

Test Report

Application No. : LH-230703012172

Applicant : Dongguan Zhuopuxin Energy Technology Co., Ltd.

Equipment Under Test (EUT)

EUT Name : electric scooter

Model No. : X13

Serial No. : See Page 2

Brand Name : N/A

Receipt Date : 2023-07-24

Test Date : 2023-07-24 to 2023-08-03

Issue Date : 2023-08-07

Standards : BS EN 60204-1: 2018;
BS EN ISO 12100-1: 2010.

Test result : Compliance

Test/Witness Engineer



Approved & Authorized



This test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

<p>BS EN 60204-1: 2018 Safety Electrical equipment of machines BS EN ISO 12100-1: 2010 Safety of machinery —Basic concepts, general principles for design — Part 1: Basic terminology, methodology</p>	
Testing laboratory-----:	Shenzhen LH Testing Technology Co., Ltd.
Address-----:	106 and 107, building B15, Yintian Industrial Zone, Yantian community, Xixiang street, Bao'an District, Shenzhen.
Applicant-----:	Dongguan Zhuopuxin Energy Technology Co., Ltd.
Address-----:	Room 601, Building 1, No.69, Qingxi Xiangshan Road, Qingxi Town, Dongguan City, Guangdong Province
Standard-----:	BS EN 60204-1: 2018; BS EN ISO 12100-1: 2010.
Test result-----:	Compliance with the requirements.
Procedure deviation-----:	N.A.
Non-standard test method---	N.A.
Brand Name-----:	N/A
Type of test object-----:	electric scooter
Models/Type reference-----:	X13, X14
Rating-----:	DC 84V, 2A Adapter Input: AC 100-250V, 2.5A, 50-60Hz
Factory-----:	Dongguan Zhuopuxin Energy Technology Co., Ltd.
Address-----:	Room 601, Building 1, No.69, Qingxi Xiangshan Road, Qingxi Town, Dongguan City, Guangdong Province

Test item particulars:	
Operating condition-----:	N.A.
Class of equipment -----:	N.A.
Protection against ingress of water-----:	N.A.
Possible test case verdicts:	
Test case does not apply to the object-----:N	
Test object does meet the requirement -----: P	
Test object does not meet the requirement-----: F	
General product information:	
Unless otherwise specified, test are carried out in a draught-proof room at (20 ± 5) °C.	
General remarks:	
<p>1." (see remark #) " refers to a remark appended to the report.</p> <p>2. Throughout this report a point is used as the decimal separator.</p> <p>3. The test results presented in this report relate only to the object tested.</p> <p>4. All models are the same except model name and sharp.</p> <p>5. This report shall not be reproduced except in full without the written approval of the Shenzhen LH.</p> <p>6. If client has any objection to the testing results, please advise us within 15 working days after publish, otherwise claims will not be accepted.</p>	

Artwork of Marking Label

Name: electric scooter

Model: X13

Input: AC 100-250V, 2.5A, 50-60Hz

UK
CA



Dongguan Zhuopuxin Energy Technology Co., Ltd.

Made In China

BS EN 60204-1 & BS EN ISO 12100-1			
CL.	Requirement of the test	Result--Remark	Verdict
1	SCOPE		P
	defines technical principles to help designers in achieving safety in the design of machinery. This standard does not deal with damage to domestic animals, property or the environment.		P
4	INHERENTLY SAFE DESIGN MEASURES		P
4.1	General		P
4.2	Consideration of geometrical factors and physical aspects		P
4.2.1	Geometrical factors		P
	- designing the shape of machinery to maximize direct visibility of the working areas and hazard zones from the control position. and choosing and locating means of indirect vision where necessary so as to take into account the characteristics of human vision, particularly when safe operation requires permanent direct control by the operator	No shape effect human vision	P
	- the shape and the relative location of the mechanical component parts;	No such hazardous parts.	P
	- avoiding sharp edges and corners, protruding parts. In so far as their purpose allows, accessible parts of the machinery shall have no sharp edges, no sharp angles, no rough surfaces, no protruding parts likely to cause injury, and no openings which may "trap" parts of the body or clothing. In particular, sheet metal edges shall be deburred, flanged or trimmed, open ends of tubes which may cause a "trap" shall be capped	no such parts likely to cause injury.	P
	- designing the shape of the machine to achieve a proper working position and accessibility of manual controls (actuators)		P
4.2.2	Physical aspects		P
	- limiting the actuating force to a sufficiently low value so that the actuated part does not generate a mechanical hazard;		P
	- limiting the mass and/or velocity of the movable elements, and hence their kinetic energy;		P
	- limiting the emissions by acting on the characteristics of the source		P
	-measures for reducing noise emission at source (see ISO/TR 11688-1);		P
	-measures for reducing the emission of hazardous substances include		P
	-measures for reducing radiation emissions include		P

