/A
	Upon restoration of the voltage or upon switching on the incoming supply, automatic or unexpected restarting of the machine shall be prevented where such a restart can cause a hazardous situation.	Automatic or unexpected restarting of the machine has been prevented.	Pass
	Where only a part of the machine or of the group of machines working together in a co-ordinated manner is affected by the voltage reduction or supply interruption, the undervoltage protection shall initiate appropriate control responses to ensure co-ordination.	No under-voltage protection is used for this machine.	N/A
7.6	Motor overspeed protection	-	-
	Overspeed protection shall be provided where overspeeding can occur and could possibly cause a hazardous situation taking into account measures in accordance with 9.3.2. Overspeed protection shall initiate appropriate control responses and shall prevent automatic restarting.	No motor over-speed protection is used for this machine.	N/A
	The overspeed protection should operate in such a manner that the mechanical speed limit of the motor or its load is not exceeded.	No motor over-speed protection is used for this machine.	N/A
7.7	Earth fault/residual current protection	-	-
	In addition to providing overcurrent protection for automatic disconnection as described in 6.3, earth fault/residual current protection can be provided to reduce damage to equipment due to earth fault currents less than the detection level of the overcurrent protection.	No this situation.	N/A
	The setting of the devices shall be as low as possible consistent with correct operation of the equipment.	It met the requirement	Pass
7.8	Phase sequence protection	-	-

Clause	Requirement - test	Result	Verdict
	Where an incorrect phase sequence of the supply voltage can cause a hazardous situation or damage to the machine, protection shall be provided.	No this situation.	N/A
7.9	Protection against overvoltages due to lightning and to switching surges	-	-
	Protective devices can be provided to protect against the effects of overvoltages due to lightning or to switching surges.	No additional protection for this purpose is provided.	N/A
	Where provided:	-	-
	- devices for the suppression of overvoltages due to lightning shall be connected to the incoming terminals of the supply disconnecting device.	No this situation.	N/A
	- devices for the suppression of overvoltages due to switching surges shall be connected across the terminals of all equipment requiring such protection.	No this situation.	N/A
8	Equipotential bonding	-	-
8.1	General	-	-
	This Clause provides requirements for both protective bonding and functional bonding. Figure 2 illustrates those concepts.	It met the requirement	Pass
	Protective bonding is a basic provision for fault protection to enable protection of persons against electric shock from indirect contact (see 6.3.3 and 8.2).	It met the requirement	Pass
	The objective of functional bonding (see 8.3) is to minimize:	-	-
	- the consequence of an insulation failure which could affect the operation of the machine;	It met the requirement	Pass
	- the consequences of electrical disturbances to sensitive electrical equipment which could affect the operation of the machine.	No this situation.	N/A
	Normally functional bonding is achieved by connection to the protective bonding circuit, but where the level of electrical disturbances on the protective bonding circuit is not sufficiently low for proper functioning of electrical equipment, it may be necessary to connect the functional bonding circuit to a separate functional earthing conductor (see Figure 2).	It met the requirement	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 31 of 89

Clause	Requirement - test	Result	Verdict
8.2	Protective bonding circuit	-	-
8.2.1	General	-	-
	The protective bonding circuit consists of:	-	-
	- PE terminal(s) (see 5.2);	It met the requirement	Pass
	- the protective conductors in the equipment of the machine including sliding contacts where they are part of the circuit;	No this situation.	N/A
	- the exposed conductive parts and conductive structural parts of the electrical equipment;	No this situation.	N/A
	- those extraneous conductive parts which form the structure of the machine.	No this situation.	N/A
	All parts of the protective bonding circuit shall be so designed that they are capable of withstanding the highest thermal and mechanical stresses that can be caused by earth-fault currents that could flow in that part of the protective bonding circuit.	All parts of the protective bonding circuit are so designed that they are capable of withstanding the highest thermal and mechanical stresses.	Pass
	Where the conductance of structural parts of the electrical equipment or of the machine is less than that of the smallest protective conductor connected to the exposed conductive parts, a supplementary bonding conductor shall be provided. This supplementary bonding conductor shall have a cross-sectional area not less than half that of the corresponding protective conductor.	Some of structural part has been provide as part of provided as part of protective bonding circuit so as to get the better effect for protective bonding.	Pass
	If an IT distribution system is used, the machine structure shall be part of the protective bonding circuit and insulation monitoring shall be provided. See 6.3.3 c).	No this situation.	N/A
	Conductive structural parts of equipment in accordance with 6.3.2.2 need not be connected to the protective bonding circuit. Extraneous conductive parts which form the structure of the machine need not be connected to the protective bonding circuit where all the equipment provided is in accordance with 6.3.2.2.	It met the requirement	Pass
	Exposed conductive parts of equipment in accordance with 6.3.2.3 shall not be connected to the protective bonding circuit.	No this situation.	N/A
8.2.2	Protective conductors	-	-
	Protective conductors shall be identified in accordance with 13.2.2.	Appropriate identification has been made in accordance with 13.2.2	Pass

Clause	Requirement - test	Result	Verdict
	Copper conductors are preferred. Where a conductor material other than copper is used, its electrical resistance per unit length shall not exceed that of the allowable copper conductor and such conductors shall be not less than 16 mm ² in cross-sectional area.	Copper conductors are used.	Pass
	The cross-sectional area of protective conductors shall be determined in accordance with the requirements of:	-	-
	- 543 of IEC 60364-5-54; or	No this situation.	N/A
	- 7.4.3.1.7 of IEC 60439-1, as appropriate.	It met the requirement	Pass
	This requirement is met in most cases where the relationship between the cross-sectional area of the phase conductors associated with that part of the equipment and the cross-sectional area of the associated protective conductor is in accordance with Table 1 (see 5.2).	It met the requirement	Pass
8.2.3	Continuity of the protective bonding circuit	-	-
	All exposed conductive parts shall be connected to the protective bonding circuit in accordance with 8.2.1	No this situation.	N/A
	Where a part is removed for any reason (for example routine maintenance), the protective bonding circuit for the remaining parts shall not be interrupted.	No this situation.	N/A
	Connection and bonding points shall be so designed that their current-carrying capacity is not impaired by mechanical, chemical, or electrochemical influences. Where enclosures and conductors of aluminium or aluminium alloys are used, particular consideration should be given to the possibility of electrolytic corrosion.	No this situation.	N/A
	Metal ducts of flexible or rigid construction and metallic cable sheaths shall not be used as protective conductors. Nevertheless, such metal ducts and the metal sheathing of all connecting cables (for example cable armouring, lead sheath) shall be connected to the protective bonding circuit.	No this situation.	N/A
	Where the electrical equipment is mounted on lids, doors, or cover plates, continuity of the	No this situation.	N/A

Clause	Requirement - test	Result	Verdict
	protective bonding circuit shall be ensured and a protective conductor (see 8.2.2) is recommended. Otherwise fastenings, hinges or sliding contacts designed to have a low resistance shall be used (see 18.2.2, Test 1).		
	The continuity of the protective conductor in cables that are exposed to damage (for example flexible trailing cables) shall be ensured by appropriate measures (for example monitoring).	No this situation.	N/A
	For requirements for the continuity of the protective conductor using conductor wires, conductor bars and slip-ring assemblies, see 12.7.2.	No this situation.	N/A
8.2.4	Exclusion of switching devices from the protective bonding circuit	-	-
	The protective bonding circuit shall not incorporate a switching device or an overcurrent protective device (for example switch, fuse).	No switching device and/or over-current protective device was found to connect to the protective bonding.	Pass
	No means of interruption of the protective bonding conductor shall be provided.	No means of interruption of the protective bonding conductor shall be provided.	Pass
	Where the continuity of the protective bonding circuit can be interrupted by means of removable current collectors or plug/socket combinations, the protective bonding circuit shall be interrupted by a first make last break contact. This also applies to removable or withdrawable plug-in units (see also 13.4.5).	It is in compliance with this requirement.	Pass
8.2.5	Parts that need not be connected to the protective bonding circuit	-	-
	It is not necessary to connect exposed conductive parts to the protective bonding circuit where those parts are mounted so that they do not constitute a hazard because:	It is in compliance with this requirement.	Pass
	- they cannot be touched on large surfaces or grasped with the hand and they are small in size (less than approximately 50 mm × 50 mm); or	It is in compliance with this requirement.	Pass
	- they are located so that either contact with live parts, or an insulation failure, is unlikely.	It is in compliance with this requirement.	Pass
	This applies to small parts such as screws, rivets, and nameplates and to parts inside an enclosure,	It is in compliance with this requirement.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 34 of 89

Clause	Requirement - test	Result	Verdict
	irrespective of their size (for example electromagnets of contactors or relays and mechanical parts of devices) (see also 410.3.3.5 of IEC 60364-4-41).		
8.2.6	Protective conductor connecting points	-	-
	All protective conductors shall be terminated in accordance with 13.1.1. The protective conductor connecting points shall have no other function and are not intended, for example, to attach or connect appliances or parts.	It is in compliance with this requirement.	Pass
	Each protective conductor connecting point shall be marked or labelled as such using the symbol IEC 60417-5019 (DB:2002-10):	It is in compliance with this requirement.	Pass
	or with the letters PE, the graphical symbol being preferred, or by use of the bicolour combination GREEN-AND-YELLOW, or by any combination of these.	It is in compliance with this requirement.	Pass
8.2.7	Mobile machines	-	-
	On mobile machines with on-board power supplies, the protective conductors, the conductive structural parts of the electrical equipment, and those extraneous conductive parts which form the structure of the machine shall all be connected to a protective bonding terminal to provide protection against electric shock. Where a mobile machine is also capable of being connected to an external incoming power supply, this protective bonding terminal shall be the connection point for the external protective conductor.	No this situation.	N/A
8.2.8	Additional protective bonding requirements for electrical equipment having earth leakage currents higher than 10 mA a.c. or d.c.	-	-
	Where electrical equipment has an earth leakage current (for example adjustable speed electrical power drive systems and information technology equipment) that is greater than 10 mA a.c. or d.c. in any incoming supply, one or more of the following conditions for the associated protective bonding circuit shall be satisfied:	No this situation.	N/A
	a) the protective conductor shall have a cross-	No this situation.	N/A

Clause	Requirement - test	Result	Verdict
	sectional area of at least 10 mm ² Cu or 16 mm ² Al, through its total run;		
	b) where the protective conductor has a cross-sectional area of less than 10 mm ² Cu or 16 mm ² Al, a second protective conductor of at least the same cross-sectional area shall be provided up to a point where the protective conductor has a cross-sectional area not less than 10 mm ² Cu or 16 mm ² Al.	No this situation.	N/A
	c) automatic disconnection of the supply in case of loss of continuity of the protective conductor.	No this situation.	N/A
	To prevent difficulties associated with electromagnetic disturbances, the requirements of 4.4.2 also apply to the installation of duplicate protective conductors.	No this situation.	N/A
	In addition, a warning label shall be provided adjacent to the PE terminal, and where necessary on the nameplate of the electrical equipment. The information provided under 17.2 b)1) shall include information about the leakage current and the minimum cross-sectional area of the external protective conductor.	No this situation.	N/A
8.3	Functional bonding	-	-
	Protection against maloperation as a result of insulation failures can be achieved by connecting to a common conductor in accordance with 9.4.3.1.	It is in compliance with this requirement.	Pass
	For recommendations regarding functional bonding to avoid maloperation due to electromagnetic disturbances, see 4.4.2.	It is in compliance with this requirement.	Pass
8.4	Measures to limit the effects of high leakage current	-	-
	The effects of high leakage current can be restricted to the equipment having high leakage current by connection of that equipment to a dedicated supply transformer having separate windings. The protective bonding circuit shall be connected to exposed conductive parts of the equipment and, in addition, to the secondary winding of the transformer. The protective conductor(s) between the equipment and the	No this situation.	N/A

Clause	Requirement - test	Result	Verdict
	secondary winding of the transformer shall comply with one or more of the arrangements described in 8.2.8.		
9	Control circuits and control functions	-	-
9.1	Control circuits	-	-
9.1.1	Control circuit supply	-	-
	Where control circuits are supplied from an a.c. source, control transformers shall be used for supplying the control circuits. Such transformers shall have separate windings. Where several transformers are used, it is recommended that the windings of those transformers be connected in such a manner that the secondary voltages are in phase.	No transformer used for supplying the control circuits.	N/A
	Where d.c. control circuits derived from an a.c. supply are connected to the protective bonding circuit (see 8.2.1), they shall be supplied from a separate winding of the a.c. control circuit transformer or by another control circuit transformer.	No transformer used for supplying the control circuits.	N/A
	Transformers are not mandatory for machines with a single motor starter and/or a maximum of two control devices (for example interlock device, start/stop control station).	No transformer used for supplying the control circuits.	N/A
9.1.2	Control circuit voltages	-	-
	The nominal value of the control voltage shall be consistent with the correct operation of the control circuit. The nominal voltage shall not exceed 277 V when supplied from a transformer.	No transformer is used.	N/A
9.1.3	Protection	-	-
	Control circuits shall be provided with overcurrent protection in accordance with 7.2.4 and 7.2.10.	Appropriate overcurrent protective has been provided for the control circuit.	Pass
9.2	Control functions	-	-
9.2.1	Start functions	-	-
	Start functions shall operate by energizing the relevant circuit (see 9.2.5.2).	Start function are operated properly.	Pass
9.2.2	Stop functions	-	-
	There are three categories of stop functions as follows:	-	-
	– stop category 0: stopping by immediate	It is in compliance with this requirement.	Pass

Clause	Requirement - test	Result	Verdict
	removal of power to the machine actuators (i.e. an uncontrolled stop – see 3.56);		
	– stop category 1: a controlled stop (see 3.11) with power available to the machine actuators to achieve the stop and then removal of power when the stop is achieved;	No this situation.	N/A
	– stop category 2: a controlled stop with power left available to the machine actuators.	No this situation.	N/A
9.2.3	Operating modes	-	-
	Each machine can have one or more operating modes determined by the type of machine and its application. When a hazardous situation can result from a mode selection, unauthorised and/or inadvertent selection shall be prevented by suitable means (for example key operated switch, access code).	The entire different operation mode has been well protected under the same safety device of this machine.	Pass
	Mode selection by itself shall not initiate machine operation. A separate actuation of the start control shall be required.	No any additional mode selection other than the start operation is used for this machine.	Pass
	For each specific operating mode, the relevant safety functions and/or protective measures shall be implemented.	The relevant safety functions and/or protective measures have been implemented.	Pass
	Indication of the selected operating mode shall be provided (for example the position of a mode selector, the provision of an indicating light, a visual display indication).	Indication of the selected operating mode has been provided for this machine.	Pass
9.2.4	Suspension of safety functions and/or protective measures	-	-
	Where it is necessary to suspend safety functions and/or protective measures (for example for setting or maintenance purposes), protection shall be ensured by:	No need to suspend safeguarding.	N/A
	- disabling all other operating (control) modes; and	No need to suspend safeguarding.	N/A
	- other relevant means (see 4.11.9 of ISO 12100-2), that can include, for example, one or more of the following:	No need to suspend safeguarding.	N/A
	- initiation of operation by a hold-to-run device or by a similar control device;	No need to suspend safeguarding.	N/A
	- a portable control station with an emergency stop device and, where appropriate, an enabling	No need to suspend safeguarding.	N/A

Clause	Requirement - test	Result	Verdict
	device. Where a portable control station is in use, initiation of motion shall only be possible from that control station;		
	- a cableless control station with a device to initiate stop functions in accordance with 9.2.7.3 and, where appropriate, an enabling device. Where a cableless control station is in use, initiation of motion shall only be possible from that control station;	No need to suspend safeguarding.	N/A
	- limitation of the speed or the power of motion;	No need to suspend safeguarding.	N/A
	- limitation of the range of motion.	No need to suspend safeguarding.	N/A
9.2.5	Operation	-	-
9.2.5.1	General	-	-
	The necessary safety functions and/or protective measures (for example interlocks (see 9.3)) shall be provided for safe operation.	It is in compliance with this requirement.	Pass
	Measures shall be taken to prevent movement of the machine in an unintended or unexpected manner after any stopping of the machine (for example due to locked-off condition, power supply fault, battery replacement, lost signal condition with cableless control).	No additional measure was taken due to any risk of this kind of risk.	N/A
	Where a machine has more than one control station, measures shall be provided to ensure that initiation of commands from different control stations do not lead to a hazardous situation.	No this situation.	N/A
9.2.5.2	Start	-	-
	The start of an operation shall be possible only when all of the relevant safety functions and/or protective measures are in place and are operational except for conditions as described in 9.2.4.	The start of an operation is possible only when all the safeguards are in place and function.	Pass
	On those machines (for example mobile machines) where safety functions and/or protective measures cannot be applied for certain operations, manual control of such operations shall be by hold-to-run controls, together with enabling devices, as appropriate.	No hold-to-run control is used for this machine.	N/A
	Suitable interlocks shall be provided to secure correct sequential starting.	It met the requirement	Pass
	In the case of machines requiring the use of more	Just one control station is supplied.	Pass

Clause	Requirement - test	Result	Verdict
	than one control station to initiate a start, each of these control stations shall have a separate manually actuated start control device. The conditions to initiate a start shall be:		
	- all required conditions for machine operation shall be met, and	No this situation.	N/A
	- all start control devices shall be in the released (off) position, then	No this situation.	N/A
	- all start control devices shall be actuated concurrently (see 3.6).	No this situation.	N/A
9.2.5.3	Stop	-	-
	Stop category 0 and/or stop category 1 and/or stop category 2 stop functions shall be provided as indicated by the risk assessment and the functional requirements of the machine (see 4.1).	Category 0 stop is provided for the machine.	Pass
	Stop function shall override related start functions (see 9.2.5.2).	It is in compliance with this requirement.	Pass
	Where required, facilities to connect protective devices and interlocks shall be provided. If such a protective device or interlock causes a stop of the machine, it may be necessary for that condition to be signalled to the logic of the control system. The reset of the stop function shall not initiate any hazardous situation.	It is in compliance with this requirement.	Pass
	Where more than one control station is provided, stop commands from any control station shall be effective when required by the risk assessment of the machine.	No this situation.	N/A
9.2.5.4	Emergency operations (emergency stop, emergency switching off)	-	-
9.2.5.4.1	General	-	-
	This part of IEC 60204 specifies the requirements for the emergency stop and the emergency switching off functions of the emergency operations listed in Annex E, both of which are, in this part of IEC 60204, initiated by a single human action.	It is in compliance with this requirement.	Pass
	Once active operation of an emergency stop (see 10.7) or emergency switching off (see 10.8) actuator has ceased following a command, the effect of this command shall be sustained until it	It is in compliance with this requirement.	Pass

Clause	Requirement - test	Result	Verdict
	is reset. This reset shall be possible only by a manual action at that location where the command has been initiated. The reset of the command shall not restart the machinery but only permit restarting.		
	It shall not be possible to restart the machinery until all emergency stop commands have been reset. It shall not be possible to reenergize the machinery until all emergency switching off commands have been reset.	It is in compliance with this requirement.	Pass
9.2.5.4.2	Emergency stop	-	-
	Principles for the design of emergency stop equipment, including functional aspects, are given in ISO 13850.	No this situation.	N/A
	The emergency stop shall function either as a stop category 0 or as a stop category 1 (see 9.2.2). The choice of the stop category of the emergency stop depends on the results of a risk assessment of the machine.	No this situation.	N/A
	In addition to the requirements for stop (see 9.2.5.3), the emergency stop function has the following requirements:	-	-
	- it shall override all other functions and operations in all modes;	No this situation.	N/A
	- power to the machine actuators that can cause a hazardous situation(s) shall be either removed immediately (stop category 0) or shall be controlled in such a way to stop the hazardous motion as quickly as possible (stop category 1) without creating other hazards;	No this situation.	N/A
	- reset shall not initiate a restart.	No this situation.	N/A
9.2.5.4.3	Emergency switching off	-	-
	The functional aspects of emergency switching off are given in 536.4 of IEC 60364-5-53.	It is in compliance with this requirement.	Pass
	Emergency switching off should be provided where:	-	-
	- protection against direct contact (for example with conductor wires, conductor bars, slip- ring assemblies, controlgear in electrical operating areas) is achieved only by placing out of reach or by obstacles (see 6.2.6); or	No this situation.	N/A

