TEST REPORT

EN ISO 12100:2010

Safety of machinery — General principles for design— Risk assessment and risk reduction

For

Shenzhen Ico-tec Co.,Ltd

Room 705, Building 2, China Phoenix Building, No. 2008 Shennan Avenue, Fuzhong Community, Lianhua Street, Futian District, Shenzhen

Model:
ulli-5,ulli-10,ulli-20,ulli-25,ulli-40,ulli-50,ulli-60,ulli-100,ulli-200,ulli-600

2025-04-07

This Report Concerns:	**Equipment Type:**
☒ Original Report	valve actuator

Test Engineer:	Engine Chen/
Report Number:	TH2503219-C01-R01
Test Date:	2025-03-31 to 2025-04-07
Reviewed By:	Prince Huang/
Approved By:	Prince Huang/
Prepared By:	**Shenzhen Tian Hai Test Technology Co.,Ltd.** 401-501, Building A5, The Silicon Valley Power Intelligent Terminal Industrial Park, No. 20, Dafu Industrial Zone, Dafu Community, Guanlan Street, Longhua District, Shenzhen City Tel: +86-755-86615100 Fax: +86-755-86615105

Note: This test report is limited to the above client company and the product model only.
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TEST REPORT

EN ISO 12100:2010

Safety of machinery–General principles for design–Risk assessment and risk reduction

Report		
Report reference No.	:	TH2503219-C01-R01
Tested by (+signature)	:	Engine Chen
Reviewed by (+signature)	:	Prince Huang
Approved by (+signature)	:	Prince Huang
Date of issue	:	2025-04-07
Testing laboratory		
Name	:	**Shenzhen Tian Hai Test Technology Co., Ltd.**
Address	:	401-501, Building A5, The Silicon Valley Power Intelligent Terminal Industrial Park, No. 20, Dafu Industrial Zone, Dafu Community, Guanlan Street, Longhua District, Shenzhen City
Test location	:	Same as above
Client		
Applicant Name	:	**Shenzhen Ico-tec Co.,Ltd**
Address	:	Room 705, Building 2, China Phoenix Building, No. 2008 Shennan Avenue, Fuzhong Community, Lianhua Street, Futian District, Shenzhen
Manufacturer	:	**AOITEC (GD) Co.,Ltd**
Address	:	Floor 11, Factory Building No. 18, Factory Building No. 5, Xinghe Zhongkai Artificial Intelligence Industrial Park, Chenjiang Street, Zhongkai High-tech Zone, Huizhou
Test specification		
Standards	:	EN ISO 12100:2010
Non-standard test method	:	N.A.
Test item		
Description	:	**valve actuator**
Trademark	:	ulli
Model and or type reference	:	ulli-5,ulli-10,ulli-20,ulli-25,ulli-40,ulli-50,ulli-60,ulli-100,ulli-200,ulli-600
Rating	:	Input:AC220V, 50/60Hz
Note	:	All test results are based on model ulli-600.

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Test case verdicts	
Test case does not apply to the test object	: N/A (Not apply)
Test item does meet the requirement	: P(Pass)
Test item does not meet the requirement	: F(Fail)

General remarks:

""See remark #)""refers to a remark appended to the report.
""See appended table)""refers to a table appended to the report.
Throughout this report a comma is used as the decimal separator.
The test results presented in this report relate only to the object tested.
This report shall not be reproduced except in full without the written approval of the testing laboratory.

Attachment include:
Appendix for photo

Remarks:
Copy of the marking plate

Product: valve actuator
Model: ulli-600
Rating: AC220V, 50/60Hz

CE

AOITEC (GD) Co.,Ltd
Floor 11, Factory Building No. 18, Factory Building No. 5, Xinghe Zhongkai Artificial Intelligence Industrial Park, Chenjiang Street, Zhongkai High-tech Zone, Huizhou