BS EN 60204-1 & BS EN ISO 12100-1			
CL.	Requirement of the test	Result--Remark	Verdict
	- measures for the reduction of emission of non-ionizing radiation are given in 5.4.5 (see also EN 12198-1 and -3).		P
4.3	Taking into account the general technical knowledge regarding machine design		P
	a) Mechanical stresses		P
	b) materials and their properties	Steel, Aluminium and Plastic	P
	c) emission values for:		P
	- noise;		P
	- vibration;		P
	- hazardous substances;		P
	- radiation.		P
4.4	Choice of an appropriate technology		P
	a) on machines intended for use in explosive atmospheres		P
	- fully pneumatic or hydraulic control system and machine actuators	No such control system	N
	- "intrinsically safe" electrical equipment (see IEC 60079-11)		P
	b) for particular products to be processed such as a solvent: equipment assuring that the temperature will remain far below the flash point .		P
	c) alternative equipment to avoid high noise level		P
	- electrical instead of pneumatic equipment	Electrical equipment	P
	- in certain conditions, water cutting instead of mechanical equipment.	No such equipments	N
4.5	Applying the principle of the positive mechanical action of a component on another component		N
	If a moving mechanical component inevitably moves another component along with it, either by direct contact or via rigid elements, these components are connected in the positive mode. An example of this is positive opening operation of switching devices in an electrical circuit	No such component used	N
4.6	Provisions for stability		P
	Machines shall be designed to have sufficient stability to allow them to be used safely in their specified conditions of use, Factors to be taken into	See below	P

BS EN 60204-1 & BS EN ISO 12100-1			
CL.	Requirement of the test	Result--Remark	Verdict
	account include:		
	-geometry of the base;		P
	-weight distribution, including loading;	Loading capacity :70Kg	P
	- dynamic forces due to movements of parts of the machine, of the machine itself, or of elements held by the machine which may result in an overturning moment		P
	- vibration		P
	- oscillations of the centre of gravity		P
	- characteristics of the supporting surface in case of travelling or installation on different sites		P
	- external forces		P
4.7	Provisions for maintainability		P
	- accessibility, taking into account the environment and the human body measurements, including the dimensions of the working clothes and tools used;		P
	- ease of handling, taking into account human capabilities		P
	- limitation of the number of special tools and equipment.		P
4.8	Observing ergonomic principles		P
4.8.1	Ergonomic principles shall be taken into account in designing machinery to reduce mental or physical stress and strain of the operator.		P
4.8.2	Avoiding stressful postures and movements during use of the machine	can ride it easily and comfortably	P
4.8.3	Designing machines, and more especially hand-held and mobile machines to enable them to be operated easily taking into account human effort, actuation of controls and hand, arm and leg anatomy.		P
4.8.4	Avoiding as far as possible noise, vibration, thermal effects		P
4.8.5	Avoiding linking the operator's working rhythm to an automatic succession of cycles.		N
4.8.6	Providing local lighting on or in the machine for the illumination of the working area and of adjusting, setting-up, and frequent maintenance zones when the design features of the machine and/or its guards render the ambient lighting inadequate. Flicker, dazzling, shadows and stroboscopic effects shall be avoided if they can cause a risk. If the position of the lighting source has to be adjusted, its location shall		N