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 41 of 89

Clause	Requirement - test	Result	Verdict
	- there is the possibility of other hazards or damage caused by electricity.	It is in compliance with this requirement.	Pass
	Emergency switching off is accomplished by switching off the relevant incoming supply by electromechanical switching devices, effecting a stop category 0 of machine actuators connected to this incoming supply. When a machine cannot tolerate this stop category 0 stop, it may be necessary to provide other measures, for example protection against direct contact, so that emergency switching off is not necessary.	It is in compliance with this requirement.	Pass
9.2.5.5	Monitoring of command actions	-	-
	Movement or action of a machine or part of a machine that can result in a hazardous condition shall be monitored by providing, for example, overtravel limiters, motor overspeed detection, mechanical overload detection or anti-collision devices.	No applicable.	N/A
9.2.6	Other control functions	-	-
9.2.6.1	Hold-to-run controls	-	-
	Hold-to-run controls shall require continuous actuation of the control devices to achieve operation	No any Hold-to-run control is used for this machine.	N/A
9.2.6.2	Two-hand control	-	-
	Three types of two-hand control are defined in ISO 13851, the selection of which is determined by the risk assessment	No Two-hand control is used for this machine.	N/A
9.2.6.3	Enabling control	-	-
	Enabling control shall be so arranged as to minimize the possibility of defeating, for example by requiring the de-activation of the enabling control device before machine operation may be reinitiated. It should not be possible to defeat the enabling function by simple means.	It is in compliance with this requirement.	Pass
9.2.6.4	Combined start and stop controls	-	-
	Push-buttons and similar control devices that, when operated, alternately initiate and stop motion shall be only be provided for functions which cannot result in a hazardous situation.	No push-botton is used for this machine.	N/A
9.2.7	Cableless control	-	-
9.2.7.1	General	-	-

Clause	Requirement - test	Result	Verdict
	Means shall be provided to readily remove or disconnect the power supply of the operator control station (see also 9.2.7.3).	No cableless control is used for this machine.	N/A
	Means (for example key operated switch, access code) shall be provided, as necessary, to prevent unauthorized use of the operator control station.	No cableless control is used for this machine.	N/A
	Each operator control station shall carry an unambiguous indication of which machine(s) is (are) intended to be controlled by that operator control station.	No cableless control is used for this machine.	N/A
9.2.7.2	Control limitation	-	-
	Measures shall be taken to ensure that control commands:	No cableless control is used for this machine.	N/A
	– affect only the intended machine;	No cableless control is used for this machine.	N/A
	– affect only the intended functions.	No cableless control is used for this machine.	N/A
	Measures shall be taken to prevent the machine from responding to signals other than those from the intended operator control station(s).	No cableless control is used for this machine.	N/A
	Where necessary, means shall be provided so that the machine can only be controlled from operator control station in one or more predetermined zones or locations.	No cableless control is used for this machine.	N/A
9.2.7.3	Stop	-	-
	Cableless control stations shall include a separate and clearly identifiable means to initiate the stop function of the machine or of all the operations that can cause a hazardous situation. The actuating means to initiate this stop function shall not be marked or labelled as an emergency stop device (see 10.7).	No this situation.	N/A
	A machine which is equipped with cableless control shall have a means of automatically initiating the stopping of the machine and of preventing a potentially hazardous operation, in the following situations:	No this situation.	N/A
	– when a stop signal is received;	No this situation.	N/A
	– when a fault is detected in the cableless control system;	No this situation.	N/A
	– when a valid signal (which includes a signal	No this situation.	N/A

Clause	Requirement - test	Result	Verdict
	that communication is established and maintained) has not been detected within a specified period of time (see Annex B), except when a machine is executing a pre-programmed task taking it outside the range of the cableless control where no hazardous situation can occur.		
9.2.7.4	Use of more than one operator control station	-	-
	Where a machine has more than one operator control station, including one or more cableless control stations, measures shall be provided to ensure that only one of the control stations can be enabled at a given time. An indication of which operator control station is in control of the machine shall be provided at suitable locations as determined by the risk assessment of the machine	No this situation.	N/A
9.2.7.5	Battery-powered operator control stations	-	-
	A variation in the battery voltage shall not cause a hazardous condition.	No battery-powered operator control station is used for this machine.	N/A
	If one or more potentially hazardous motions are controlled using a battery-powered cableless operator control station, a clear warning shall be given to the operator when a variation in battery voltage exceeds specified limits.	No battery-powered operator control station is used for this machine.	N/A
	Under those circumstances, the operator control station shall remain functional long enough for the operator to put the machine into a non-hazardous condition.	No battery-powered operator control station is used for this machine.	N/A
9.3	Protective interlocks	-	-
9.3.1	Reclosing or resetting of an interlocking safeguard	-	-
	The reclosing or resetting of an interlocking safeguard shall not initiate hazardous machine operation.	It met the requirement	Pass
9.3.2	Exceeding operating limits	-	-
	Where an operating limit (for example speed, pressure, position) can be exceeded leading to a hazardous situation, means shall be provided to detect when a predetermined limit(s) is exceeded and initiate an appropriate control action.	No this situation.	N/A
9.3.3	Operation of auxiliary functions	-	-
	The correct operation of auxiliary functions shall	No auxiliary operation is used.	N/A

Clause	Requirement - test	Result	Verdict
	be checked by appropriate devices (for example pressure sensors).		
	Where the non-operation of a motor or device for an auxiliary function can cause a hazardous situation, or cause damage to the machine or to the work in progress, appropriate interlocking shall be provided.	No auxiliary operation is used.	N/A
9.3.4	Interlocks between different operations and for contrary motions	-	-
	All contactors, relays, and other control devices that control elements of the machine and that can cause a hazardous situation when actuated at the same time (for example those which initiate contrary motion), shall be interlocked against incorrect operation.	No this situation.	N/A
	Reversing contactors (for example those controlling the direction of rotation of a motor) shall be interlocked in such a way that in normal service no short circuit can occur when switching.	No this situation.	N/A
	Where, for safety or for continuous operation, certain functions on the machine are required to be interrelated, proper co-ordination shall be ensured by suitable interlocks. For a group of machines working together in a co-ordinated manner and having more than one controller, provision shall be made to co-ordinate the operations of the controllers as necessary.	No this situation.	N/A
	Where a failure of a mechanical brake actuator can result in the brake being applied when the associated machine actuator is energized and a hazardous situation can result, interlocks shall be provided to switch off the machine actuator.	No this situation.	N/A
9.3.5	Reverse current braking	-	-
	Where braking of a motor is accomplished by current reversal, measures shall be provided to prevent the motor starting in the opposite direction at the end of braking where that reversal can cause a hazardous situation or damage to the machine or to the work in progress. For this purpose, a device operating exclusively as a	No reverse current braking is used for this machine.	N/A

Clause	Requirement - test	Result	Verdict
	function of time is not permitted.		
	Control circuits shall be so arranged that rotation of a motor shaft, for example manually, shall not result in a hazardous situation.	No reverse current braking is used for this machine.	N/A
9.4	Control functions in the event of failure	-	-
9.4.1	General requirements	-	-
	Where failures or disturbances in the electrical equipment can cause a hazardous situation or damage to the machine or to the work in progress, appropriate measures shall be taken to minimize the probability of the occurrence of such failures or disturbances. The required measures and the extent to which they are implemented, either individually or in combination, depend on the level of risk associated with the respective application (see 4.1).	The appropriate provision has been provided.	Pass
	Where memory retention is achieved for example, by battery power, measures shall be taken to prevent hazardous situations arising from failure or removal of the battery.	It met the requirement	Pass
	Means shall be provided to prevent unauthorized or inadvertent memory alteration by, for example, requiring the use of a key, access code or tool.	A key has been used.	Pass
9.4.2	Measures to minimize risk in the event of failure	-	-
9.4.2.1	Use of proven circuit techniques and components	The proven circuit and component have been used as far as possible.	Pass
9.4.2.2	Provisions of partial or complete redundancy	-	-
	By providing partial or complete redundancy, it is possible to minimize the probability that one single failure in the electrical circuit can result in a hazardous situation. Redundancy can be effective in normal operation (on-line redundancy) or designed as special circuits that take over the protective function (off-line redundancy) only where the operating function fails.	The redundancy for the interlocking of movable door of mould area has been constructed.	Pass
	Where off-line redundancy which is not active during normal operation is provided, suitable measures shall be taken to ensure that those control circuits are available when required.	The redundancy for the interlocking of movable door of mould area has been constructed.	Pass

Clause	Requirement - test	Result	Verdict
9.4.2.3	Provision of diversity	-	-
	The use of control circuits having different principles of operation, or using different types of components or devices can reduce the probability of hazards resulting from faults and/or failures. Example include:	-	-
	- the combination of normally open and normally closed contacts operated by interlocking guards;	The appropriate provision has been provided.	Pass
	- the use of different types of control circuit components in the circuit;	Not used in this machine.	N/A
	- the combination of electromechanical and electronic equipment in redundant configurations.	Not used in this machine.	N/A
9.4.2.4	Provision for functional tests	-	-
	Functional tests may be carried out automatically by the control system, or manually by inspection or tests at start-up and at predetermined intervals, or a combination as appropriate.	The automatic functional test after this machine is initiated has been used.	Pass
9.4.3	Protection against maloperation due to earth faults, voltage interruptions and loss of circuit continuity	The mal-operation mentioned in this clause could be detected by the manual test system.	Pass
9.4.3.1	Earth faults	-	-
	Earth faults on any control circuit shall not cause unintentional starting, potentially hazardous motions, or prevent stopping of the machine.	The appropriate bonding circuit has been provided.	Pass
9.4.3.2	Voltage interruptions	-	-
	Where the control system uses a memory device(s), proper functioning in the event of power failure shall be ensured (for example by using a non-volatile memory) to prevent any loss of memory that can result in a hazardous situation.	The power for keeping memory is only the operation parameter. The loss of parameter will not cause any hazardous situation, because the ranger for setting appropriate parameter has been constructed in the PLC, Which is not possible to be modified in any situation.	Pass
9.4.3.3	Loss of circuit continuity	-	-
	Where the loss of continuity of safety-related control circuits depending upon sliding contacts can result in a hazardous condition, appropriate measures shall be taken	For this machine, no this kind of risk is found.	N/A
10	Operator interface and machine-mounted control devices	-	-
10.1	General	-	-

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 47 of 89

Clause	Requirement - test	Result	Verdict
10.1.1	General device requirements	-	-
	As far as is practicable, those devices shall be selected, mounted, and identified or coded in accordance with relevant parts of IEC 61310.	The relevant standard has been followed as far as possible.	Pass
	The possibility of inadvertent operation shall be minimized by, for example, positioning of devices, suitable design, provision of additional protective measures. Particular consideration shall be given to the selection, arrangement, programming and use of operator input devices such as touchscreens, keypads and keyboards, for the control of hazardous machine operations. See IEC 60447.	It met the requirement	Pass
10.1.2	Location and mounting	-	-
	As far as is practicable, machine-mounted control devices shall be: – readily accessible for service and maintenance; – mounted in such a manner as to minimize the possibility of damage from activities such as material handling.	The mounting of control device has followed the requirement of this clause.	Pass
	The actuators of hand-operated control devices shall be selected and installed so that: – they are not less than 0.6 m above the servicing level and are within easy reach of the normal working position of the operator; – the operator is not placed in a hazardous situation when operating them.	The mounting of control device has followed the requirement of this clause.	Pass
	The actuators of foot-operated control devices shall be selected and installed so that: – they are within easy reach of the normal working position of the operator; – the operator is not placed in a hazardous situation when operating them.	Not applicable.	N/A
10.1.3	Protection	-	-
	The degree of protection (see IEC 60529) together with other appropriate measures shall afford protection against:	-	-
	– the effects of aggressive liquids, vapours, or gases found in the physical environment or used on the machine;	The appropriate specification of component used has been provided to withstand the stress of expected use.	Pass
	– the ingress of contaminants (for example swarf,	The appropriate specification of	Pass

Clause	Requirement - test	Result	Verdict
	dust, particulate matter).	component used has been provided.	
	the operator interface control devices shall have a minimum degree of protection against direct contact of IPXXD (see IEC 60529).	The IP54 degree of protection has been found on the operator interface on control devices.	Pass
10.1.4	Position sensors	-	-
	Position sensors (for example position switches, proximity switches) shall be so arranged that they will not be damaged in the event of overtravel.	Because of the use of mechanical protection for over-travel, no damage of limit switch will occur while over-travel.	Pass
	Position sensors in circuits with safety-related control functions shall have direct opening action (see IEC 60947-5-1) or shall provide similar reliability (see 9.4.2).	The necessary positive opening operation for the protection device has been provided.	Pass
10.1.5	Portable and pendant control stations	-	-
	Portable and pendant control stations and their control devices shall be so selected and arranged as to minimize the possibility of inadvertent machine operations caused by shocks and vibrations (for example if the operator control station is dropped or strikes an obstruction) (see also 4.4.8).	No portable and pendant control station is used for this machine.	N/A
10.2	Push-buttons	-	-
10.2.1	Colours	-	-
	Push-button actuators shall be colour-coded according to table 2	No this situation.	N/A
	The colours for START/ON actuators should be WHITE, GREY, BLACK or GREEN with a preference for WHITE. RED shall not be used.	No this situation.	N/A
	The colour RED shall be used for emergency stop and emergency switching off actuators.	No this situation.	N/A
	The colours for STOP/OFF actuators should be BLACK, GREY, or WHITE with a preference for BLACK. GREEN shall not be used. RED is permitted, but it is recommended that RED is not used near an emergency operation device.	No this situation.	N/A
	WHITE, GREY, or BLACK are the preferred colours for push-button actuators that alternately act as START/ON and STOP/OFF push-buttons. The colours RED, YELLOW, or GREEN shall not be used (see also 9.2.6).	No this situation.	N/A
	WHITE, GREY, or BLACK are the preferred colours for push-button actuators that cause	No this situation.	N/A

Clause	Requirement - test	Result	Verdict
	operation while they are actuated and cease the operation when they are released (for example hold-to-run). The colours RED, YELLOW, or GREEN shall not be used.		
	Reset push-buttons shall be BLUE, WHITE, GREY, or BLACK. Where they also act as a STOP/OFF button, the colours WHITE, GREY, or BLACK are preferred with the main preference being for BLACK. GREEN shall not be used.	No this situation.	N/A
	Where the same colour WHITE, GREY, or BLACK is used for various functions (for example WHITE for START/ON and for STOP/OFF actuators) a supplementary means of coding (for example shape, position, symbol) shall be used for the identification of push-button actuators.	No this situation.	N/A
10.2.2	Markings	-	-
	In addition to the functional identification as described in 16.3, it is recommended that pushbuttons be marked, near to or preferably directly on the actuators, with the symbols given in Table 3.	No this situation.	N/A
10.3	Indicator lights and displays	-	-
10.3.1	General	-	-
	Indicator lights and displays serve to give the following types of information:	-	-
	– indication: to attract the operator's attention or to indicate that a certain task should be performed. The colours RED, YELLOW, BLUE, and GREEN are normally used in this mode; for flashing indicator lights and displays, see 10.3.3.	No this situation.	N/A
	– confirmation: to confirm a command, or a condition, or to confirm the termination of a change or transition period. The colours BLUE and WHITE are normally used in this mode and GREEN may be used in some cases.	No this situation.	N/A
	Indicator lights and displays shall be selected and installed in such a manner as to be visible from the normal position of the operator (see also IEC 61310-1).	No this situation.	N/A

Clause	Requirement - test	Result	Verdict
	Indicator light circuits used for warning lights shall be fitted with facilities to check the operability of these lights.	No this situation.	N/A
10.3.2	Colours	-	-
	Unless otherwise agreed between the supplier and the user (see Annex B), indicator lights shall be colour-coded with respect to the condition (status) of the machine in accordance with Table 4.	No this situation.	N/A
	Indicating towers on machines should have the applicable colours in the following order from the top down; RED, YELLOW, BLUE, GREEN and WHITE.	No this situation.	N/A
10.3.3	Flashing lights and displays	-	-
	For further distinction or information and especially to give additional emphasis, flashing lights and displays can be provided for the following purposes:	No this situation.	N/A
	<ul style="list-style-type: none"> - to attract attention; - to request immediate action; - to indicate a discrepancy between the command and actual state; - to indicate a change in process (flashing during transition). 	No this situation.	N/A
	It is recommended that higher frequency flashing lights or display be used for higher priority information (see IEC 60073 for recommended flashing rates and pulse/pause ratios).	No this situation.	N/A
	Where flashing lights or displays are used to provide higher priority information, audible warning devices should also be provided.	No this situation.	N/A
10.4	Illuminated push-buttons	-	-
	Illuminated push-button actuators shall be colour-coded in accordance with Tables 2 and 4. Where there is difficulty in assigning an appropriate colour, WHITE shall be used. The colour RED for the emergency stop actuator shall not depend on the illumination of its light.	No this situation.	N/A
10.5	Rotary control devices	-	-
	Devices having a rotational member, such as potentiometers and selector switches, shall have	No this situation.	N/A

Clause	Requirement - test	Result	Verdict
	means of prevention of rotation of the stationary member. Friction alone shall not be considered sufficient.		
10.6	Start devices	-	-
	Actuators used to initiate a start function or the movement of machine elements (for example slides, spindles, carriers) shall be constructed and mounted so as to minimize inadvertent operation. However, mushroom-type actuators may be used for two-hand control (see also ISO 13851).	Start device is so constructed and mounted that could minimize inadvertent operation.	Pass
10.7	Emergency stop devices	-	-
10.7.1	Location of emergency stop devices	-	-
	Devices for emergency stop shall be readily accessible	It is in compliance with this requirement.	Pass
	Emergency stop devices shall be located at each operator control station and at other locations where the initiation of an emergency stop can be required (exception: see 9.2.7.3).	It is in compliance with this requirement.	Pass
	There can be circumstances where confusion can occur between active and inactive emergency stop devices caused by disabling the operator control station. In such cases, means (for example, information for use) shall be provided to minimise confusion.	It is in compliance with this requirement.	Pass
10.7.2	Types of emergency stop device	-	-
	The types of device for emergency stop include:	-	-
	– a push-button operated switch with a palm or mushroom head type; – a pull-cord operated switch; – a pedal-operated switch without a mechanical guard.	It is in compliance with this requirement.	Pass
	The devices shall have direct opening operation (see IEC 60947-5-1, Annex K).	It is in compliance with this requirement.	Pass
10.7.3	Colour of Actuators	-	-
	Actuators of emergency stop devices shall be coloured RED. If a background exists immediately around the actuator, then this background shall be coloured YELLOW. See also ISO 13850.	It is in compliance with this requirement.	Pass
10.7.4	Local operation of the supply disconnecting device to effect emergency stop	-	-

Clause	Requirement - test	Result	Verdict
	The supply disconnecting device may be locally operated to serve the function of emergency stop when : – it is readily accessible to the operator; and – it is of the type described in 5.3.2 a), b), c), or d).	It is in compliance with this requirement.	Pass
	When also intended for such use, the supply disconnecting device shall meet the colour requirements of 10.7.3.	It is in compliance with this requirement.	Pass
10.8	Devices for emergency switching off	-	-
10.8.1	Location of emergency switching off devices	-	-
	Emergency switching off devices shall be located as necessary for the given application. Normally, those devices will be located separate from operator control stations. Where it is necessary to provide a control station with an emergency stop device and an emergency switching off device, means shall be provided to avoid confusion between these devices.	Emergency switching off devices have been located as necessary for the given application.	Pass
10.8.2	Types of emergency switching off devices	-	-
	The type of device for emergency switching off include : – a push-button operated switch with a palm or mushroom head type of actuator; – a pull-cord operated switch.	A push-button operated switch.	Pass
	The devices shall have direct opening action (see IEC 60947-5-1, Annex K).	The clause has been met.	Pass
	The push-button operated switch may be in a break-glass enclosure.	No this situation.	N/A
10.8.3	Colour of Actuators	-	-
	Shall be coloured RED	The clause has been met.	Pass
	The background immediately around the device actuator should be coloured YELLOW	It has been met.	Pass
	Where confusion can occur between emergency stop and emergency switching off devices, means shall be provided to minimise confusion.	No this situation.	N/A
10.8.4	Local operation of the supply disconnecting device to effect emergency switching off	-	-
	Where the supply disconnecting device is to be locally operated for emergency switching off, it shall be readily accessible and should meet the	The clause has been met.	Pass

Clause	Requirement - test	Result	Verdict
	colour requirements of 10.8.3		
10.9	Enabling control device	-	-
	When an enabling control device is provided as a part of a system, it shall signal the enabling control to allow operation when actuated in one position only. In any other position, operation shall be stopped or prevented.	The clause has been met.	Pass
	Enabling control devices shall be selected and arranged so as to minimize the possibility of defeating.	The clause has been met.	Pass
	Enabling control devices shall be selected that have the following features:	The clause has been met.	Pass
	<ul style="list-style-type: none"> - designed in accordance with ergonomic principles; - for a two-position type: <ul style="list-style-type: none"> - position 1: off-function of the switch (actuator is not operated); - position 2: enabling function (actuator is operated). - for a three-position type: <ul style="list-style-type: none"> - position 1: off-function of the switch (actuator is not operated); - position 2: enabling function (actuator is operated in its mid position); - position 3: off-function (actuator is operated past its mid position); - when returning from position 3 to position 2, the enabling function is not activated. 	The clause has been met.	Pass
11	Controlgear: location, mounting, and enclosures	-	-
11.1	General requirements	-	-
	All controlgear shall be located and mounted so as to facilitate:	-	-
	<ul style="list-style-type: none"> - its accessibility and maintenance; - its protection against the external influences or conditions under which it is intended to operate; - operation and maintenance of the machine and its associated equipment. 	The clause has been met.	Pass
11.2	Location and mounting	-	-
11.2.1	Accessibility and maintenance	-	-
	All items of controlgear shall be placed and	The clause has been met.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 54 of 89

Clause	Requirement - test	Result	Verdict
	oriented so that they can be identified without moving them or the wiring. For items that require checking for correct operation or that are liable to need replacement, those actions should be possible without dismantling other equipment or parts of the machine (except opening doors or removing covers, barriers or obstacles). Terminals not part of controlgear components or devices shall also conform to these requirements.		
	All controlgear shall be mounted so as to facilitate its operation and maintenance from the front. Where a special tool is necessary to adjust, maintain, or remove a device, such a tool shall be supplied. Where access is required for regular maintenance or adjustment, the relevant devices shall be located between 0,4 m and 2,0 m above the servicing level. It is recommended that terminals be at least 0,2 m above the servicing level and be so placed that conductors and cables can be easily connected to them.	The clause has been met.	Pass
	No devices except devices for operating, indicating, measuring, and cooling shall be mounted on doors or on normally removable access covers of enclosures. Where control devices are connected through plug-in arrangements, their association shall be made clear by type (shape), marking or reference designation, singly or in combination (see 13.4.5).	No this kind of device is provided for this machine.	N/A
	Plug-in devices that are handled during normal operation shall be provided with noninterchangeable features where the lack of such a facility can result in malfunctioning.	No plug-in device is used for this machine.	N/A
	Plug/socket combinations that are handled during normal operation shall be located and mounted so as to provide unobstructed access.	No plug/socket combination.	N/A
	Test points for connection of test equipment, where provided, shall be:	-	-
	– mounted so as to provide unobstructed access; – clearly identified to correspond with the documentation (see 17.3);	The clause has been met.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 55 of 89

Clause	Requirement - test	Result	Verdict
	– adequately insulated; – sufficiently spaced.		
11.2.2	Physical separation or grouping	-	-
	Non-electrical parts and devices not directly associated with the electrical equipment shall not be located within enclosures containing controlgear.	No non-electrical part is found within the enclosure containing control gear.	Pass
	Devices such as solenoid valves should be separated from the other electrical equipment (for example in a separate compartment).	Solenoid valves have been separated from the other electrical equipment.	Pass
	Control devices mounted in the same location and connected to the supply voltage, or to both supply and control voltages, shall be grouped separately from those connected only to the control voltages	Appropriate separation has been made between the circuits of connected to supply voltage and the control voltage.	Pass
	Terminals shall be separated into groups for : - power circuits; - associated control circuits - other control circuits, fed from external sources (for example for interlocking).	Appropriate separation has been checked between the terminal of power circuit and control circuit.	Pass
	The groups may be mounted adjacently, provided that each group can be readily identified (for example by markings, by use of different sizes, by use of barriers or by colours).	It has been complied with.	Pass
	When arranging the location of devices (including interconnections), the clearances and creepage distances specified for them by the supplier shall be maintained, taking into account the external influences or conditions of the physical environment.	It has been complied with.	Pass
11.2.3	Heating effects	-	-
	Heat generating components (for example heat sinks, power resistors) shall be so located that the temperature of each component in the vicinity remains within the permitted limit.	It has been complied with.	Pass
11.3	Degrees of protection	-	-
	The protection of controlgear against ingress of solid foreign objects and of liquids shall be adequate taking into account the external influences under which the machine is intended to operate (i.e. the location and the physical environmental conditions) and shall be sufficient	It has been complied with.	Pass

Clause	Requirement - test	Result	Verdict
	against dust, coolants, and swarf.		
	Enclosures of controlgear shall provide a degree of protection of at least IP22 (see IEC 60529).	The degree of protection of control enclosure is found to be greater than IP22.	Pass
11.4	Enclosures, doors and openings	-	-
	Enclosures shall be constructed using materials capable of withstanding the mechanical, electrical and thermal stresses as well as the effects of humidity and other environmental factors that are likely to be encountered in normal service.	It has been complied with.	Pass
	Fasteners used to secure doors and covers should be of the captive type. Windows provided for viewing internally mounted indicating devices shall be of a material suitable to withstand mechanical stress and chemical attack (for example toughened glass or polycarbonate sheet of not less than 3 mm thickness).	Not applicable.	N/A
	It is recommended that enclosure doors be not wider than 0,9 m and have vertical hinges, with an angle of opening of at least 95°.	It has been complied with.	Pass
	The joints or gaskets of doors, lids, covers and enclosures shall withstand the chemical effects of the aggressive liquids, vapours, or gases used on the machine. The means provided to maintain the degree of protection of an enclosure on doors, lids and covers that require opening or removal for operation or maintenance shall:	It has been complied with.	Pass
	<ul style="list-style-type: none"> – be securely attached to either the door/cover or the enclosure; – not deteriorate due to removal or replacement of the door or the cover, and so impair the degree of protection. 	It has been complied with.	Pass
	Where openings in enclosures are provided (for example, for cable access), including those towards the floor or foundation or to other parts of the machine, means shall be provided to ensure the degree of protection specified for the equipment. Openings for cable entries shall be easily re-opened on site. A suitable opening may be provided in the base of enclosures within the machine so that moisture due to	It has been complied with.	Pass

Clause	Requirement - test	Result	Verdict
	condensation can drain away.		
	There shall be no opening between enclosures containing electrical equipment and compartments containing coolant, lubricating or hydraulic fluids, or those into which oil, other liquids, or dust can penetrate. This requirement does not apply to electrical devices specifically designed to operate in oil (for example electromagnetic clutches) nor to electrical equipment in which coolants are used.	It has been complied with.	Pass
	Where there are holes in an enclosure for mounting purposes, means may be necessary to ensure that after mounting, the holes do not impair the required protection.	No any hole, which breaks the degree of protection, is found during inspection.	N/A
	Equipment that, in normal or abnormal operation, can attain a surface temperature sufficient to cause a risk of fire or harmful effect to an enclosure material shall:	No any this kind of component is found during inspection.	N/A
	<ul style="list-style-type: none"> – be located within an enclosure that will withstand, without risk of fire or harmful effect, such temperatures as can be generated; and – be mounted and located at a sufficient distance from adjacent equipment so as to allow safe dissipation of heat (see also 11.2.3); or – be otherwise screened by material that can withstand, without risk of fire or harmful effect, the heat emitted by the equipment. 	Not applicable.	N/A
11.5	Access to controlgear	-	-
	Doors in gangways and for access to electrical operating areas shall:	No this kind of gangway is used for this machine.	N/A
	<ul style="list-style-type: none"> – be at least 0,7 m wide and 2,1 m high; – open outwards; – have a means (for example panic bolts) to allow opening from the inside without the use of a key or tool. 	No this kind of gangway is used for this machine.	N/A
	Enclosures which readily allow a person to fully enter shall be provided with means to allow escape, for example panic bolts on the inside of doors. Enclosures intended for such access, for example for resetting, adjusting, maintenance, shall have a clear width of at least 0,7 m and a	No this kind of gangway is used for this machine.	N/A

Clause	Requirement - test	Result	Verdict
	clear height of at least 2,1 m.		
	In cases where: – equipment is likely to be live during access; and – conducting parts are exposed, the clear width shall be at least 1,0 m. In cases where such parts are present on both sides of the access way, the clear width shall be at least 1,5 m.	No this kind of gangway is used for this machine.	N/A
12	Conductors and cables	-	-
12.1	General requirements	-	-
	Conductors and cables shall be selected so as to be suitable for the operating conditions (for example voltage, current, protection against electric shock, grouping of cables) and external influences (for example ambient temperature, presence of water or corrosive substances, mechanical stresses (including stresses during installation), fire hazards) that can exist.	Conductors and cables are selected so as to be suitable for the operating conditions and external influences.	Pass
	These requirements do not apply to the integral wiring of assemblies, subassemblies, and devices that are manufactured and tested in accordance with their relevant IEC standard (for example IEC 60439-1).	The clause has been met.	Pass
12.2	Conductors	-	-
	In general, conductors shall be of copper. Where aluminium conductors are used, the cross-sectional area shall be at least 16 mm ² .	Conductors are made of copper.	Pass
	To ensure adequate mechanical strength, the cross-sectional area of conductors should not be less than as shown in Table 5. However, conductors with smaller cross-sectional areas or other constructions than shown in Table 5 may be used in equipment provided adequate mechanical strength is achieved by other means and proper functioning is not impaired.	No this situation.	N/A
	If aluminium is used, the cross-sectional area shall be at least 16 mm ²	No this situation.	N/A
	All conductors that are subject to frequent movement shall have flexible stranding of class 5 or class 6 (see table C.4)	Class 6 conductor is used for the conductor of movable part.	Pass
12.3	Insulation	-	-
	Dielectric strength test for insulation conductors	2000Vac for a duration of 5 min is used	Pass

Clause	Requirement - test	Result	Verdict
	and cables : - 2000 V a.c. for a duration of 5 min. (for operating voltage higher than 50 V a.c. or 120 V d.c.) - 500 V a.c. for a duration of 5 min. (for separate PELV circuit)	for this dielectric strength test of insulation conductors.	
	The mechanical strength and thickness of the insulation shall not be damaged in operation or during laying, especially for cables pulled into ducts.	The mechanical strength and thickness of the insulation has no damage in operation or during laying.	Pass
12.4	Current-carrying capacity in normal service	-	-
	The current-carrying capacity depends on several factors, for example insulation material, number of conductors in a cable, design (sheath), methods of installation, grouping and ambient temperature.	The clause has been met.	Pass
	One typical example of the current-carrying capacities for PVC insulated wiring between enclosures and individual items of equipment under steady-state conditions is given in Table 6.	The clause has been met.	Pass
12.5	Conductor and cable voltage drop	-	-
	The voltage drop from the point of supply to the load shall not exceed 5 % of the nominal voltage under normal operating conditions. In order to conform to this requirement, it can be necessary to use conductors having a larger cross-sectional area than that derived from Table 6.	The voltage drop of conductors has been tested. The test result does not exceed 1 % (about 1V for 380V test voltage).	Pass
12.6	Flexible cables	-	-
12.6.1	General	-	-
	Flexible cables shall have class 5 or class 6 conductors	The class 6 flexible cable is provided for this equipment.	Pass
	Cables that are subjected to severe duties shall be of adequate construction to protect against: – abrasion due to mechanical handling and dragging across rough surfaces; – kinking due to operation without guides; – stress resulting from guide rollers and forced guiding, being wound and re-wound on cable drums.	No this situation.	N/A
12.6.2	Mechanical rating	-	-
	The cable handling system of the machine shall	The class 6 flexible cable is provided for	Pass

Clause	Requirement - test	Result	Verdict
	be so designed to keep the tensile stress of the conductors as low as is practicable during machine operations. Where copper conductors are used, the tensile stress applied to the conductors shall not exceed 15 N/mm ² of the copper cross-sectional area. Where the demands of the application exceed the tensile stress limit of 15 N/mm ² , cables with special construction features should be used and the allowed maximal tensile stress should be agreed with the cable manufacturer.	this equipment.	
	The maximum stress applied to the conductors of flexible cables with material other than copper shall be within the cable manufacturer's specification.	No this situation.	N/A
12.6.3	Current-carry capacity of cables wound on drums	-	-
	Cables to be wound on drums shall be selected with conductors having a cross-sectional area such that, when fully wound on the drum and carrying the normal service load, the max. allowable conductor temperature is not exceeded	No this situation.	N/A
	For cables of circular cross-sectional area installed on drums, the max. current-carrying capacity in free air should be derated according to table 7 (see also Clause 44 of IEC 60621-3).	No this situation.	N/A
12.7	Collector wires, collector bars and slip-ring assemblies	-	-
12.7.1	Protection against direct contact	-	-
	Conductor wires, conductor bars and slip-ring assemblies shall be installed or enclosed in such a way that, during normal access to the machine, protection against direct contact is achieved by the application of one of the following protective measures:	Every wires are protected with the control enclosure of IP2X	Pass
	– protection by partial insulation of live parts, or where this is not practicable; – protection by enclosures or barriers of at least IP2X (see 412.2 of IEC 60364-4-41).	The degree of protection for the horizontal top surface of control enclosure is IP54.	Pass
	Horizontal top surfaces of barriers or enclosures that are readily accessible shall provide a degree of protection of at least IP4X (see 412.2.2 of IEC	No this situation.	N/A

Clause	Requirement - test	Result	Verdict
	60364-4-41).		
	Where the required degree of protection is not achieved, protection by placing live parts out of reach in combination with emergency switching off in accordance with 9.2.5.4.3 shall be applied.	No this situation.	N/A
	Conductor wires and conductor bars shall be so placed and/or protected as to: – prevent contact, especially for unprotected conductor wires and conductor bars, with conductive items such as the cords of pull-cord switches, strain-relief devices and drive chains; – prevent damage from a swinging load.	The appropriate provision for preventing contact and damage from a swinging load has been found during inspection.	Pass
12.7.2	Protective conductor circuit	-	-
	Where conductor wires, conductor bars and slip-ring assemblies are installed as part of the protective bonding circuit, they shall not carry current in normal operation. Therefore, the protective conductor (PE) and the neutral conductor (N) shall each use a separate conductor wire, conductor bar or slip-ring. The continuity of the protective conductor circuit using sliding contacts shall be ensured by taking appropriate measures	No this situation.	N/A
12.7.3	Protective conductor current collectors	-	-
	Protective conductor current collectors shall have a shape or construction so that they are not interchangeable with the other current collectors. Such current collectors shall be of the sliding contact type.	No this situation.	N/A
12.7.4	Removable current collectors with a disconnecter function	-	-
	Removable current collectors having a disconnecter function shall be so designed that the protective conductor circuit is interrupted only after the live conductors have been disconnected, and the continuity of the protective conductor circuit is re-established before any live conductor is reconnected	No this kind of current collector is used for this machine.	N/A
12.7.5	Clearance in air	-	-
	Clearances between the respective conductors, and between adjacent systems, of conductor	No this situation.	N/A

Clause	Requirement - test	Result	Verdict
	wires, conductor bars, slip-ring assemblies and their current collectors shall be suitable for at least a rated impulse voltage of an overvoltage category III in accordance with IEC 60664-1.		
12.7.6	Creepage distances	-	-
	Creepage distances between the respective conductors, between adjacent systems of conductor wires, conductor bars and slip-ring assemblies, and their current collectors shall be suitable for operation in the intended environment, for example open air (IEC 60664-1), inside buildings, protected by enclosures.	No this situation.	N/A
	In abnormally dusty, moist or corrosive environments, the following creepage distance requirements apply: – unprotected conductor wires, conductor bars, and slip-ring assemblies shall be equipped with insulators with a minimum creepage distance of 60 mm; – enclosed conductor wires, insulated multipole conductor bars and insulated individual conductor bars shall have a minimum creepage distance of 30 mm.	No this situation.	N/A
	The manufacturer's recommendations shall be followed regarding special measures to prevent a gradual reduction in the insulation values due to unfavourable ambient conditions (for example deposits of conductive dust, chemical attack).	No this situation.	N/A
12.7.7	Conductor system sectioning	-	-
	Where conductor wires or conductor bars are arranged so that they can be divided into isolated sections, suitable design measures shall be employed to prevent the energization of adjacent sections by the current collectors themselves.	No this situation.	N/A
12.7.8	Construction and installation of collector wire, collector bar systems and slip-ring assemblies	-	-
	Conductor wires, conductor bars and slip-ring assemblies in power circuits shall be grouped separately from those in control circuits.	No this situation.	N/A
	Conductor wires, conductor bars and slip-ring assemblies shall be capable of withstanding,	No this situation.	N/A

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 63 of 89

Clause	Requirement - test	Result	Verdict
	without damage, the mechanical forces and thermal effects of short-circuit currents.		
	Removable covers for conductor wire and conductor bar systems laid underground or underfloor shall be so designed that they cannot be opened by one person without the aid of a tool.	No this situation.	N/A
	Where conductor bars are installed in a common metal enclosure, the individual sections of the enclosure shall be bonded together and connected to a protective bonding conductor at several points depending upon their length. Metal covers of conductor bars laid underground or underfloor shall also be bonded together and connected to a protective bonding conductor.	No this situation.	N/A
	The protective bonding circuit shall include the covers or cover plates of metal enclosures or underfloor ducts. Where metal hinges form a part of the bonding circuit, their continuity shall be verified.	No this situation.	N/A
	Underground and underfloor collector bar ducts shall have drainage facilities	No this situation.	N/A
13	Wiring practices	-	-
13.1	Connections and routing	-	-
13.1.1	General requirements	-	-
	All connections shall be secured against accidental loosening	All connections are secured against accidental loosening.	Pass
	The means of connection shall be suitable for the cross-sectional areas and neutral of the conductors being terminated	It is in compliance with this situation.	Pass
	The connection of two or more conductors to one terminal is permitted (only when the terminal is designed for that purpose)	No this kind of connection.	N/A
	One protective bonding circuit conductor shall be connected to one terminal connecting point	One protective bonding circuit conductor is connected to one terminal connecting point.	Pass
	Soldered connections shall only be permitted if terminals are suitable for soldering	No soldered connection is used for provided.	N/A
	Terminals on terminal blocks shall be plainly identified to correspond with markings on the diagrams	Appropriate identification has been provided.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 64 of 89