BS EN 60204-1 & BS EN ISO 12100-1			
CL.	Requirement of the test	Result--Remark	Verdict
	be such that it does not cause any risk to persons making the adjustment.		
4.8.7	Selecting, locating and identifying manual controls (actuators) so that		P
	-they are clearly visible and identifiable and appropriately marked where necessary		P
	-they can be safely operated without hesitation or loss of time and without ambiguity		P
	-their location (for push-buttons) and their movement (for levers and handwheels) are consistent with their effect (see IEC 61310-3)		P
	-their operation cannot cause additional risk.	No additional risk caused	P
4.8.8	Selecting, designing and locating indicators, dials and visual display units so that		P
	-they fit within the parameters and characteristics of human perception		P
	-information displayed can be detected, identified and interpreted conveniently, i.e. long lasting, distinct, unambiguous and understandable with respect to the operator's requirements and the intended use;		P
	-the operator is able to perceive them from the control position.		P
4.9	Preventing electrical hazard		P
4.10	Preventing hazards from pneumatic and hydraulic equipment		N
	Pneumatic and hydraulic equipment of machinery shall be designed so that:		N
	- the maximum rated pressure cannot be exceeded in the circuits	No such equipment	N
	- no hazard results from pressure surges or rises, pressure losses or drops or losses of vacuum;		N
	- no hazardous fluid jet or sudden hazardous movement of the hose (whiplash) results from leakage or component failures	No such equipment	N
	- air receivers, air reservoirs or similar vessels (e.g. in gas loaded accumulators) comply with the design rules for these elements	See below	N
	- all elements of the equipment, and especially pipes and hoses, be protected against harmful external effects		N
	- as far as possible, reservoirs and similar vessels (e.g. in gas loaded accumulators) are automatically depressurized when isolating the machine from its power supply (see 5.5.4) and, if it is not possible, means are provided for their isolation, local depressurizing and pressure indication		N

BS EN 60204-1 & BS EN ISO 12100-1			
CL.	Requirement of the test	Result--Remark	Verdict
	- all elements which remain under pressure after isolation of the machine from its power supply be provided with clearly identified exhaust devices, and a warning label drawing attention to the necessity of depressurizing those elements before any setting or maintenance activity on the machine.		N
4.11	Applying inherently safe design measures to control system		P
4.11.1	general		P
4.11.2	Starting of an internal power source/switching on an external power supply	Battery was used as internal power source	P
4.11.3	Starting/stopping of a mechanism	See the user's manual	P
4.11.4	Restart after power interruption		N
	If it may generate a hazard, the spontaneous restart of a machine when it is re-energized after power interruption shall be prevented		N
4.11.5	Interruption of power supply		P
	Machinery shall be designed to prevent hazardous situations resulting from interruption or excessive fluctuation of the power supply. At least the following requirements shall be met:		--
	-the stopping function of the machinery shall remain	Can Stop by a brake lever and adjusting speed controller .	P
	-all devices whose permanent operation is required for safety shall operate in an effective way to maintain safety		P
	- parts of machinery or workpieces and/or loads held by machinery which are liable to move as a result of potential energy shall be retained for the time necessary to allow them to be safely lowered.		P
4.11.6	Use of automatic monitoring		N
4.11.7	Safety functions implemented by programmable electronic control systems	No such control device	N
4.11.7.1	general		N
4.11.7.2	Hardware aspects	See below	N
4.11.7.3	Software aspects		N
4.11.7.4	Application software		N
4.11.8	Principles relating to manual control		P
	a) Manual control devices shall be designed and located according to the relevant ergonomic principles given in 4.8.7.	speed controller was hold in hand in normal use	P
	b) A stop control device shall be placed near each start control device. Where the start/stop function is	A separate brake lever was provided.	P

BS EN 60204-1 & BS EN ISO 12100-1			
CL.	Requirement of the test	Result--Remark	Verdict
	performed by means of a hold-to-run control, a separate stop control device shall be provided when a risk can result from the hold-to-run control device failing to deliver a stop command when released.		
	c) Manual controls shall be located out of reach of the danger zones (see IEC 61310-3:1999, clause 4), except for certain controls where, of necessity, they are located within a danger zone, such as emergency stop or teach pendant.		P
	d) Whenever possible, control devices and control positions shall be located so that the operator is able to observe the working area or hazard zone.		P
	e) If it is possible to start the same hazardous element by means of several controls, the control circuit shall be so arranged that only one control is effective at a given time. This applies especially to machines which can be manually controlled by means among others of a portable control unit (teach pendant, for instance), with which the operator may enter danger zones.	Only one control used	N
	f) Control actuators shall be designed or guarded so that their effect, where a risk is involved, cannot occur without intentional operation (see ISO 9355-1 and ISO 447)		P
	g) For machine functions whose safe operation depends on permanent, direct control by the operator, measures shall be taken to ensure the presence of the operator at the control position, e. g. by the design and location of control devices.		P
	h) For cableless control an automatic stop shall be performed when correct control signals are not received, including loss of communication (see IEC 60204-1:1997, 9.2.7).	No such control	P
4.11.9	Control mode for setting, teaching, process changeover, fault-finding, cleaning or maintenance	See below	P
	safety of the operator shall be achieved using a specific control mode which simultaneously		--
	- disables all other control modes;		P
	-permits operation of the hazardous elements only by continuous actuation of an enabling device, a hold-to- run control device or a two-hand control device		P
	- permits operation of the hazardous elements only in reduced risk conditions		P
	-prevents any operation of hazardous functions by voluntary or involuntary action on the machine's sensors		P
4.11.10	Selection of control and operating modes	Only one operating mode	N