Clause	Requirement - test	Result	Verdict
	Where an incorrect electrical connection can be a source of risk and it is not practicable to reduce the possibility of incorrect connection by design measures, the conductors and/or terminations shall be identified in accordance with 13.2.1.	No this kind of risk.	N/A
	The installation of flexible conduits and cables shall be such that liquids shall drain away from the fittings	The appropriate provision of drain has been provided for the installation of flexible conduits.	Pass
	Means of retaining conductor strands shall be provided (Solder shall not be used for that purpose)	Appropriate retaining provisions for the conductor strands have been provided.	Pass
	Shielded conductors shall be so terminated as to prevent fraying of strands and to permit easy disconnection	Appropriate termination has been found for the shield conductors.	Pass
	Identification tags shall be legible, permanent, and appropriate for the physical environment	Appropriate identification has been found for the conductors and terminals.	Pass
	Terminal blocks shall be so mounted and wired, that the internal and external wiring does not cross over the terminals (see IEC 60947-7-1).	No any external and/or internal wiring was found to cross over the terminals.	Pass
13.1.2	Conductor and cable runs	-	-
	Conductors and cables shall be run from terminal to terminal without splices or joints. Connections using plug/socket combinations with suitable protection against accidental disconnection are not considered to be joints for the purpose of this Subclause.	Conductors have been found to run from terminal to terminal.	Pass
	Where it is necessary to connect and disconnect cables and cable assemblies, a sufficient extra length shall be provided for that purpose.	Not necessary to disconnect the cable assemblies.	N/A
	The terminations of cables shall be adequately supported to prevent mechanical stresses at the terminations of the conductors	Appropriate support for the terminal of cable was found.	Pass
	Wherever practicable, the protective conductor shall be placed close to the associated live conductors in order to decrease the impedance of the loop.	No this situation.	Pass
13.1.3	Conductors of different circuits	-	-
	Conductors of different circuits may be laid side by side, may occupy the same duct (for example conduit, cable trunking system), or may be in the	Appropriate arrangement for the connection of different circuit has been found.	Pass

Clause	Requirement - test	Result	Verdict
	same multiconductor cable provided that the arrangement does not impair the proper functioning of the respective circuits. Where those circuits operate at different voltages, the conductors shall be separated by suitable barriers or shall be insulated for the highest voltage to which any conductor within the same duct can be subjected, for example line to line voltage for unearthed systems and phase to earth voltage for earthed systems.		
13.1.4	Connection between pick-up and pick-up converter of an inductive power supply system	-	-
	The cable between the pick-up and the pick-up converter as specified by the manufacturer of the inductive power supply shall be:	No this situation.	Pass
	– as short as practicable;	No this situation.	Pass
	– adequately protected against echanical damage.	No this situation.	Pass
13.2	Identification of conductors	-	-
13.2.1	General requirements	-	-
	Each conductor shall be identifiable at each termination in accordance with the technical documentation (see Clause 17).	It is identified in accordance with the technical documentation.	Pass
	Conductors should be identified by number, alphanumeric, colour (either solid or with one or more stripes), or a combination of colour and numbers or alphanumeric. W hen numbers are used, they shall be Arabic; letters shall be Roman (either upper or lower case).	Colour and numbers is used for it.	Pass
13.2.2	Identification of the protective conductor	-	-
	The protective conductor shall be readily distinguishable by shape, location, marking, or colour.	It is identified by marking and colour.	Pass
	When identification is by colour alone, the bicolour combination GREEN-AND-YELLOW shall be used throughout the length of the conductor. This colour identification is strictly reserved for the protective conductor.	It is in compliance with this requirement.	Pass

Clause	Requirement - test	Result	Verdict
	For insulated conductors, the bicolour combination GREEN-AND-YELLOW shall be such that on any 15 mm length, one of the colours covers at least 30% and not more than 70% of the surface of the conductor, the other colour covering the remainder of the surface.	It is in compliance with this requirement.	Pass
	Where the protective conductor can be easily identified by its shape, position, or construction (for example a braided conductor, uninsulated stranded conductor), or where the insulated conductor is not readily accessible, colour coding throughout its length is not necessary but the ends or accessible locations shall be clearly identified by the graphical symbol IEC 60417-5019 (DB:2002-10) or by the bicolour combination GREEN-AND-YELLOW.	It is in compliance with this requirement.	Pass
13.2.3	Identification of the neutral conductor	--	-
	Where a circuit includes a neutral conductor that is identified by colour alone, the colour used for this conductor shall be BLUE. In order to avoid confusion with other colours, it is recommended that an unsaturated blue be used, called here "light blue" (see 3.2.2 of IEC 60446). Where the selected colour is the sole identification of the neutral conductor, that colour shall not be used for identifying any other conductor where confusion is possible.	The color used for neutral conductor is light blue.	Pass
	Where identification by colour is used, bare conductors used as neutral conductors shall be either coloured by a stripe, 15 mm to 100 mm wide in each compartment or unit and at each accessible location, or coloured throughout their length.	No this situation.	N/A
13.2.4	Identification by colour	-	-
	Where colour-coding is used for identification of conductors (other than the protective conductor (see 13.2.2) and the neutral conductor (see 13.2.3)), the following colours may be used:	It is in compliance with this requirement.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 67 of 89

Clause	Requirement - test	Result	Verdict
	BLACK, BROWN, RED, ORANGE, YELLOW, GREEN, BLUE (including LIGHT BLUE), VIOLET, GREY, WHITE, PINK, TURQUOISE.		
	It is recommended that, where colour is used for identification, the colour be used throughout the length of the conductor either by the colour of the insulation or by colour markers at regular intervals and at the ends or accessible location.	It is in compliance with this requirement.	Pass
	For safety reasons, the colour GREEN or the colour YELLOW should not be used where there is a possibility of confusion with the bicolour combination GREEN-AND-YELLOW (see 13.2.2).	It is in compliance with this requirement.	Pass
	Colour identification using combinations of those colours listed above may be used provided there can be no confusion and that GREEN or YELLOW is not used except in the bicolour combination GREEN-AND-YELLOW.	It is in compliance with this requirement.	Pass
	Where colour-coding is used for identification of conductors, it is recommended that they be colour-coded as follows: – BLACK: a.c. and d.c. power circuits; – RED: a.c. control circuits; – BLUE: d.c. control circuits; – ORANGE: excepted circuits in accordance with 5.3.5.	Not applicable.	N/A
	to the above are permitted where: – insulation is used that is not available in the colours recommended; or – multiconductor cable is used, but not the bicolour combination GREEN-AND-YELLOW.	It is in compliance with this requirement.	Pass
13.3	Wiring inside enclosures	-	-
	Conductors inside enclosures shall be supported where necessary to keep them in place.	It is in compliance with this requirement.	Pass
	Non-metallic ducts shall be permitted only when they are made with a flame-retardant insulating material (see the IEC 60332 series).	It is in compliance with this requirement.	Pass
	It is recommended that electrical equipment mounted inside enclosures be designed and constructed in such a way as to permit	It is in compliance with this requirement.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 68 of 89

Clause	Requirement - test	Result	Verdict
	modification of the wiring from the front of the enclosure (see also 11.2.1). Where that is not practicable and control devices are connected from the rear of the enclosure, access doors or swingout panels shall be provided.		
	Connections to devices mounted on doors or to other movable parts shall be made using flexible conductors in accordance with 12.2 and 12.6 to allow for the frequent movement of the part.	It is in compliance with this requirement.	Pass
	The conductors shall be anchored to the fixed part and to the movable part independently of the electrical connection (see also 8.2.3 and 11.2.1).	It is in compliance with this requirement.	Pass
	Conductors and cables that do not run in ducts shall be adequately supported.	It is in compliance with this requirement.	Pass
	Terminal blocks or plug/socket combinations shall be used for control wiring that extends beyond the enclosure. For plug/socket combinations, see also 13.4.5 and 13.4.6.	No this situation.	N/A
	Power cables and cables of measuring circuits may be directly connected to the terminals of the devices for which the connections were intended.	It is in compliance with this requirement.	Pass
13.4	Wiring outside enclosures	-	-
13.4.1	General requirements	-	-
	The means of introduction of cables or ducts with their individual glands, bushings, etc., into an enclosure shall ensure that the degree of protection is not reduced (see 11.3)	No this situation.	N/A
13.4.2	External ducts	-	-
	Conductors and their connections external to the electrical equipment enclosure(s) shall be enclosed in suitable ducts (i.e. conduit or cable trunking systems) as described in 13.5 except for suitably protected cables that may be installed without ducts and with or without the use of open cable trays or cable support means. Where devices such as position switches or proximity switches are supplied with a dedicated cable, their cable need not be enclosed in a duct when the cable is suitable for the purpose, sufficiently short, and so located or protected, that the risk of damage is	It is in compliance with this requirement.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 69 of 89

Clause	Requirement - test	Result	Verdict
	minimized.		
	Fittings used with ducts or multiconductor cable shall be suitable for the physical environment.	It is in compliance with this requirement.	Pass
	Flexible conduit or flexible multiconductor cable shall be used where it is necessary to employ flexible connections to pendant push-button stations.	It is in compliance with this requirement.	Pass
	The weight of the pendant stations shall be supported by means other than the flexible conduit or the flexible multiconductor cable, except where the conduit or cable is specifically designed for that purpose.	It is in compliance with this requirement.	Pass
13.4.3	Connection to moving elements of the machine	-	-
	Connection to frequently moving parts shall be made using conductors according with 12.2 and 12.6.	The appropriate conductor has been chosen according to the requirement of 12.2 and 12.6.	Pass
	Flexible cable and flexible conduit shall be so installed as to avoid excess flexing and straining, particularly at the fittings	Flexible cable and flexible conduit have been so installed as to avoid excess flexing and straining, particularly at the fittings.	Pass
	Cables subject to movement shall be supported in such a way that there is no mechanical strain on the connection points nor any sharp flexing	Appropriate support for this purpose has been found on the machine.	Pass
	When this is achieved by the provision of a loop, it shall have sufficient length to provide for a bending radius of the cable of at least 10 times the diameter of the cable.	No loop is used.	N/A
	Flexible cables of machines shall be so installed or protected to minimize the possibility of external damage due to factors that include the following cable use or potential abuse: – being run over by the machine itself; – being run over by vehicles or other machines; – coming into contact with the machine structure during movements; – running in and out of cable baskets, or on or off cable drums; – acceleration forces and wind forces on festoon systems or suspended cables; – excessive rubbing by cable collector; – exposure to excessive radiated heat.	Appropriate protection has been provided.	Pass

Clause	Requirement - test	Result	Verdict
	The cable sheath shall be resistant to the normal wear that can be expected from movement and to the effects of environmental contaminants (for example oil, water, coolants, dust).	The cable sheath can be resistant to the normal wear.	Pass
	Where cables subject to movement are close to moving parts, precautions shall be taken to maintain a space of at least 25 mm between the moving parts and the cables. Where that distance is not practicable, fixed barriers shall be provided between the cables and the moving parts.	It is in compliance with this requirement.	Pass
	The cable handling system shall be so designed that the lateral cable angles do not exceed 5°, avoiding torsion in the cable when: – being wound on and off cable drums; and – approaching and leaving cable guidance devices.	It is in compliance with this requirement.	Pass
	Measures shall be taken to ensure that at least two turns of flexible cables always remain on a drum.	It is in compliance with this requirement.	Pass
	Devices serving to guide and carry a flexible cable shall be so designed that the inner bending radius at all points where the cable is bent is not less than the values given in Table 8, unless otherwise agreed with the cable manufacturer, taking into account the permissible tension and the expected fatigue life.	It is in compliance with this requirement.	Pass
	The straight section between two bends shall be at least 20 times the diameter of the cable.	It is in compliance with this requirement.	Pass
	Where flexible conduit is adjacent to moving parts, the construction and supporting means shall prevent damage to the flexible conduit under all conditions of operation.	It is in compliance with this requirement.	Pass
	Flexible conduit shall not be used for connections subject to rapid or frequent movements except when specifically designed for that purpose.	It is in compliance with this requirement.	Pass
13.4.4	Interconnection of devices on the machine	-	-
	Where several machine-mounted switching devices (for example position sensors, push-buttons) are connected in series or in parallel, it is recommended that the connections between those devices be made through terminals forming intermediate test points..	No this situation.	N/A

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 71 of 89

Clause	Requirement - test	Result	Verdict
	Such terminals shall be conveniently placed, adequately protected, and shown on the relevant diagrams	No this situation.	N/A
13.4.5	Plug/socket combinations	-	-
	Where plug/socket combinations are provided, they shall fulfil one or more of the following requirements as applicable:		-
	a) When installed correctly in accordance with f), plug/socket combinations shall be of such a type as to prevent unintentional contact with live parts at any time, including during insertion or removal of the connectors. The degree of protection shall be at least IPXXB. PELV circuits are excepted from this requirement.	No plug/socket is used for this machine.	N/A
	b) Have a first make last break protective bonding contact (earthing contact) (see also 6.3, 8.2.4) if used in TN- or TT-systems.	No plug/socket is used for this machine.	N/A
	c) Plug/socket combinations intended to be connected or disconnected during load conditions shall have sufficient load-breaking capacity. Where the plug/socket combination is rated at 30 A, or greater, it shall be interlocked with a switching device so that the connection and disconnection is possible only when the switching device is in the OFF position.	No plug/socket is used for this machine.	N/A
	d) Plug/socket combinations that are rated at more than 16 A shall have a retaining means to prevent unintended or accidental disconnection.	No plug/socket is used for this machine.	N/A
	e) Where an unintended or accidental disconnection of plug/socket combinations can cause a hazardous situation, they shall have a retaining means.	No plug/socket is used for this machine.	N/A
	The installation of plug/socket combinations shall fulfil the following requirements as applicable:	-	-
	f) The component which remains live after disconnection shall have a degree of protection of at least IP2X or IPXXB, taking into account the required clearance and creepage distances. PELV circuits are excepted from this requirement.	No plug/socket is used for this machine.	N/A
	g) Metallic housings of plug/socket combinations shall be connected to the protective bonding	No plug/socket is used for this machine.	N/A

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 72 of 89

Clause	Requirement - test	Result	Verdict
	circuit. PELV circuits are excepted from this requirement.		
	h) Plug/socket combinations intended to carry power loads but not to be disconnected during load conditions shall have a retaining means to prevent unintended or accidental disconnection and shall be clearly marked that they are not intended to be disconnected under load.	No plug/socket is used for this machine.	N/A
	i) Where more than one plug/socket combination is provided in the same electrical equipment, the associated combinations shall be clearly identifiable. It is recommended that mechanical coding be used to prevent incorrect insertion.	No plug/socket is used for this machine.	N/A
	j) Plug/socket combinations used in control circuits shall fulfil the applicable requirements of IEC 61984. Exception: see item k).	No plug/socket is used for this machine.	N/A
	k) Plug/socket combinations intended for household and similar general purposes shall not be used for control circuits. In plug/socket combinations in accordance with IEC 60309-1, only those contacts shall be used for control circuits which are intended for those purposes.	No plug/socket is used for this machine.	N/A
13.4.6	Dismantling for shipment	-	-
	Where it is necessary that wiring be disconnected for shipment, terminals or plug/socket combinations shall be provided at the sectional points. Such terminals shall be suitably enclosed and plug/socket combinations shall be protected from the physical environment during transportation and storage.	No this situation.	N/A
13.4.7	Additional conductors	-	-
	Consideration should be given to providing additional conductors for maintenance or repair. When spare conductors are provided, they shall be connected to spare terminals or isolated in such a manner as to prevent contact with live parts.	It is in compliance with this requirement.	Pass
13.5	Ducts, connection boxes and other boxes	-	-
13.5.1	General requirements	-	-
	Ducts shall provide a degree of protection suitable for the application (see IEC 60529).	It is in compliance with this requirement.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 73 of 89

Clause	Requirement - test	Result	Verdict
	All sharp edges, flash, burrs, rough surfaces, or threads with which the insulation of the conductors can come in contact shall be removed from ducts and fittings. Where necessary, additional protection consisting of a flame-retardant, oil-resistant insulating material shall be provided to protect conductor insulation.	It is in compliance with this requirement.	Pass
	Drain holes of 6 mm diameter are permitted in cable trunking systems, connection boxes, and other boxes used for wiring purposes that can be subject to accumulations of oil or moisture.	It is in compliance with this requirement.	Pass
	In order to prevent confusion of conduits with oil, air, or water piping, it is recommended that the conduits be either physically separated or suitably identified.	It is in compliance with this requirement.	Pass
	Ducts and cable trays shall be rigidly supported and positioned at a sufficient distance from moving parts and in such a manner so as to minimize the possibility of damage or wear. In areas where human passage is required, the ducts and cable trays shall be mounted at least 2 m above the working surface.	It is in compliance with this requirement.	Pass
	Ducts shall be provided only for mechanical protection (see 8.2.3 for requirements for connection to the protective bonding circuit).	It is in compliance with this requirement.	Pass
	Cable trays that are partially covered should not be considered to be ducts or cable trunking systems (see 13.5.6), and the cables used shall be of a type suitable for installation with or without the use of open cable trays or cable support means.	No this situation.	N/A
13.5.2	Percentage fill of ducts	-	-
	Consideration of the percentage fill of ducts should be based on the straightness and length of the duct and the flexibility of the conductors. It is recommended that the dimensions and arrangement of the ducts be such as to facilitate the insertion of the conductors and cables.	It is in compliance with this requirement.	Pass
13.5.3	Rigid metal conduit and fittings	-	-
	Rigid metal conduit and fittings shall be of galvanized steel or of a corrosion-resistant	No this situation.	N/A

Clause	Requirement - test	Result	Verdict
	material suitable for the conditions. The use of dissimilar metals in contact that can cause galvanic action should be avoided.		
	Conduits shall be securely held in place and supported at each end	No this situation.	N/A
	Fittings shall be compatible with the conduit and appropriate for the application. Fittings shall be threaded unless structural difficulties prevent assembly.	No this situation.	N/A
	Where threadless fittings are used, the conduit shall be securely fastened to the equipment	No this situation.	N/A
	Conduit bends shall be made in such a manner that the conduit shall not be damaged and the internal diameter of the conduit shall not be effectively reduced.	No this situation.	N/A
13.5.4	Flexible metal conduit and fittings	-	-
	A flexible metal conduit shall consist of a flexible metal tubing or woven wire armour. It shall be suitable for the expected physical environment.	No this situation.	N/A
	Fittings shall be compatible with the conduit and appropriate for the application.	No this situation.	N/A
13.5.5	Flexible non-metallic conduit and fittings		
	Flexible non-metallic conduit shall be resistant to kinking and shall have physical characteristics similar to those of the sheath of multiconductor cables.	No this situation.	N/A
	The conduit shall be suitable for use in the expected physical environment.	No this situation.	N/A
	Fittings shall be compatible with the conduit and appropriate for the application.	No this situation.	N/A
13.5.6	Cable trunking systems	-	-
	Cable trunking systems external to enclosures shall be rigidly supported and clear of all moving or contaminating portions of the machine.	It is in compliance with this requirement.	Pass
	Covers shall be shaped to overlap the sides; gaskets shall be permitted.	Not applicable	N/A
	Covers shall be attached to cable trunking systems by suitable means.	Not applicable	N/A
	On horizontal cable trunking systems, the cover shall not be on the bottom unless specifically designed for such installation.	Not applicable	N/A

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 75 of 89

Clause	Requirement - test	Result	Verdict
	Where the cable trunking system is furnished in sections, the joints between sections shall fit tightly but need not be gasketed.	It is in compliance with this requirement.	Pass
	The only openings permitted shall be those required for wiring or for drainage.	It is in compliance with this requirement.	Pass
	Cable trunking systems shall not have opened but unused knockouts.	It is in compliance with this requirement.	Pass
13.5.7	Machine compartments and cable trunking systems	-	-
	Are isolated from coolant or oil reservoirs and are entirely enclosed	No additional coolant and/or oil reservoirs make it necessary to provide additional isolation.	N/A
	Conductors run in enclosed compartment and cable trunking systems shall be so secured and arranged that they are not subject to damage	Conductors run in enclosed compartment have been so secured and arranged that they be not subject to damage.	Pass
13.5.8	Connection boxes and other boxes	-	-
	Shall be accessible for maintenance.	No this situation.	N/A
	Shall provide protection against the ingress of solid bodies and liquids, taking into account the external influences under which the machine is intended to operate (see 11.3).	No this situation.	N/A
	Shall not have opened but unused knockouts nor any other opening and shall be so constructed as to exclude materials such as dust, flyings, oil, and coolant	No this situation.	N/A
13.5.9	Motor connection boxes	-	-
	Shall enclose only connections to the motor and motor-mounted devices	Not applicable	N/A
14	Electric motors and associated equipment	-	-
14.1	General requirements	-	-
	Electric motor should conform to the requirements of IEC 60034 series	Electric motors conform to the requirement of IEC60034 series.	Pass
	The protection requirements for motors and associated equipment are given in 7.2 for overcurrent protection, in 7.3 for overload protection, and in 7.6 for overspeed protection.	It is in compliance with this requirement.	Pass
	As many controllers do not switch off the supply to a motor when it is at rest, care shall be taken to ensure compliance with the requirements of 5.3, 5.4, 5.5, 7.5, 7.6 and 9.4. Motor control	It is in compliance with this requirement.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 76 of 89