BS EN 60204-1 & BS EN ISO 12100-1			
CL.	Requirement of the test	Result--Remark	Verdict
4.11.11	Applying measures to achieve electromagnetic compatibility		N
4.11.12	Provision of diagnostic systems to aid fault-finding		N
4.12	Minimizing the probability of failure of safety functions		P
4.12.1	Use of reliable components		P
4.12.2	Use of "oriented failure mode" components		P
4.12.3	Duplication (or redundancy) of components or subsystems		P
4.13	Limiting exposure to hazards through reliability of equipment		N
4.14	Limiting exposure to hazards through mechanization or automation of loading (feeding)/unloading (removal) operations		N
4.15	Limiting exposure to hazards through location of the setting and maintenance points outside of danger zones		N
5	Safeguarding and complementary protective measures		P
5.1	general		P
	Guards and protective devices shall be used to protect persons whenever inherently safe design does not reasonably make it possible either to remove hazards or to sufficiently reduce risks. Complementary protective measures involving additional equipment. Certain safeguards may be used to avoid exposure to more than one hazard.		P
5.2	Selection and implementation of guards and protective devices		N
5.2.1	general		N
5.2.2	Where access to the hazard zone is not required during normal operation		N
	Where access to the hazard zone is not required during normal operation of the machinery, safeguards should be selected from the following:		--
	a) fixed guard (see also ISO 14120)		N
	b) interlocking guard with or without guard locking (see also ISO 14119, ISO 14120 and 5.3.2.3 of this standard)	See clause 5.3.2.3	N

BS EN 60204-1 & BS EN ISO 12100-1			
CL.	Requirement of the test	Result--Remark	Verdict
	c) self-closing guard (see ISO 14120:2002, 3.3.2);		N
	d) sensitive protective equipment		N
5.2.3	Where access to the hazard zone is required during normal operation		N
	Where access to the hazard zone is required during normal operation of the machinery, safeguards should be selected from the following:		N
	a) interlocking guard with or without guard locking (see also ISO 14119, ISO 14120 and 5.3.2.3 of this standard);		N
	b) sensitive protective equipment,		N
	c) adjustable guard;		N
	d) self-closing guard (see ISO 14120:2002, 3.3.2);		N
	e) two-hand control device (see ISO 13851);		N
	f) interlocking guard with a start function (control guard) (see 5.3.2.5 of this standard).		N
5.2.4	Where access to the hazard zone is required for machine setting, teaching, process changeover, fault finding, cleaning or maintenance		N
5.2.5	Selection and implementation of sensitive protective equipment ¹⁾		N
5.2.5.1	Selection		N
5.2.6	Protective measures for stability		P
	If stability cannot be achieved by inherently safe design measures such as weight distribution (see 4.6), it will be necessary to maintain it by protective measures such as the use of:		--
	anchorage bolts;		N
	-locking devices		N
	-movement limiters or mechanical stops;		N
	-acceleration or deceleration limiters;		N
	-load limiters;		N
	-alarms warning of the approach to stability or tipping limits.		N
5.2.7	Other protective devices		N
5.3	Requirements for the design of guards and protective devices		N
5.3.1	General requirements		N
5.3.2	Requirements of guards		N

BS EN 60204-1 & BS EN ISO 12100-1			
CL.	Requirement of the test	Result--Remark	Verdict
5.3.2.1	Functions of guards		N
5.3.2.2	Requirements for fixed guards		N
5.3.2.3	Requirements for movable guards		N
	a) Movable guards which provide protection against hazards generated by moving transmission parts shall	See below	N
	-as far as possible remain fixed to the machinery or other structure (generally by means of hinges or guides) when open;		N
	-be interlocking guards (with guard locking when necessary) (see ISO 14119)		N
	b) Movable guards against hazards generated by non-transmission moving parts shall be designed and associated with the machine control system so that:	See below	N

BS EN 60204-1 & BS EN ISO 12100-1			
CL.	Requirement of the test	Result--Remark	Verdict
	-moving parts cannot start up while they are within the operator's reach and the operator cannot reach moving parts once they have started up; this can be achieved by interlocking guards, with guard locking when necessary;		N
	-they can be adjusted only by an intentional action, such as the use of a tool or a key;		N
	-the absence or failure of one of their components prevents starting of the moving parts or stops them; this can be achieved by automatic monitoring (see 4.11.6).		N
5.3.2.4	Requirements for adjustable guards		N
	Adjustable guards may only be used where the hazard zone cannot for operational reasons be completely enclosed.		N
5.3.2.5	Requirements for interlocking guards with a start function (control guards)	No such control guards	N
5.3.2.6	Hazards from guards		N
5.3.3	Technical characteristics of protective devices		N
5.3.4	Provisions for alternative types of safeguards		N
	Provisions should be made to facilitate the fitting of alternative types of safeguards on machinery where it is known that this fitting will be necessary because the work to be done on it will vary.		N
5.4	Safeguarding for reducing emissions		N
5.4.1	general		N
5.4.2	Noise		N
5.4.3	Vibration		N
5.4.4	Hazardous substances		N
5.4.5	Radiation		N
5.5	Complementary protective measures		N
5.5.1	general		N
5.5.2	Components and elements to achieve the emergency stop function		N
5.5.3	Measures for the escape and rescue of trapped persons		N
5.5.4	Measures for isolation and energy dissipation		N

BS EN 60204-1 & BS EN ISO 12100-1			
CL.	Requirement of the test	Result--Remark	Verdict
	Especially with regard to their maintenance and repair, machines shall be equipped with the technical means to achieve the isolation from power supply(ies) and dissipation of stored energy as a result of following actions		N
	isolating (disconnecting, separating) the machine (or defined parts of the machine) from all power supplies;		N
	b) locking (or otherwise securing) all the isolating units in the isolating position;		N
	c) dissipating or, if this is not possible or practicable, restraining (containing) any stored energy which may give rise to a hazard;		N
	d) verifying, by means of a safe working procedure, that the actions taken according to a), b) and c) above have produced the desired effect.		N
5.5.5	Provisions for easy and safe handling of machines and their heavy component parts		N
5.5.6	Measures for safe access to machinery		N

6	Information for use		P
6.1	general requirements		P
6.1.1	Information shall be provided to the user about the intended use of the machine, taking into account, notably, all its operating modes.		P
6.1.2	Information for use shall cover, separately or in combination, transport, assembly and installation, commissioning, use (setting, teaching / programming or process changeover, operation, cleaning, fault finding and maintenance) of the machine, and, if necessary, de-commissioning, dismantling and disposal.		P

6.2	Location and nature of the information for use		P
	Depending on the risk, the time when the information is needed by the user and the machine design, it shall be decided whether the information – or parts thereof – are to be given:		P
	- in/on the machine itself (see 6.3 and 6.4);		P
	- in accompanying documents (in particular instruction handbook, see 6.5);	See the user's manual	P
	- on the packaging;		P