Clause	Requirement - test	Result	Verdict
	equipment shall be located and mounted in accordance with Clause 11.		
14.2	Motor enclosures	-	-
	It is recommended that motor enclosures be chosen from those included in IEC 60034-5.	It is in compliance with this requirement.	Pass
	Protection degree shall be at least IP 23	Protection degree of motor enclosure is IP 23.	Pass
14.3	Motor dimensions	-	-
	As far as is practicable, the dimensions of the motors shall conform to those given in the IEC 60072 series.	The dimensions of the motors have been compliance with IEC 60072 series.	Pass
14.4	Motor mounting and compartments	-	-
	Each motor and its associated couplings, belts and pulleys, or chains, shall be so mounted that they are adequately protected and are easily for inspection maintenance, adjustment and alignment, lubrication, and replacement.	Appropriate mounting has been found that they are adequately protected and are easily for inspection.	Pass
	Shall be such that all motor hold-down means can be removed and all terminal boxes are accessible	Motor hold-down means can be removed and all terminal boxes are accessible.	Pass
	The proper cooling shall be ensured and the temperature rise remains within the limits of the insulation class	The proper cooling has been ensured and the temperature rise remains within the limits of the insulation class.	Pass
	Motor compartment should be clean and dry, and when required, shall be ventilated directly to the exterior of the machine	All motor compartments are clean and dry, and are ventilated directly to the exterior of the machine.	Pass
	The vents shall be such that ingress of swarf, dust, or water spray is at an acceptable level	The vents have been such that ingress of swarf, dust, or water spray is at an acceptable level.	Pass
	There shall be no opening between the motor compartment and any other compartment that does not meet the motor compartment requirements	There is no opening between the motor compartment and any other compartment that does not meet the motor compartment requirements.	Pass
	If a conduit or pipe is run into the motor compartment from another compartment not meet the motor compartment requirements, any clearance around the conduit or pipe shall be sealed	No any conduit or pipe run into the motor compartment from another compartment not meet the motor compartment requirements.	Pass
14.5	Criteria for motor selection	-	-
	Shall be selected according to the anticipated service and physical environment conditions	It is compliance with this requirement.	Pass
	In this respect, the points that shall be considered	-	-

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 77 of 89




Clause	Requirement - test	Result	Verdict
	include:		
	- type of motor;	It has been considered.	Pass
	- type of duty cycle (see IEC 60034-1);	It has been considered.	Pass
	- fixed speed or variable speed operation, (and the consequent variable influence of the ventilation);	It has been considered.	Pass
	- mechanical vibration;	It has been considered.	Pass
	- type of motor control;	It has been considered.	Pass
	- influence of the harmonic spectrum of the voltage and/or current feeding the motor (particularly when it is supplied from a static converter) on the temperature rise;	It has been considered.	Pass
	- method of starting and the possible influence of the inrush current on the operation of other users of the same power supply, taking also into account possible special considerations stipulated by the supply authority;	It has been considered.	Pass
	- variation of counter-torque load with time and speed;	It has been considered.	Pass
	- influence of loads with large inertia	It has been considered.	Pass
	- influence of constant torque or constant power operation;	It has been considered.	Pass
	- possible need of inductive reactors between motor and converter.	It has been considered.	Pass
14.6	Protective devices for mechanical brakes	-	-
	Operation of the overload and overcurrent protective devices for mechanical brake actuators shall initiate the simultaneous de-energization (release) of the associated machine actuators	Appropriate motor has been used for this machine.	Pass
15	Accessories and lightning	-	-
15.1	Accessories	-	-
	Socket-outlets for accessory equipment shall comply :	-	-
	- Should conform to IEC 60309-1. Where that is not possible, they should be clearly marked with the voltage and current ratings	No socket-outlets are used for this machine.	N/A
	- The continuity of the protective bonding circuit to the socket-outlet shall be ensured except where protection is provided by PELV	No socket-outlets are used for this machine.	N/A
	- All unearthed conductors : Overcurrent or overload protection according to 7.2 and 7.3	No socket-outlets are used for this machine.	N/A

Clause	Requirement - test	Result	Verdict
	separately from the protection of other circuits		
	- If the power supply to the socket outlet is not disconnected by the supply disconnecting device, the clause 5.3.5 shall apply	No socket-outlets are used for this machine.	N/A
15.2	Local lighting of the machine and equipment	-	-
15.2.1	General	-	-
	Connections to the protective bonding circuit according to 8.2.2	Not applicable.	N/A
	The ON-OFF switch shall not be incorporated in the lampholder or in the flexible connecting cords	Not applicable.	N/A
	Stroboscopic effects from lights shall be avoided	Not applicable.	N/A
	Where fixed lighting is provided in an enclosure, electromagnetic compatibility should be taken into account using the principles outlined in 4.4.2.	Not applicable.	N/A
15.2.2	Supply	-	-
	The nominal voltage of the local lighting circuit shall not exceed 250 V between conductors. A voltage not exceeding 50 V between conductors is recommended.	Not applicable.	N/A
	Lighting circuits shall be supplied from one of the following sources (see also 7.2.6):	Not applicable.	N/A
	<ul style="list-style-type: none"> – a dedicated isolating transformer connected to the load side of the supply disconnecting device. Overcurrent protection shall be provided in the secondary circuit; – a dedicated isolating transformer connected to the line side of the supply disconnecting device. That source shall be permitted for maintenance lighting circuits in control enclosures only. Overcurrent protection shall be provided in the secondary circuit (see also 5.3.5 and 13.1.3); – a machine circuit with dedicated overcurrent protection; – an isolating transformer connected to the line side of the supply disconnecting device, provided with a dedicated primary disconnecting means (see 5.3.5) and secondary overcurrent protection, and mounted within the control enclosure adjacent to the supply disconnecting device (see also 13.1.3); 	Not applicable.	N/A

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4


Page 79 of 89

Clause	Requirement - test	Result	Verdict
	– an externally supplied lighting circuit (for example factory lighting supply). This shall be permitted in control enclosures only, and for the machine work light(s) where their total power rating is not more than 3 kW.		
15.2.3	Protection	-	-
	Local lighting shall be protected according to 7.2.6.	Not applicable.	N/A
15.2.4	Fittings	-	-
	Adjustable lighting fittings shall be suitable for the physical environment	Not applicable.	N/A
	The lampholders shall be : - according to the relevant IEC publication; - constructed with an insulating material protecting the lamp cap so as to prevent unintended contact	Not applicable.	N/A
	Reflectors shall be supported by a bracket and not by the lampholder	Not applicable.	N/A
16	Marking, warning signs and reference designations	-	-
16.1	General	-	-
	Warning signs, nameplates, markings, and identification plates shall be of sufficient durability to withstand the physical environment involved.	It can be of sufficient durability to withstand the physical environment involved.	Pass
16.2	Warning signs	-	-
16.2.1	Electric shock hazard	-	-
	Enclosures that do not otherwise clearly show that they contain electrical equipment that can give rise to a risk of electric shock shall be marked with the graphical symbol IEC 60417-5036 (DB:2002-10) 	 has been used for every electricity part	Pass
	The warning sign shall be plainly visible on the enclosure door or cover	 is plainly visible on the enclosure door.	Pass
	The warning sign may be omitted (see also 6.2.2 b)) for:	-	-
	– an enclosure equipped with a supply disconnecting device;	Not applicable.	N/A

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 80 of 89

Clause	Requirement - test	Result	Verdict
	– an operator-machine interface or control station;	This clause has been met	Pass
	– a single device with its own enclosure (for example position sensor).	Not applicable.	N/A
16.2.2	Hot surfaces hazard	-	-
	Where the risk assessment shows the need to warn against the possibility of hazardous surface temperatures of the electrical equipment, the graphical symbol IEC 60417-5041 (DB:2002-10) shall be used. 	It is in compliance with this requirement.	Pass
16.3	Functional identification	-	-
	Control devices, visual indicators and displays, used in man-machine interface shall be clearly and durably marked with regard to their functions either on or adjacent to the item	The function test according to the instruction manual has been carried out during inspection.	Pass
	Preference should be given to the use of standard symbols given in IEC 60417 and ISO 7000	The symbols referred to IEC 60417 and/or ISO-7000 have been used for the operational function of this machine.	Pass
	Preference should be given to the use of standard symbols given in IEC 60417 and ISO 7000	It is in compliance with this requirement.	Pass
16.4	Marking of equipment	-	-
	Equipment (for example controlgear assemblies) shall be legibly and durably marked in a way that is plainly visible after the equipment is installed.	It is in compliance with this requirement.	Pass
	A nameplate giving the following information shall be attached to the enclosure adjacent to each incoming supply:	The appropriate nameplate has been found on the machine.	Pass
	– name or trade mark of supplier;	This data has been contained.	Pass
	– certification mark, when required;	This data has been contained.	Pass
	– serial number, where applicable;	This data has been contained.	Pass
	– rated voltage, number of phases and frequency (if a.c.), and full-load current for each supply;	This data has been contained.	Pass
	– short-circuit rating of the equipment;	No this contained.	N/A
	– main document number (see IEC 62023).	No this contained.	N/A
	The full-load current shown on the nameplate shall be not less than the running currents for all motors and other equipment that can be in operation at the same time under normal conditions.	No this contained.	N/A

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 81 of 89

Clause	Requirement - test	Result	Verdict
	Where only a single motor controller is used, that information may instead be provided on the machine nameplate where it is plainly visible.	Not applicable.	N/A
16.5	Reference designations	-	-
	All enclosures, assemblies, control devices, and components shall be plainly identified with the same reference designations as shown in the technical documentation	Appropriate identification has been found on the nameplate of this machine.	Pass
17	Technical documentation	-	-
17.1	General	-	-
	The information necessary for installation, operation, and maintenance of the electrical equipment of a machine shall be supplied in the form of drawings, diagrams, charts, tables and instructions	Electrical circuit diagrams, component part lists, as well as the installation instruction have been included on the technical construction file.	Pass
	The information shall be in an agreed language	Basically the information is constructed in English.	Pass
	The information provided may vary with the complexity of the electrical equipment.	It is in compliance with this requirement.	Pass
	For very simple equipment, the relevant information may be contained in one document, provided that the document shows all the devices of the electrical equipment and enables the connections to the supply network to be made.	It is in compliance with this requirement.	Pass
17.2	Information to be provided	-	-
	The information provided with the electrical equipment shall include:	-	-
	a) A main document (parts list or list of documents);	It has been provided.	Pass
	b) Complementary documents including:	-	-
	1) a clear, comprehensive description of the equipment, installation and mounting, and the connection to the electrical supply(ies);	It has been provided.	Pass
	2) electrical supply(ies) requirements;	It has been provided.	Pass
	3) information on the physical environment (for example lighting, vibration, atmospheric contaminants) where appropriate;	It has been provided.	Pass
	4) overview (block) diagram(s) where appropriate;	It has been provided.	Pass
	5) circuit diagram(s);	It has been provided.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 82 of 89

Clause	Requirement - test	Result	Verdict
	6) information (as applicable) on:	-	-
	• programming, as necessary for use of the equipment;	It has been provided.	Pass
	• sequence of operation(s);	It has been provided.	Pass
	• frequency of inspection;	It has been provided.	Pass
	• frequency and method of functional testing;		
	• guidance on the adjustment, maintenance, and repair, particularly of the protective devices and circuits;	It has been provided.	Pass
	• recommended spare parts list; and	It has been provided.	Pass
	• list of tools supplied.	It has been provided.	Pass
	7) a description (including interconnection diagrams) of the safeguards, interlocking functions, and interlocking of guards against hazards, particularly for machines operating in a co-ordinated manner;	It has been provided.	Pass
	8) a description of the safeguarding and of the means provided where it is necessary to suspend the safeguarding (for example for setting or maintenance), (see 9.2.4);	It has been provided.	Pass
	9) instructions on the procedures for securing the machine for safe maintenance; (see also 17.8);	It has been provided.	Pass
	10) information on handling, transportation and storage;	It has been provided.	Pass
	11) information regarding load currents, peak starting currents and permitted voltage drops, as applicable;	It has been provided.	Pass
	12) information on the residual risks due to the protection measures adopted, indication of whether any particular training is required and specification of any necessary personal protective equipment.	It has been provided.	Pass
17.3	Requirements applicable to all documentation	-	-
	Unless otherwise agreed between manufacturer and user:	-	-
	- the documentation shall be in accordance with relevant parts of IEC 61082;	It is in compliance with this requirement.	Pass
	- reference designations shall be in accordance with relevant parts of IEC 61346;	It is in compliance with this requirement.	Pass
	- instructions/manuals shall be in accordance with	It is in compliance with this requirement.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 83 of 89

Clause	Requirement - test	Result	Verdict
	IEC 62079.		
	- parts lists where provided shall be in accordance with IEC 62027, class B.	It is in compliance with this requirement.	Pass
	For referencing of the different documents, the supplier shall select one of the following methods:	-	-
	- where the documentation consists of a small number of documents (for example less than 5) each of the documents shall carry as a cross-reference the document numbers of all other documents belonging to the electrical equipment; or	Not applicable.	N/A
	- for single level main documents only (see IEC 62023), all documents shall be listed with document numbers and titles in a drawing or document list; or	Not applicable.	N/A
	- all documents of a certain level (see IEC 62023) of the document structure shall be listed, with document numbers and titles, in a parts list belonging to the same level.	It is in compliance with this requirement.	Pass
17.4	Installation documents	-	-
	shall give all information necessary for the preliminary work of setting up the machine (including commissioning). In complex cases, it may be necessary to refer to the assembly drawings for details.	It is in compliance with this requirement.	Pass
	The recommended position, type, and cross-sectional areas of the supply cables to be installed on site shall be clearly indicated.	It is in compliance with this requirement.	Pass
	The data necessary for choosing the type, characteristics, rated currents, and setting of the overcurrent protective device(s) for the supply conductors to the electrical equipment of the machine shall be stated (see 7.2.2).	It is in compliance with this requirement.	Pass
	Where necessary, the size, purpose, and location of any ducts in the foundation that are to be provided by the user shall be detailed (see Annex B).	It is in compliance with this requirement.	Pass
	The size, type, and purpose of ducts, cable trays, or cable supports between the machine and the associated equipment that are to be provided by	It is in compliance with this requirement.	Pass

Clause	Requirement - test	Result	Verdict
	the user shall be detailed (see Annex B).		
	Where necessary, the diagram shall indicate where space is required for the removal or servicing of the electrical equipment.	It is in compliance with this requirement.	Pass
	In addition, where it is appropriate, an interconnection diagram or table shall be provided. That diagram or table shall give full information about all external connections. Where the electrical equipment is intended to be operated from more than one source of electrical supply, the interconnection diagram or table shall indicate the modifications or interconnections required for the use of each supply.	It is in compliance with this requirement.	Pass
17.5	Overview diagrams and function diagrams	-	-
	Where it is necessary to facilitate the understanding of the principles of operation, an overview diagram shall be provided.	An overview diagram has been provided.	Pass
	An overview diagram symbolically represents the electrical equipment together with its functional interrelationships without necessarily showing all of the interconnections.	It is in compliance with this requirement.	Pass
	Function diagrams may be provided as either part of, or in addition to, the overview diagram.	It is in compliance with this requirement.	Pass
17.6.	Circuit diagrams	-	-
	A circuit diagram(s) shall be provided. This diagram(s) shall show the electrical circuits on the machine and its associated electrical equipment.	The control circuit diagram has been included on this technical construction file.	Pass
	Any graphical symbol not shown in IEC 60617-DB:2001 shall be separately shown and described on the diagrams or supporting documents. The symbols and identification of components and devices shall be consistent throughout all documents and on the machine.	Graphical symbol has been separately shown and described on the diagrams.	Pass
	Where appropriate, a diagram showing the terminals for interface connections shall be provided. That diagram may be used in conjunction with the circuit diagram(s) for simplification. The diagram should contain a reference to the detailed circuit diagram of each unit shown.	A diagram showing the terminals for interface connections have been provided.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 85 of 89

Clause	Requirement - test	Result	Verdict
	Switch symbols shall be shown on the electromechanical diagrams with all supplies turned off (for example electricity, air, water, lubricant) and with the machine and its electrical equipment ready for a normal start.	Switch symbols have been shown on the electromechanical diagrams.	Pass
	Conductors shall be identified in accordance with 13.2.	Conductors have been identified in accordance with 13.2.	Pass
	Circuits shall be shown in such a way as to facilitate the understanding of their function as well as maintenance and fault location. Characteristics relating to the function of the control devices and components which are not evident from their symbolic representation shall be included on the diagrams adjacent to the symbol or referenced to a footnote.	Circuits have been shown in such a way as to facilitate the understanding of their function as well as maintenance and fault location.	Pass
17.7	Operating manual	-	-
	The technical documentation shall contain an operating manual detailing proper procedures for set-up and use of the electrical equipment. Particular attention should be given to the safety measures provided.	Appropriate operation manual has been provided.	Pass
	Where the operation of the equipment can be programmed, detailed information on methods of programming, equipment required, program verification, and additional safety procedures (where required) shall be provided.	Appropriate operation manual has been provided.	Pass
17.8	Maintenance manual	-	-
	The technical documentation shall contain a maintenance manual detailing proper procedures for adjustment, servicing and preventive inspection, and repair.	Necessary maintenance has been included on the instruction manual.	Pass
	Recommendations on maintenance/service intervals and records should be part of that manual. Where methods for the verification of proper operation are provided (for example software testing programs), the use of those methods shall be detailed.	Recommendations on maintenance/service intervals and records have been taken.	Pass
17.9	Parts list	-	-
	The parts list, where provided, shall comprise, as a minimum, information necessary for ordering spare or replacement parts (for example	No this situation.	N/A

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 86 of 89

Clause	Requirement - test	Result	Verdict
	components, devices, software, test equipment, technical documentation) required for preventive or corrective maintenance including those that are recommended to be carried in stock by the user of the equipment.		
18	Verification	-	-
18.1	General	-	-
	The extent of verification will be given in the dedicated product standard for a particular machine.	It is in compliance with this requirement.	Pass
	Where there is no dedicated product standard for the machine, the verifications shall always include the items a), b) and f) and may include one or more of the items c) to e):	-	-
	a) verification that the electrical equipment complies with its technical documentation;	This has been taken..	Pass
	b) in case of protection against indirect contact by automatic disconnection, conditions for protection by automatic disconnection shall be verified according to 18.2;	This has been taken..	Pass
	c) insulation resistance test (see 18.3);	This has been taken..	Pass
	d) voltage test (see 18.4);	This has been taken..	Pass
	e) protection against residual voltage (see 18.5);	This has been taken..	Pass
	f) functional tests (see 18.6).	This has been taken..	Pass
	When these tests are performed, it is recommended that they follow the sequence listed above.	Test has been carried out as the sequence listed below.	Pass
	When the electrical equipment is modified, the requirements stated in 18.7 shall apply	Attention for the test of re-construction has been stated on the instruction manual.	Pass
	For tests in accordance with 18.2 and 18.3, measuring equipment in accordance with the IEC 61557 series is applicable.	It is in compliance with this requirement.	Pass
	The results of the verification shall be documented.	It is in compliance with this requirement.	Pass
18.2	Verification of conditions for protection by automatic disconnection of supply	-	-
18.2.1	General	-	-
	The conditions for automatic disconnection of supply (see 6.3.3) shall be verified by tests	Appropriate test condition has been set according to this requirement.	Pass
18.2.2	Test methods in TN-systems	-	-