BS EN 60204-1 & BS EN ISO 12100-1			
CL.	Requirement of the test	Result--Remark	Verdict
	- by other means such as signals and warnings outside the machine.		P
6.3	Signals and warning devices		N
	Visual signals (e.g. flashing lights) and audible signals (e.g. sirens) may be used to warn of an impending hazardous event such as machine start-up or overspeed. Such signals may also be used to warn the operator before the triggering of automatic protective measures It is essential that these signals:		N
	- are emitted before the occurrence of the hazardous event;	No such device used.	N
	- are unambiguous;		N
	- can be clearly perceived and differentiated from all other signals used;		N
	- can be clearly recognized by the operator and other persons.		N
6.4	Markings, signs (pictograms), written warnings		P
	a) for its unambiguous identification, at least:		P
	-name and address of the manufacturer;	See the marking plate	P
	-designation of series or type;		P
	-serial number, if any;		P
	b) in order to indicate its compliance with mandatory requirements:		P
	-marking;		P
	-written indications		P
	c) for its safe use		P
	-maximum speed of rotating parts;	14Km/h	P
	-maximum diameter of tools;		P
	-mass (expressed in kilograms) of the machine itself and/or of removable parts;	7.5Kg	P
	-maximum working load	70Kg	P
	-necessity of wearing personal protective equipment;		N
	-guard adjustment data;		P
	-frequency of inspection.		P
6.5	Accompanying documents (in particular, instruction handbook)		P
6.5.1	Contents	See below	P
	a) information relating to transport, handling and storage of the machine		P

BS EN 60204-1 & BS EN ISO 12100-1			
CL.	Requirement of the test	Result--Remark	Verdict
	b) information relating to installation and commissioning of the machine	See the user's manual	P
	c) information relating to the machine itself	ditto	P
	d) information relating to the use of the machine		P
	e) information for maintenance		P
	f) information relating to de-commissioning, dismantling and disposal;		P
	g) information for emergency situations,		P
	h) maintenance instructions provided for skilled persons (second dash in e)) and maintenance instructions provided for unskilled persons (third dash in e)), that should appear clearly separated from each other.		P
6.5.2	Production of the instruction handbook		P
	a) Type and size of print shall ensure the best possible legibility. Safety warnings and/or cautions should be emphasized by the use of colours, symbols and/or large print.		P
	b) Information for use shall be given in the language(s) of the country in which the machine will be used for the first time and in the original version. If more than one language are to be used, each language should be readily distinguished from the other(s), and efforts should be made to keep the translated text and the relevant illustration together.		P
	c) Whenever helpful to the understanding, text should be supported by illustrations. Illustrations should be supplemented with written details enabling, for instance, manual controls (actuators) to be located and identified; they should not be separated from the accompanying text and should follow sequential operations.	See the user's manual	P
	d) Consideration should be given to presenting information in tabular form where this will aid understanding. Tables should be adjacent to the relevant text.	ditto	P
	e) The use of colours should be considered, particularly in relation to components requiring quick identification		P
	f) When information for use is lengthy, a table of contents and/or an index should be given.		P
	g) Safety-relevant instructions which involve immediate action should be provided in a form readily available		P
6.5.3	Advice for drafting and editing information for use		P

BS EN 60204-1 & BS EN ISO 12100-1			
CL.	Requirement of the test	Result--Remark	Verdict
	a) Relationship to model: the information shall clearly relate to the specific model of machine.		P

BS EN 60204-1 & BS EN ISO 12100-1			
CL.	Requirement of the test	Result--Remark	Verdict
	b) Communication principles: when information for use is being prepared, the communication process "see –think – use" should be followed in order to achieve the maximum effect and should follow sequential operations.		P
	c) Information for use shall be as simple and as brief as possible, and should be expressed in consistent terms and units with a clear explanation of unusual technical terms.		P
	d) When it is foreseen that a machine will be put to non-professional use, the instructions should be written in a form that is readily understood by the non-professional users. If personal protective equipment is required for the safe use of the machine, clear advice should be given		P
	Durability and availability of the documents: documents giving instructions for use should be produced in durable form (i.e. they should be able to survive frequent handling by the user). It may be useful to mark them "keep for future reference". Where information for use is kept in electronic form (e.g CD, DVD, tape) information on safety-related issues that need immediate action shall always be backed up with a hardcopy that is readily available.		P
ZA	Annex ZA, (informative) Relationship between this International Standard and the Essential Requirements of EU Directive 98/37/EC		P
ZB	Annex ZB, (informative) Relationship between this International Standard and the Essential Requirements of EU Directive 2006/42/EC		P

EUT Photos

Photo 1 Appearance of EUT



Photo 2 Appearance of EUT



Photo 3 Appearance of EUT



Photo 4 Appearance of EUT



Photo 5 Appearance of Adapter EUT



Photo 6 Appearance of Adapter EUT



END OF REPORT