Clause	Requirement - test	Result	Verdict
	Test 1 verifies the continuity of the protective bonding circuit. Test 2 verifies the conditions for protection by automatic disconnection of the supply.	Appropriate test condition has been set according to this requirement.	Pass
	Test 1 – Verification of the continuity of the protective bonding circuit	-	-
	The resistance of each protective bonding circuit between the PE terminal (see 5.2 and Figure 2) and relevant points that are part of each protective bonding circuit shall be measured with a current between at least 0,2 A and approximately 10 A derived from an electrically separated supply source (for example SELV, see 413.1 of IEC 60364-4-41) having a maximum no-load voltage of 24 V a.c. or d.c.. It is recommended not to use a PELV supply since such supplies can produce misleading results in this test. The resistance measured shall be in the expected range according to the length, the cross sectional area and the material of the related protective bonding conductor(s).	It is in compliance with this requirement.	Pass
	Test 2 – Fault loop impedance verification and suitability of the associated overcurrent protective device	-	-
	The connections of the power supply and of the incoming external protective conductor to the PE terminal of the machine, shall be verified by inspection.	It is in compliance with this requirement.	Pass
	The conditions for the protection by automatic disconnection of supply in accordance with 6.3.3 and Annex A shall be verified by both:	It is in compliance with this requirement.	Pass
	1) verification of the fault loop impedance by:	-	-
	– calculation, or	It is in compliance with this requirement.	Pass
	– measurement in accordance with A.4, and	Not applicable.	N/A
	2) confirmation that the setting and characteristics of the associated overcurrent protective device are in accordance with the requirements of Annex A.	It is in compliance with this requirement.	Pass
18.2.3	Application of the test methods for TN-systems	-	-
	Test 1 of 18.2.2 shall be carried out on each protective bonding circuit of a machine.	It is in compliance with this requirement.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 88 of 89

Clause	Requirement - test	Result	Verdict
	When Test 2 of 18.2.2 is carried out by measurement, it shall always be preceded by Test 1	It is in compliance with this requirement.	Pass
	The tests that are necessary for machines of different status are specified in Table 9. Table 10 can be used to enable determination of the machine status.	It is in compliance with this requirement.	Pass
18.3	Insulation resistance tests	-	-
	When insulation resistance tests are performed, the insulation resistance measured at 500 V d.c. between the power circuit conductors and the protective bonding circuit shall be not less than 1 MΩ. The test may be made on individual sections of the complete electrical installation.	Test voltage=500Vd.c, and the protective bonding circuit do not less than 1 MΩ	Pass
	Exception: for certain parts of electrical equipment, incorporating for example busbars, conductor wire or conductor bar systems or slip-ring assemblies, a lower minimum value is permitted, but that value shall not be less than 50 kΩ.	Not applicable.	N/A
	If the electrical equipment of the machine contains surge protection devices which are likely to operate during the test, it is permitted to either:	-	-
	– disconnect these devices, or	Not applicable.	N/A
	– reduce the test voltage to a value lower than the voltage protection level of the surge protection devices, but not lower than the peak value of the upper limit of the supply (phase to neutral) voltage.	Not applicable.	N/A
18.4	Voltage tests	-	-
	When voltage tests are performed, test equipment in accordance with IEC 61180-2 should be used.	It is in compliance with this requirement.	Pass
	The test voltage shall be at a nominal frequency of 50 Hz or 60 Hz.	The test voltage is 50Hz.	Pass
	The maximum test voltage shall have a value of twice the rated supply voltage of the equipment or 1 000 V, whichever is the greater.	It is in compliance with this requirement.	Pass
	The maximum test voltage shall be applied between the power circuit conductors and the protective bonding circuit for a period of approximately 1 s.	It is in compliance with this requirement.	Pass

EN 60204-1: 2006+A1:2009 Safety of machinery-Electrical equipment of machines-
Part 1: General requirements

TEST REPORT NO.: HQ-150803-4

Page 89 of 89

Clause	Requirement - test	Result	Verdict
	The requirements are satisfied if no disruptive discharge occurs.	It is in compliance with this requirement.	Pass
	Components and devices that are not rated to withstand the test voltage shall be disconnected during testing.	It is in compliance with this requirement.	Pass
	Components and devices that have been voltage tested in accordance with their product standards may be disconnected during testing.	It is in compliance with this requirement.	Pass
18.5	Protection against residual voltages	-	-
	Tests shall be performed to ensure compliance with 6.2.4	After this testing the machine is operating normally.	Pass
18.6	Functional tests	-	-
	The functions of electrical equipment shall be tested.	The functions of the equipment related to safety are tested, and there is no abnormal condition in this machine.	Pass
	The function of circuits for electrical safety (for example earth fault detection) shall be tested.	It is tested, and there is no abnormal condition in this machine.	Pass
18.7	Retesting	-	-
	Where a portion of the machine and its associated equipment is changed or modified, that portion shall be reverified and retested, as appropriate(see 18.1)	It is in compliance with this requirement.	Pass
	Particular attention should be given to the possible adverse effects that retesting can have on the equipment (for example overstressing of insulation, disconnection/reconnection of devices).	It is in compliance with this requirement.	Pass

Annex A

The EN 60204-1 test report

EN60204-1 Test Report

Manufacturer: Wenzhou Huaqiao Packing Machine Factory

EUT Sealing Machine

Model SF-150W

Test Equipment Withstand Voltage Tester:ZC25-3
Insulation Resistance Tester:ZC25-4
Grounding Tester:JD-8

Test conditions 10A/50HZ

According to: Chapter 52 and 53 of EN 60204-1

Date: 20 Aug.2015

1. Continuity of the protective bonding circuit

Test Points	Test Result(mΩ)	Test Current(A)	Voltage Drop(V)
PE-Control Panel	52	10	0.52
PE-Electrical Box	72	10	0.72
PE-Motor	65	10	0.65

2. Insulation Resistance

Test Points	Test Result(MΩ)
PE-Power Inlet	220
PE-Motor	250

3. Withstanding Voltage

Test Points	Breakdown
PE-Power Inlet	No
PE-Motor	No

3.2 Airborne noise test report

Noise Test Report

Manufacturer	Wenzhou Huaqiao Packing Machine Factory		
EUT	Sealing Machine		
Model	SF-150W	Date	20 Aug.2015
Test Condition	Running Free		
Test Equipment	Digital Sound Level Meter Type Test 1350A Manufacturer: TES Electronic Industrial Co., Ltd.		

Give as “dB (A)” unit, A-Weighted

	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Average
Position 1	50	49	50	49	50	49.6
Position 2	51	52	51	52	52	51.6
Position 3	48	47	48	49	48	48
Position 4	49	50	49	50	49	49.4
Average of 1 to 4						49.7

Manufacturer	Wenzhou Huaqiao Packing Machine Factory		
EUT	Sealing Machine		
Model	SF-150W	Date	20 Aug.2015
Test Condition	At normal working		
Test Equipment	Digital Sound Level Meter Type Test 1350A Manufacturer: TES Electronic Industrial Co., Ltd.		

Give as “dB (A)” unit, A-Weighted

	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Average
Position 1	70	69	69	70	70	69.6
Position 2	69	70	69	71	71	70.0
Position 3	69	71	69	70	70	69.8
Position 4	70	71	70	71	70	70.4
Average of 1 to 4						70.0

Annex: Technical information

A.1 Declaration of conformity with signature

A.2 Specifications table

A.3 Safety pictures

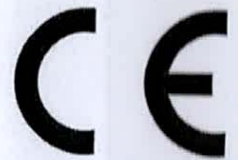
A.4 Mechanical drawing

A.5 Electrical system

A.6 Instruction manual

A.1 Declaration of conformity with signature

EC - DECLARATION OF CONFORMITY



APPLICANT

NAME : Wenzhou Huaqiao Packing Machine Factory
ADDRESS : No. 439, Binhai Fourth Road, Economic & Technological Development Zone, Wenzhou, Zhejiang, China
Phone / Fax : 0086-577-88998813 / 0086-577-88996613

We, Wenzhou Huaqiao Packing Machine Factory, herewith declare that;

Equipment Type / Model:

Sealing Machine;

SF-150W, SF-150LD, SF-150LW, FRM-980W, FRM-980LD, FRM-980LW, FRD-980AI, FRD-980AIII, FRQM-980C, SF-150WH, SF-150SD, FRQM-980CD

Related Directives:

2006/42/EC, Machinery Directive
2006/95/EC, Low Voltage Directive

Harmonized Standards:

- EN 415-3:1999+A1:2009 Safety of packaging machines - Part 3: Form, fill and seal machines.
ISO 12100:2010 Safety of machinery — general principles for design — risk assessment and risk reduction.
EN 60204-1:2006+A1:2009 Safety of Machinery – Electrical equipment of machines – Part 1: General requirements.
EN 953:1997+A1:2009 Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards.
EN 614-1:2006+A1:2009 Safety of machinery - Ergonomic design principles - Part 1: Terminology and general principles.
EN 1037:1995+A1:2008 Safety of machinery - Prevention of unexpected start-up.
ISO 3864-1:2011 Graphical symbols -- Safety colours and safety signs -- Part 1: Design principles for safety signs and safety markings.
EN ISO 13849-1:2008 Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design.
EN ISO 13849-2:2008 Safety of machinery - Safety-related parts of control systems - Part 2: Validation.

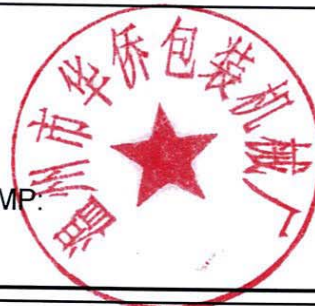
The described product/machines meet the essential requirements of the above mentioned standards and in our delivered version; comply with the appropriate basic essential health and safety requirements of the based on Machinery Directive 2006/42/EC and Low Voltage Directive 2006/95/EC. In case of alteration of the machine, not agreed upon by Wenzhou Huaqiao Packing Machine Factory; this declaration will lose its validity.

SIGNED ON BEHALF OF THE MANUFACTURER

NAME : Zhu Hua
POSITION : General Manager
PLACE / DATE : CHINA, 2015
SIGNATURE :

朱华

STAMP:



A.2 Specifications table

Specification table

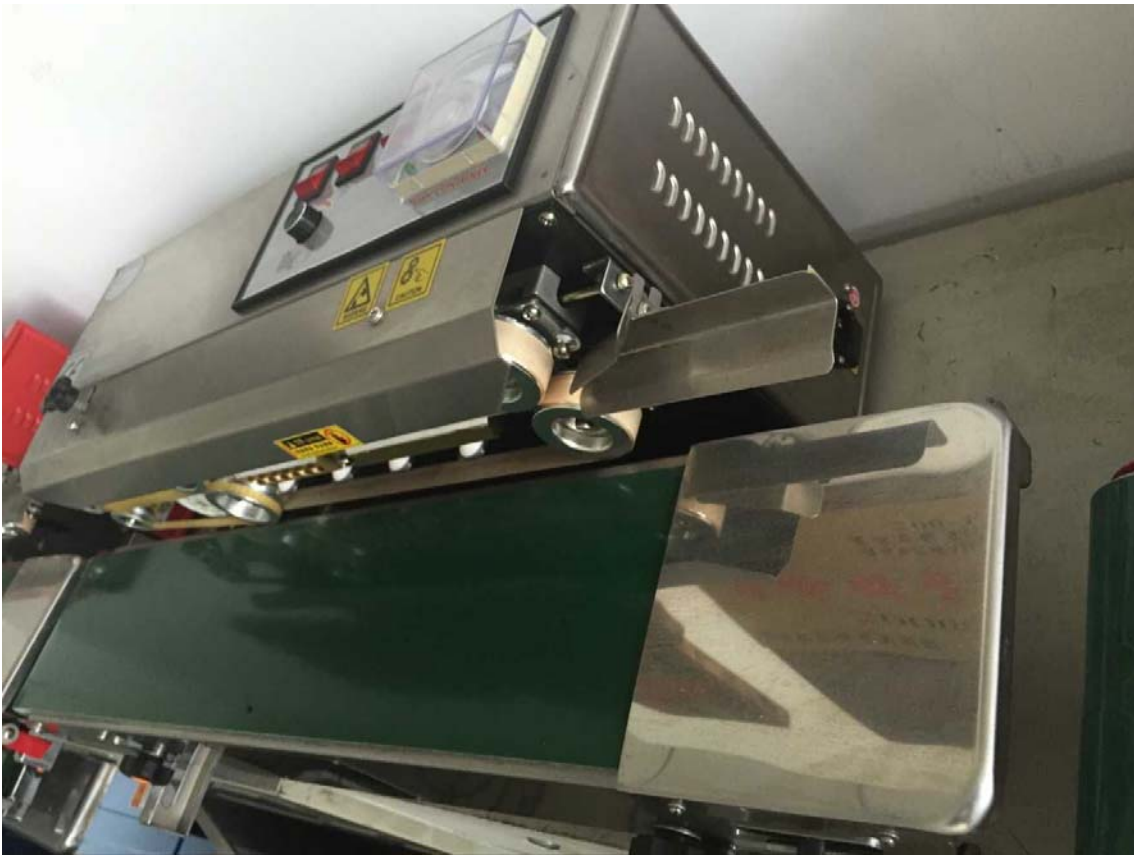
model	power voltage	power	thermal power	printing thermal power	printing type	sealing speed	sealing width	Temperature control range	Total load carrying capacity	packing size	Net weight Gross weight
SF-150W	AC 220V/50HZ 110V/60HZ	60W	280W×2			0-16m/min	10mm	0-300℃	≤5Kg	860×410×375mm	20.5Kg 23.5Kg
SF-150LD	AC 220V/50HZ 110V/60HZ	60W	280W×2			0-16m/min	10mm	0-300℃	≤5Kg	965×430×445mm	29.5Kg 32.5Kg
SF-150LW	AC 220V/50HZ 110V/60HZ	60W	280W×2			0-16m/min	10mm	0-300℃	≤5Kg	860×410×375mm	23.5Kg 26.5Kg
FRM-980W	AC 220V/50HZ 110V/60HZ	80W	280W×2	60W×2	Solid ink wheel	0-16m/min	10mm	0-300℃	≤5Kg	965×430×380mm	25.5Kg 28.5Kg
FRM-980LD	AC 220V/50HZ 110V/60HZ	80W	280W×2	60W×2	Solid ink wheel	0-16m/min	10mm	0-300℃	≤5Kg	965×430×445mm	35.5Kg 38.5Kg
FRM-980LW	AC 220V/50HZ 110V/60HZ	80W	280W×2	60W×2	Solid ink wheel	0-16m/min	10mm	0-300℃	≤5Kg	965×430×385mm	28.7Kg 31.7Kg
FRD-980AI	AC 220V/50HZ 110V/60HZ	80W	280W×2	60W×2	Solid ink wheel	0-16m/min	10mm	0-300℃	≤5Kg	965×430×380mm	27.15Kg 30.3Kg

FRD-980AII	AC 220V/50HZ 110V/60HZ	80W	280W×2	60W×2	Solid ink wheel	0-16m/min	10mm	0-300℃	≤5Kg	965×430×445mm	37.15Kg 40.2Kg
FRQM-980C	AC 220V/50HZ 110V/60HZ	80W	280W×2			0-16m/min	10mm	0-300℃	≤5Kg	1030×590×880mm	41Kg 48Kg
SF-150WH	AC 220V/50HZ 110V/60HZ	60W	280W×2			0-16m/min	10mm	0-300℃	≤5Kg	860×410×375mm	21.5Kg 24.5Kg
SF-150SD	AC 220V/50HZ 110V/60HZ	60W	280W×2			0-16m/min	10mm	0-300℃	≤5Kg	980×470×550mm	30Kg 47.8Kg
FRQM-980CI	AC 220V/50HZ 110V/60HZ	80W	280W×2			0-16m/min	10mm	0-300℃	≤5Kg	965×430×380mm	26Kg 29Kg

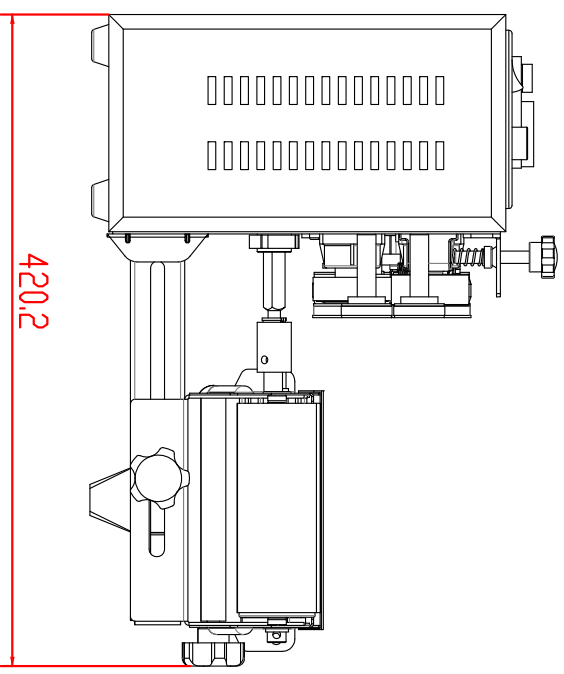
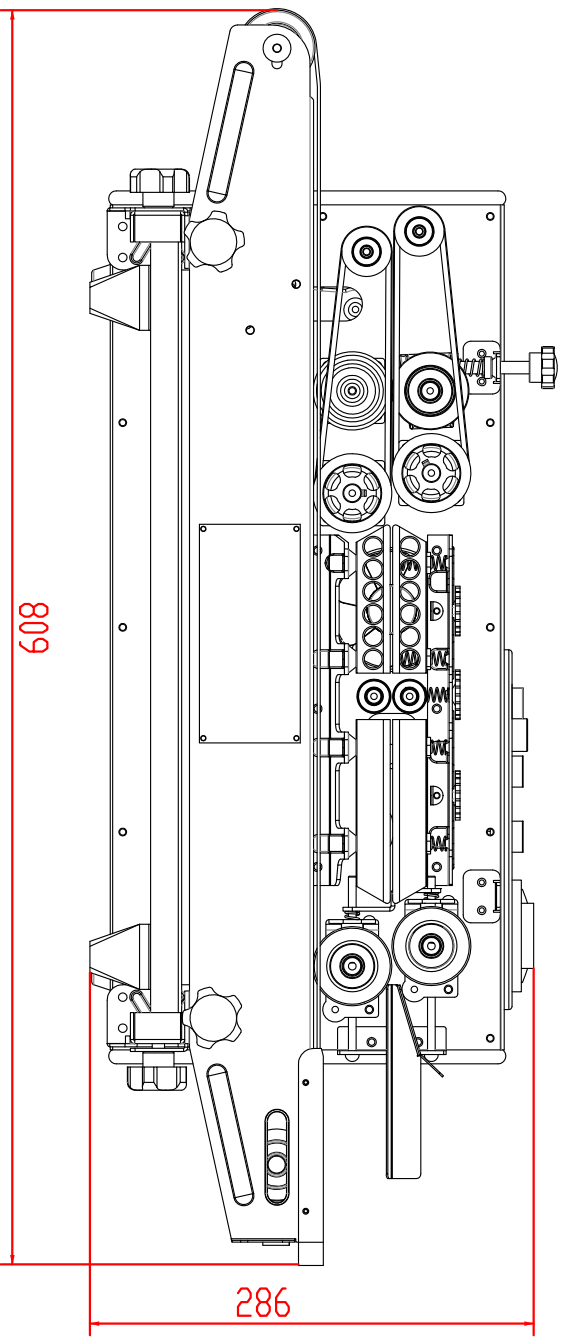
A.3 Safety pictures

outside look of the machine





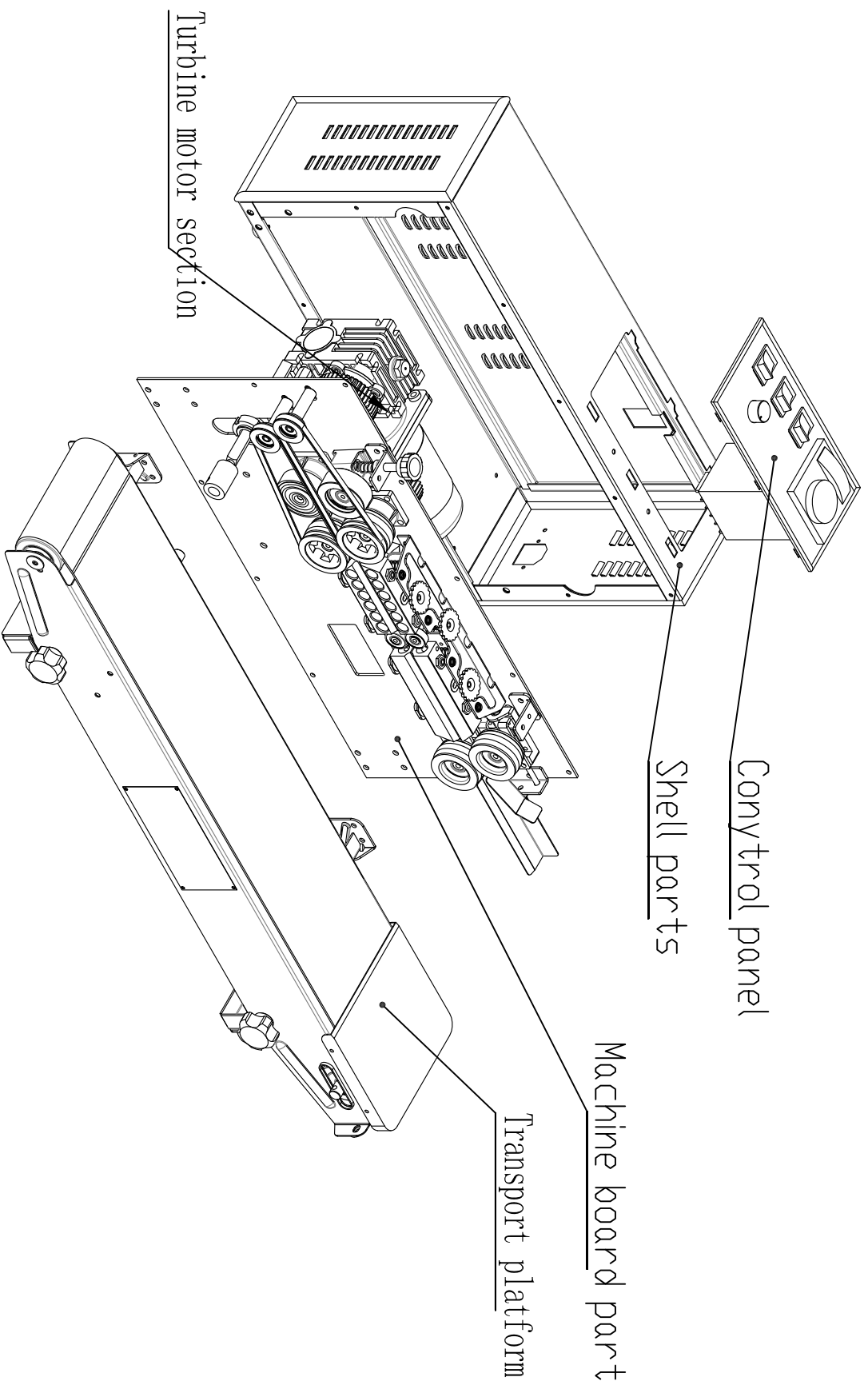
A.4 Mechanical drawing



比例	1:5		
重量			
数量	1		
设计	刘丽琼	日期	2015/7/29
校对		复审	
审核		标审	
工艺		批准	

Overall diagram		阶段标记	第1张
			共1张

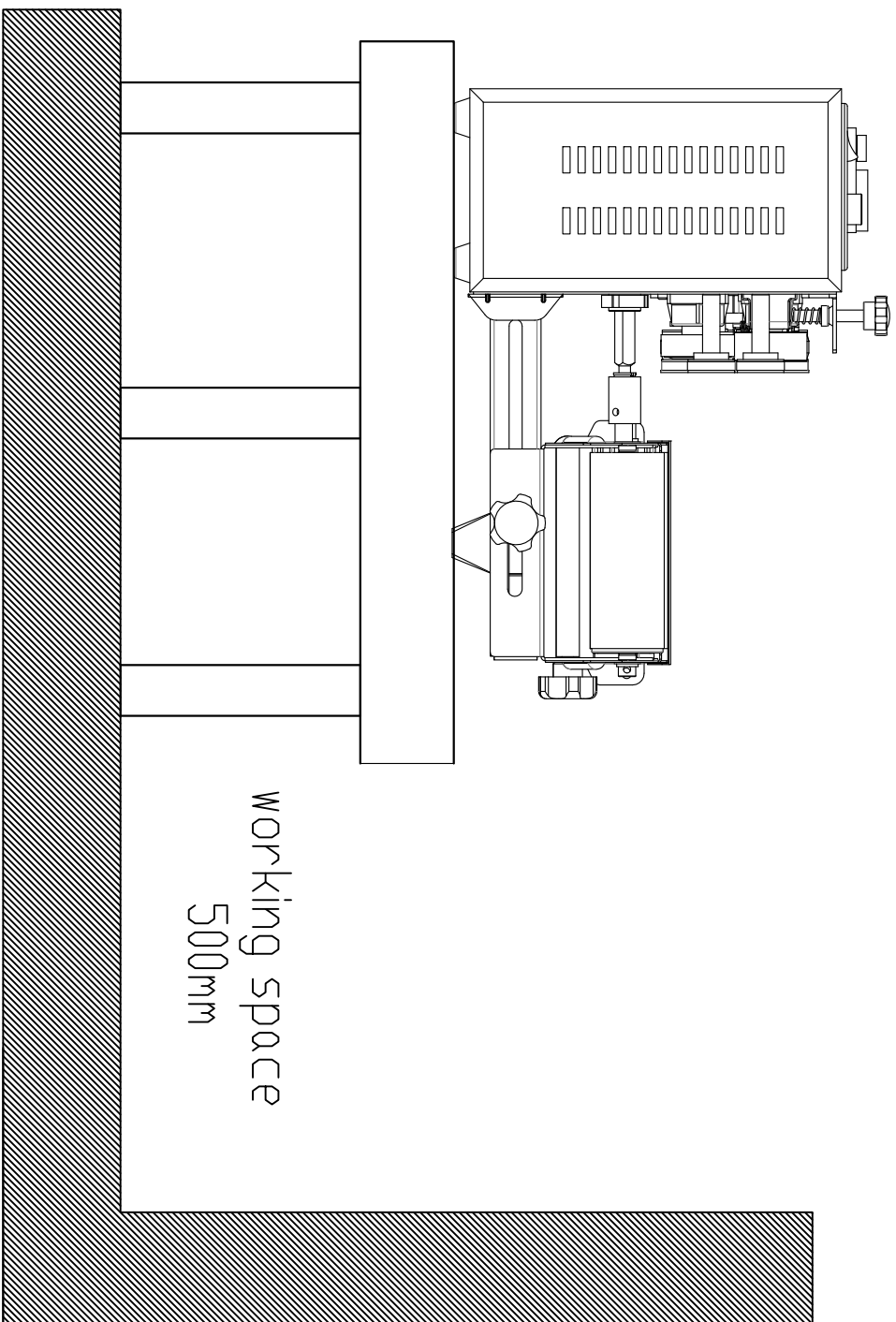
温州华侨包装机械厂
整机关配
SF150



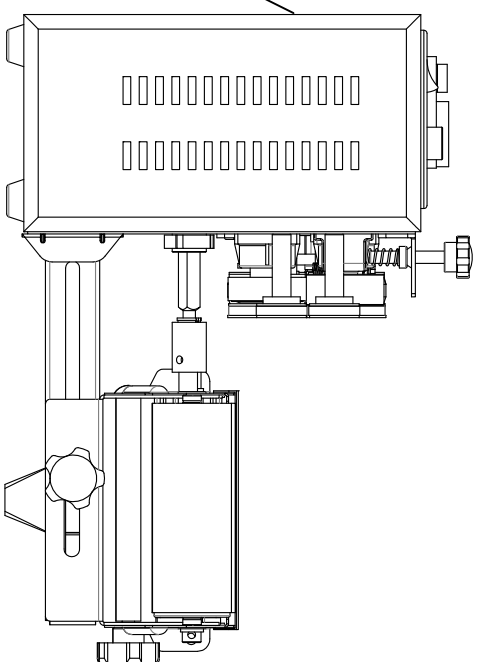
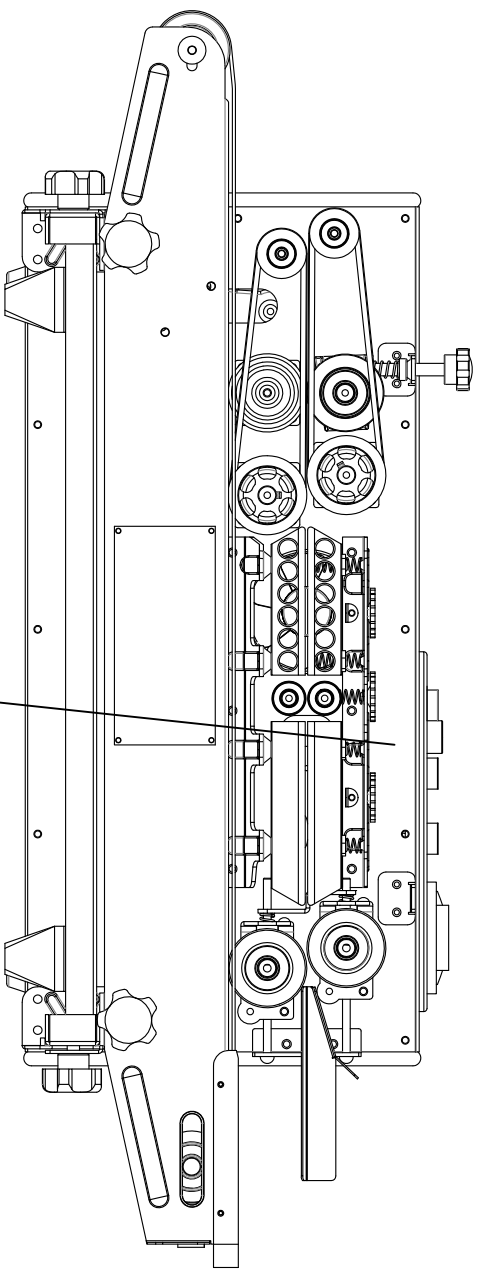
比例	1:6		
重量			
数量	1		
设计	刘丽琼	日期	2015/7/29
校对		复审	
审核		标审	
工艺		批准	

Assembly diagram		阶段标记	第1张
			共1张

温州华侨包装机械厂	示意图
	SF150封口机



比例		1:6		温州华侨包装机械厂	
重量				Operate space diagram	
数量		1			
设计	刘丽琼	日期	2015/7/29	示意图	
校对		复审			
审核		标注			
工艺		批准		阶段标记	
				第1张	
				共1张	
				SF150封口机	



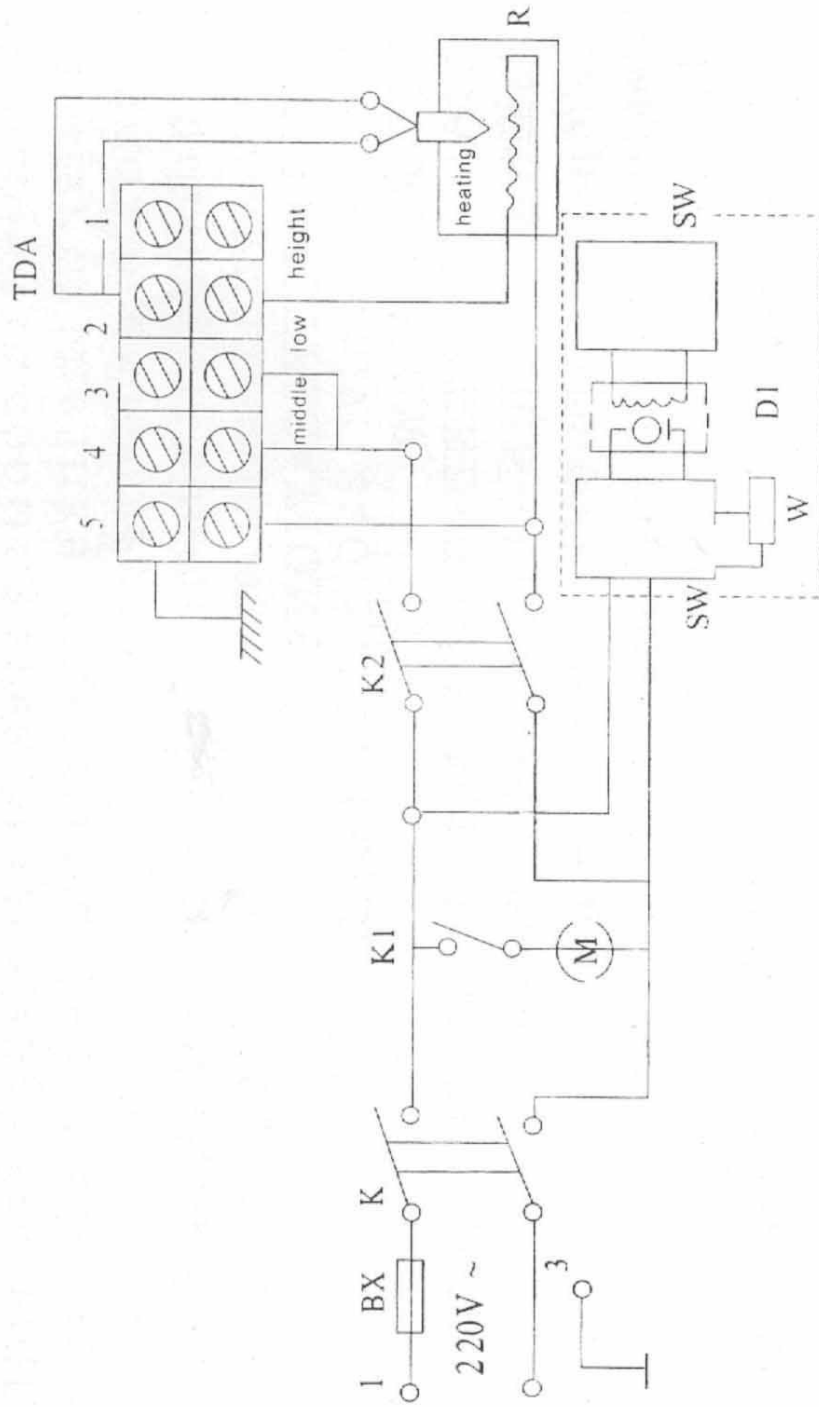
比例	1:5	Warning mark position diagram			温州华侨包装机械厂
重量					
数量	1				
设计	刘丽琼	日期	2015/7/29		
校对		复审			
审核		标审			
工艺		批准			
		阶段标记		第1张	共1张
					SF150

Nameplate

	SF-150 SEALING MACHINE	
Voltage:	220V 50Hz	Sealing Width: 10mm
Power:	620W	Temperature: 0-300°C
Sealing Speed:	0-16m/min	Net Weight : 20.5Kg
SERIAL NO.:	<input type="text"/>	DATE MFG: <input type="text"/>
WENZHOU HUAQIAO PACKING MACHINE FACTORY TEL:+86-577-88633888 FAX:+86-577-88628808 FTD:+86-577-88998813 www.huaqiaopm.com Email:huaqiaopm@huaqiaopm.com		

A.5 Electrical system

ELECTRICAL CEHEMATIC DRAWING



Electrical Component List

SN.	Code	Name	Model	Supplier	Qty.	Auth.
1	K	Power supply switch	TMX1 B/N	Tend	1	CE
2	D1	Motor	DT71K4	SEW	1	CE
3	M	Blower	AEVF	Liangchi	1	CE
4	K1	Blower switch	TMX1 B/N	Tend	1	CE
5	K2	Electro thermal switch	TMX1 B/N	Tend	1	CE

A.6 Instruction manual

Original Instruction

SF-150 MODEL

AUTOMATIC PLASTIC FILM CONTINUOUS SEALING MACHINE

OPERATION INSTRUCTION

CONTENTS

1.PURPOSE OF THE PRODUCT	(1)
2.PERFORMANCE AND CHARACTERISTICS	(1)
3.COMSTRUCTION AND WORKING PRINCIPLE	(2)
4.MAIN SPECIFICATIONS	(3)
5.ELECTRICAL SCHEMATIC DRAWING AND TABLE	(4)
6.WAY TO USE	(6)
7.WAY TO CHANGE THE HORIZONTAL TYPE INTO THE VERTICAL ONE	(12)
8.WAY TO CHANGE WORDS WITH THE INKER WHEEL	(13)
9.WAY TO MAINTAIN AND REPAIR	(14)
10.BILL OFPACKAGE	(21)
11.PRODUCT CERTIFICATE	(22)

1. PURPOSE OF THE PRODUCT

The machine is suitable for sealing and bag-making of various plastic and compound films and is a best sealing equipment to be widely used in such sectors as food, pharmaceutical, chemical industry, daily cosmetics, native and special local products, vegetable seeds, electronic components etc..

2. PERFORMANCE AND CHARACTERISTICS

With the electronic the most statistical control and the auto-transportation device, the machine can make various shapes of plastic film bags and be used for setting of various packing lines without limiting the sealing length; having the characteristics of high effectiveness of continuous sealing, reliable quality, reasonable construction, convenient operation etc.

Of the series machines there are horizontal type, horizontal and vertical dual type and console type; the horizontal type is used for packing and sealing of drying goods; the vertical one is used for

Liquid goods. in addition, the machine can be completed with an inker to directly print the factory' s name, trade mark, date of production or valid period, check number, batch number etc., Finishing both sealing and printing by one operation. The date and batch number can be changed whenever required to meet with the national food health law for packed goods. The machine can also be complred with a counter to count while sealing and printing, recording daily output.

3. COHSTRUCTION AND WORKING PRINGIPLE

The machine consists of frame, speed regulator, sealing length regulator, temperature control, drive and trasportation deviced.

When it turns on, the electrothermal component produces quantity of heat to make the temperature on both upper and lower heaters promptly rised and adjusts the temperature and speed necessary for the sealing material through the temperature control meter and the speed regulator, the plastic packing bag is transmitted by the conveyer bolt with ist sealing part sent into between the two runnign sealing

Braids and subjected to the extrusion of the two heaters in heating area to have the plastic film bound after being heated, then the bag is cooled in cooling area, its sealing part, rolled by the pattern roller or the inker wheel, is made out with stripes or netted veins and the necessary words.

The drive part consists of sealing braids, lead belt and conveyer belt all in synchronistical running driven by a motor.

4. MAIN SPECIFICATIONS

Power supply: $220 \pm 10V$, 50HZ

POWER: 500W

SEALING SPEED: 0-----16M/MIN(ADJUSTABLE)

Sealing width: 5~14mm (adjustable)

Temp. Range: 0-----300°C (adjustable)

Sealing length: unlimited

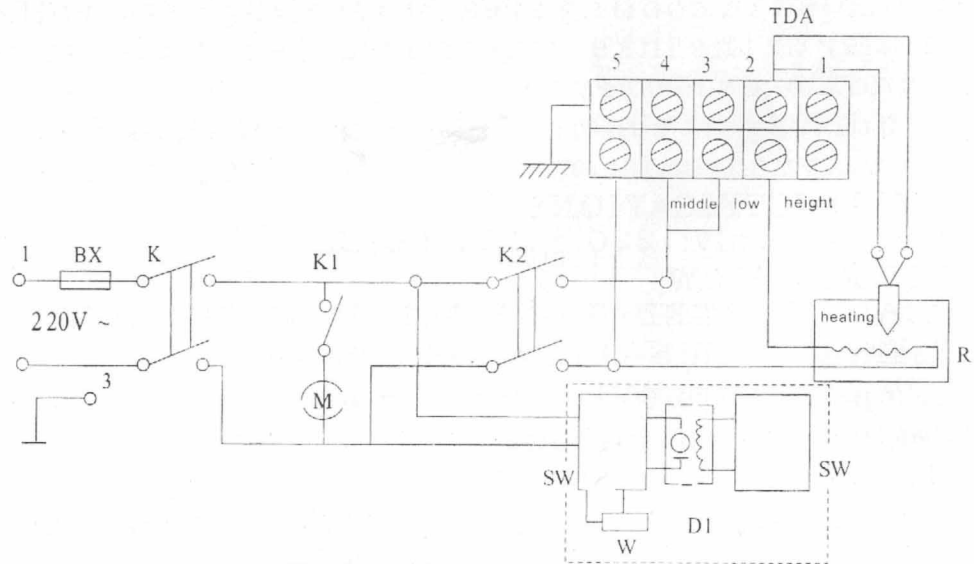
No. of printing words: 13

Exterior dimensions: horizontal type: 850X420X320(mm)

VERTICAL TYPE: 850X320X550(mm)

CONSOLE TYPE: 850X420X1000(mm)

5. ELECTRICAL CEHEMATIC DRAWING AND PABLE



Picture 1

DETAILED TABLE

symbol	Name	Model or ordination	Quantity
K	POWER SUPPLY SWITCH	Mk321 B/N	1
BK	Insurance tube	5X 20/3A	1
W	Potentiometer	WH118/100k	1
SW	Speed regulating plate	KL-W	1
D1	Motor	Z 50/20--200	1
M	Blower	75FZJ2	1
K1	Blower switch	Mk321 B/N	1
K2	Electro thermal switch	Mk321 B/N	1
R	Electro thermal tube	220V 220W	2
TDA	Temperature control meter	TDA8001 or Te2001	1
E	Electro thermal couple	EA-2	1

6.way to use

(1) legend and discription of the machine:

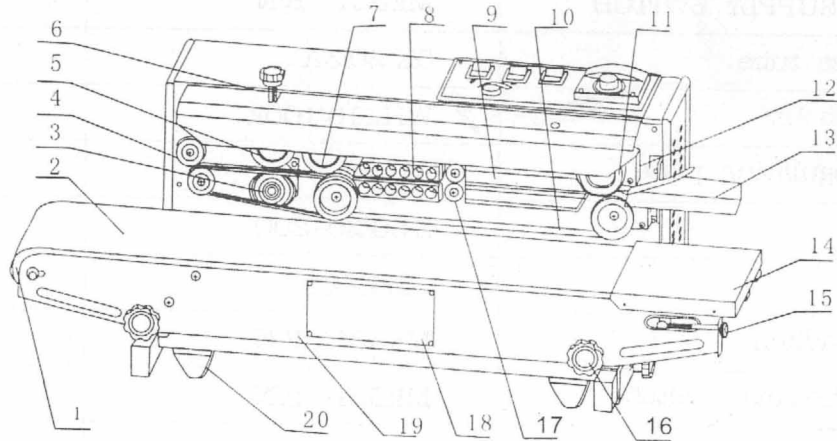


Fig.2
legend of the
horizontal type
machine

- 1.conveyer belt 2. Rnbber wheel 3.pattern roller(inker wheel)
4.inker wheel seat 5.pressure regulating wheel 6.driving wheel
7.safety guard 8.cooling block 9.heating block 10.sealing braid

11. Control box 12. Driven wheel 13. Guide plate of sealing width regulation 14. Power socket and safeguard 15. Fixed working table 16. Regulation screw of conveyer belt's elasticity 17. Regulation knob of conveyer station's in-out 18. Regulation knob of conveyer station's height 19. Guide wheel 20. Nameplate 21. Conveyer station

See Fig. 3:

1. Horizontal beam (vertical type) 2. Tripod (vertical type)
3. Conveyer station 4. Umbrella gear seat 5. Vertical long axis
6. Pressure regulating knob 7. Control box 8. Screw of inarch ground wire
9. Power supply socket 10. Support (horizontal type)
11. Height regulation knob 12. Fixed working table
13. Conveyer station's support 14. Fixing knob of conveyer station

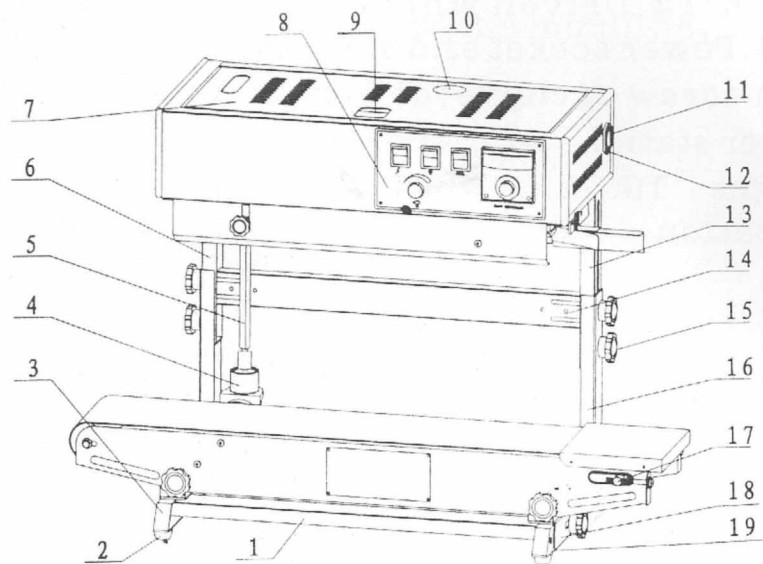
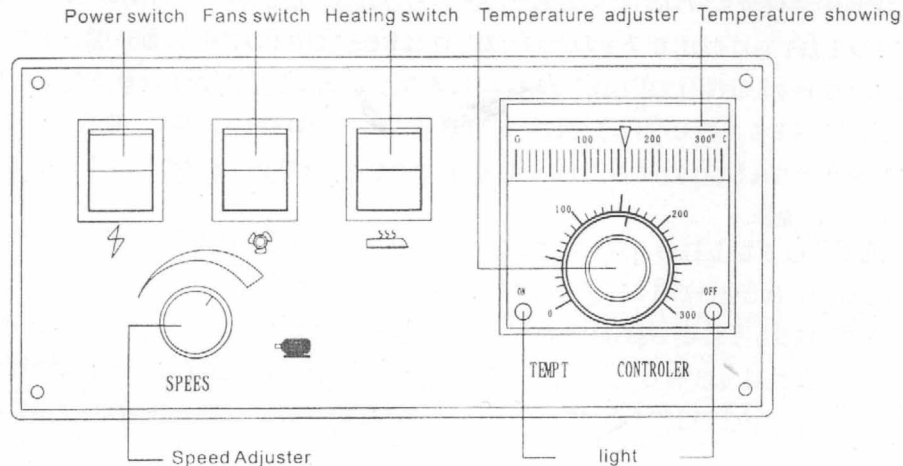


Fig.3 assembly drawing of the horizontal and vertical dual type machine in vertical

(2).Names of the control box



(3).preparation prior to start the machine:

(1).the machine is equipped with a shell-grounded triplex

Socket which should be well grounded when used to make sure of safe production.

2. The electrothermal component should be preheated with low temperature for a few of minutes before normal operation for it may be wetted in initial use or after long interval unused.

3. Adjust the height and the front-and-back position of the conveyer station to fit the necessary level of the sealing bag's exterior sizes.

4. Adjust the position of the guide plate of sealing width regulation according to its requirement.

5. Adjust the spaces between the upper and lower heaters and the upper and lower coolers (i.e. The spaces between the re-rolling braids) according to the necessary thickness of sealing material.

4. operation:

1. Turn on the power, the indicator lights and all wheels begin the begin their synchronistical running.

2. Adjust the knob of pattern roller to have it (or inker wheel)

rotated and regulated to suitable pressure.

3. Turn on the heating switch, the green lamp on the electronic temperature control meter lights, adjust the meter to necessary temperature according to the nature and the thickness of the packing bag's material. In general, the numerals below can be used for above adjustment at a room temperature of 20°C:

a). Polyethylene: 150-160°C

b). Polypropylene: 170-180°C

c). Polyolefine compound: 180-190°C

The flexibility of temperature adjustment can thus be increased for there is adjustable speed.

The red lamp lights after heating for a while indicating the required temperature is made, then a trial of sealing can be done with a preset packing bag to determine if the temperature, the speed and the pressure on the pattern roller (inker wheel) need to be adjusted upon the sealing result to get an ideal sealing quality, and after

that continuous sealing can be processed.

4. Determine if the blower needs turning on for cooling according to the thickness of the sealing material. (it should be turned on for common polyethylene etc. Single layer plastic films).

5. The sealing part of the bag should be aligned and flatly laid. Push the regulation plate for the sealing sides in and at the moment when the part is gripped by the sealing braids and self-moving forwards, neither pushing or stopping nor putting-in or pulling-out with force can be done, otherwise uneven sealings or faults may result.

7. way to change horizontal type into vertical one

(1). INSTALL two tripods and two horizontal beams with m4 screws, the concave of the tripod faces inward while that of the beam faces downward.

(2). Loose the regulation knob of conveyer station's in-out and pull the station out, then take out the knob and the square fixing screws to take out the station.

(3). Mount the station onto the vertical tripod and tighten the

Fixing knob.

(4). Take out the horizontal short axis and install the horizontal long axis and the umbrella gear seat.

(5). Put the long axis into the axial hole on the machine and the horizontal support into the vertical support, install and tighten the height regulation knob.

(6). Vertically place the sealing machine for vertical sealing.

8. WAY TO CHANGE WORDS WITH THE INKER WHEEL

(1). Take out the safety guard, loose the pressure knob on the inker wheel.

(2). Take out the lead belt, loose off the fixing screw in the printing axis.

(3). Tilt up the inker wheel seat to separate the inker wheel from the rubber wheel, pull out the pattern roller, the inker wheel can then be mounted or so after changing the printing words.

(4). Install the parts removed mentioned in (2) and (1), adjust the pressure on the inker wheel (the pattern wheel) to start a trial.

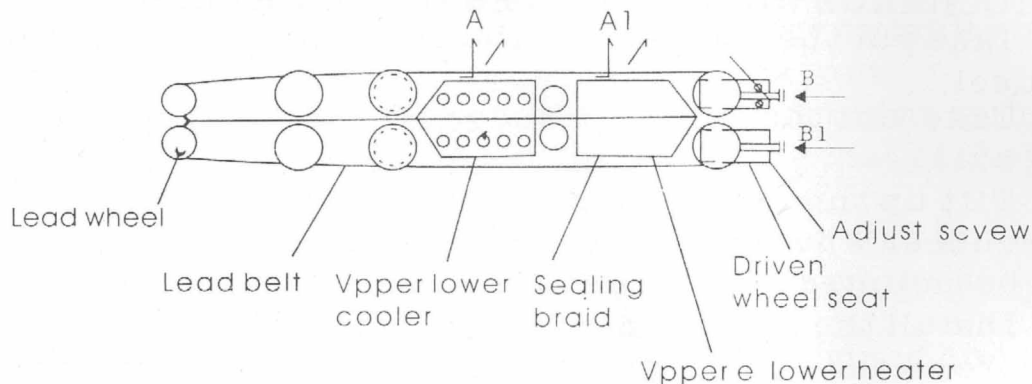
9. WAY TO MAINTAIN AND WLATR

1). The sealing bmid:

1. It must be done to stop and clean when something dirty with or adherent to the sealing braid and the heater was found.

2. Way to change and adjust the sealing braid.

A). take out the safety guand, turn the adsorptiong on the heater and cooler toward A and A1 Lift up every part to take out the upper and lower lead belts.



- b). Push the driven wheel toward B and take out the sealing braid.
- c). Change with a new braid and install the upper and lower lead belt.
- d). Place the driven wheel and the heater and the cooler in their original positions.
- e). Turn on the power to make the pulley rotated and the braid driven to move, then start a trial. The edge-deviation, if any, on the sealing braid can be adjusted through the screw on the driven wheel.
- f). Install the safety guard, then continuous operation can be done after heating.
- g). In order to prolong the duration of the sealing braid, prior to stop the machine, return the rotating disk of temperature adjustment to zero place and turn on the blower, at the moment, the temperature pointer begins slow falling down and the sealing braid is still running. It cannot be

done to turn off the blower, the master power switch etc. until the temperature becomes under 100c in minutes.

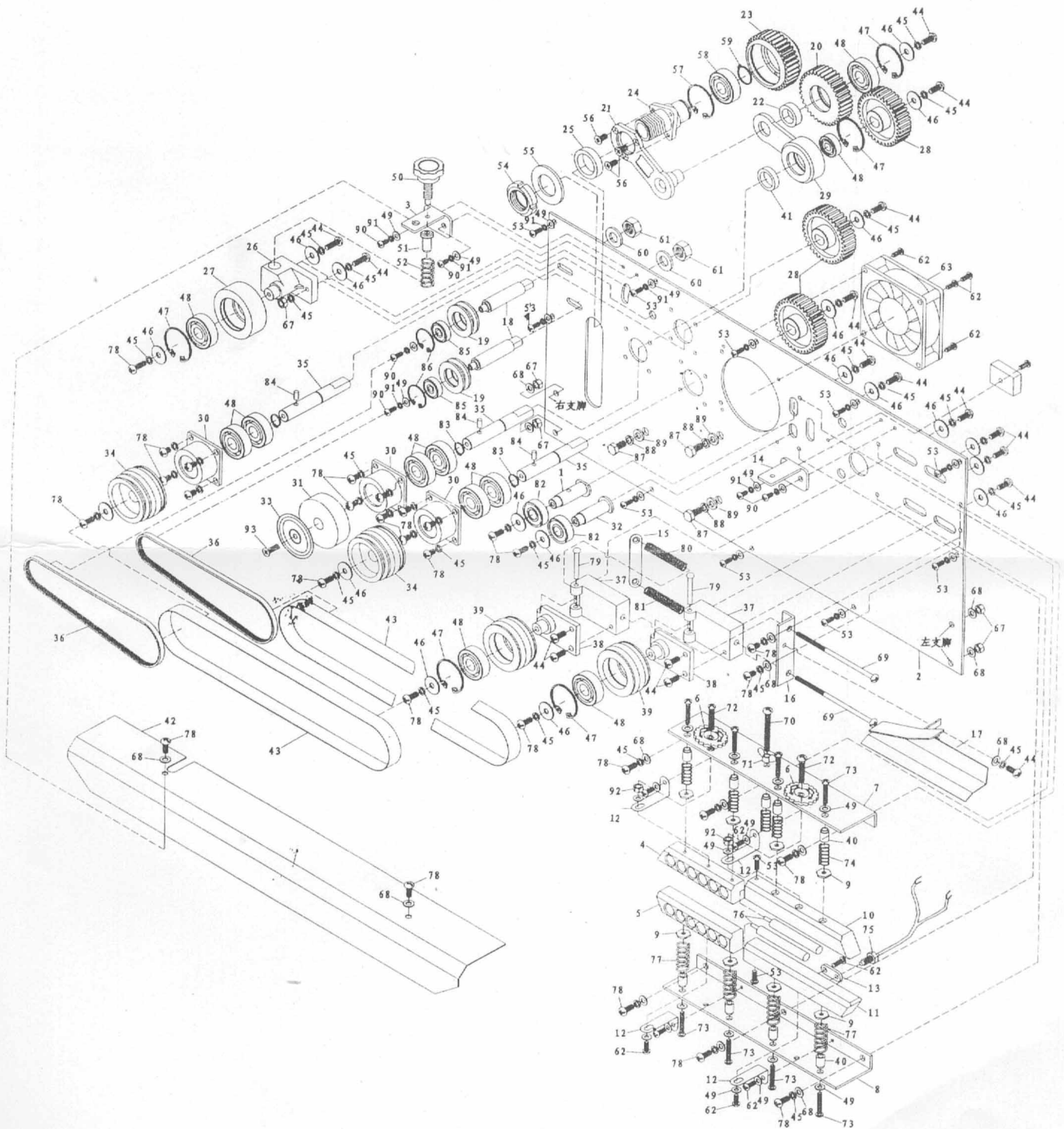
2). Turbo case:

As an overall sealed turbo and worm unit, the turbo case has the features of low noise, large power etc., oiled with 50g 20# oil only once a month and cleaned and maintained only once a year calculated per 8 hours a shift in general when in use. Care should be taken to keep cleaned inside of the case when maintaining to avoid appearing noise.

3). Way to repair

Faults	causes	Way to deal with
Hot to start	1. Power not electrified	1. check if the three-pin plug is inserted right, solid if the fuse is loosed or broken if the switch is damaged

The Illustration of the Machine's Body



	<p>2. Circuit-broken with the speed regulation plate</p>	<p>Or malconnected 2. Change the speed regulation plate</p>
<p>Without speed regulation Temperature not to rise</p>	<p>The speed regulation Plate or the potentiometer out of order</p> <ol style="list-style-type: none"> 1. The electrothermal tube broken 2. The lead termination of the electrothermal tube come off 3. The temp. Control meter out of control 4. The electrothermal couple out of control 	<p>Change the plate or the potentiometer</p> <ol style="list-style-type: none"> 1. Change the electrothermal tube 2. fix the lead and secure the fixing screw 3. Change the meter 4. Change the couple

Leakage	<ol style="list-style-type: none"> 1. The machine remains unused after last operation, moisture regained, an inductive electricity occurring 2. The electrothermal Tube's lead contacted the shell 3. No grounding device 	<ol style="list-style-type: none"> 1. Leakage wouldn't occur if preheat made prior to use 2. Insulated casing must be used for the lead 3. The operation instructions should be used for installation and operation
The lead belt	The upper & lower lead belt space too short or loose	Open the left-side panel to loosen M8 nut on the axis of the lead belt wheel to do upper and lower adjustment or pull the nut to left then tighten it
Sealing pattern unclear	<ol style="list-style-type: none"> 1. The pressure adjust knob too loose 2. The rubber wheel's surface uneven 3. Something adherent 	<ol style="list-style-type: none"> 1. Suitably adjust the knob 2. Change the rubber wheel 3. Clean the pattern-print

	5.B1,b2 screws too tightened	5.Adjust the screws per fig.5
<p>The sealing braid being slippery</p> <p>The conveyer belt being edge-deviated or slippery</p>	<p>1.The upper and lower braids too loose</p> <p>2.The pressure on the sealing braids by the upper and lower heaters and coolers too large</p> <p>The elasticity adjust screw of the conveyer belt unproperly left-right adjusted or too loose.</p>	<p>1.Slighty adjust b1, B2 per fig.5</p> <p>2.Properly reduce the pressure</p> <p>Adjust it according to fig.2--16 of the operation instructions</p>

10. BILL OF PACKAGE OF SF--150 TYPE SEALING MACHINE

Horizontal type machine and its accessories		Console type' sadding accessories	
Main machine	1 stand	power t--foot and foot-wheel	2 sets
power supply wire	1	upper t--fott	2
Sealing braid(no connector, compound)	3	console horizontal beam	2
Insurance tube	2	m6x 60 hex screw	8
screw-driver(cross, slot)	2	m5x 15 semicircular screw	4
production discription and certificate	1	secure panel	2
		knob	4
horizontal and vertical dual type' s adding accessored		parts for incremental order	
support	2 sets	inker wheel and printing words	
umbrella gear seat and axis	1 set	sealing braid (compound)	
m8x 15 semicircular head screw	2	lead belt	
m4x25 semicircular head screw	3	conveyer belt, heating pipe	

PRODUCT CERTIFICATE

The product has been checked qualified and approved
to leave the factory

Name of the product:

Plastic film continuous sealing machine

Model and ordination:

Sf--150 type

No. of ex-factory:

Inspector:

director of the section:

Date

Year

Month

Day