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EN ISO 12100			
Clause	**Requirement Test**	**Result**	**Verdict**
5	**Risk assessment**		P
	General		P
	Risk assessment comprises (see Figure 1)		P
	-risk analysis, comprising 1) determination of the limits of the machinery(see 5.3), 2) hazard identification (5.4 and Annex B), and 3) risk estimation (see 5.5), and	Complied	P
	-risk evaluation (see 5.6).		P
	Risk analysis provides information required for the risk evaluation, which in turn allows judgments to be made about whether or not risk reduction is required.	Complied	P
	These judgments shall be supported by a qualitative or, where appropriate, quantitative estimate of the risk associated with the hazards present on the machinery.	Complied	P
	The risk assessment shall be documented according to Clause 7.		P
5.2	Information for risk assessment		P
	The information for risk assessment should include the following.	See manual	P
	a) Related to machinery description: 1) user specifications; 2) anticipated machinery specifications, including i) a description of the various phases of the whole life cycle of the machinery, ii) design drawings or other means of establishing the nature of the machinery, and iii) required energy sources and how they are supplied; 3) documentation on previous designs of similar machinery, if relevant; 4) information for use of the machinery, as available.	Complied	P
	b) Related to regulations, standards and other applicable documents: 1) applicable regulations; 2) relevant standards; 3) relevant technical specifications; 4) relevant safety data sheets.	Complied	P
	c) Related to experience of use: 1) any accident, incident or malfunction history of the actual or similar machinery; 2) the history of damage to health resulting, for example, from emissions (noise, vibration, dust, fumes, etc.), chemicals used or materials processed by the machinery; 3) the experience of users of similar machines and, whenever practicable, an exchange of information with the potential users.	Complied	P
	d) Relevant ergonomic principles.		P
	The information shall be updated as the design develops or when modifications to the machine are required.		P
	Comparisons between similar hazardous situations associated with different types of machinery are often possible, provided that sufficient information about hazards and accident circumstances in those situations is available.	Complied	P
	For quantitative analysis, data from databases, handbooks, laboratories or manufacturers' specifications may be used, provided that there is confidence in the suitability of the data. Uncertainty associated with these data shall be indicated in the documentation (see Clause 7).	Complied	P
5.3	Determination of limits of machinery		P

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Clause	**Requirement Test**	**Result**	**Verdict**
5.3.1	General		P
	Risk assessment begins with the determination of the limits of the machinery, taking into account all the phases of the machinery life. This means that the characteristics and performances of the machine or a series of machines in an integrated process, and the related people, environment and products, should be identified in terms of the limits of machinery as given in 5.3.2 to 5.3.5.	Complied	P
5.3.2	Use limits		P
	Use limits include the intended use and the reasonably foreseeable misuse. Aspects to be taken into account include the following:	Complied	p
	a) the different machine operating modes and different intervention procedures for the users, including interventions required by malfunctions of the machine;	Complied	P
	b) the use of the machinery (for example, industrial, non-industrial and domestic) by persons identified by sex, age, dominant hand usage, or limiting physical abilities	Complied	P
	c) the anticipated levels of training, experience or ability of users including 1) operators, 2) maintenance personnel or technicians, 3) trainees and apprentices, and 4) the general public;	Complied	P
	d) exposure of other persons to the hazards associated with the machinery where it can be reasonably foreseen: 1) persons likely to have a good awareness of the specific hazards, such as operators of adjacent machinery; 2) persons with little awareness of the specific hazards but likely to have a good awareness of site safety procedures, authorized routes, etc., such as administration staff; 3) persons likely to have very little awareness of the machine hazards or the site safety procedures, such as visitors or members of the general public, including children	Complied	P
	If specific information is not available in relation to b), above, the manufacturer should take into account general information on the intended user population (for example, appropriate anthropometric data).		P
5.3.3	Space limits		P
	Aspects of space limits to be taken into account include	Complied	P
	a) the range of movement	Complied	P
	b) space requirements for persons interacting with the machine, such as during operation and maintenance,	Complied	P
	c) human interaction such as the operator–machine interface,	Complied	P
	d) the machine–power supply interface.	Complied	P
5.3.4	Time limits		P
	Aspects of time limits to be taken into account include	Complied	P
	a) the life limit of the machinery and/or of some of its components (tooling, parts that can wear, electromechanical components, etc.), taking into account its intended use and reasonably foreseeable misuse, and	Complied	P
	b) recommended service intervals.		P
5.3.5	Other limits		P
	a) properties of the material(s) to be processed		P
	b) housekeeping — the level of cleanliness required		N/A

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Clause	**Requirement Test**	**Result**	**Verdict**
	c) environmental — the recommended minimum and maximum temperatures, whether the machine can be operated indoors or outdoors, in dry or wet weather, in direct sunlight, tolerance to dust and wet, etc.		P
5.4	Hazard identification		P
	a) Human interaction during the whole life cycle of the machine	Complied	P
	b) Possible states of the machine	Complied	P
	c) Unintended behaviour of the operator or reasonably foreseeable misuse of the machine	Complied	P
5.5	Risk estimation		P
5.5.1	General		P
	After hazard identification, risk estimation shall be carried out for each hazardous situation by determining the elements of risk given in 5.5.2. When determining these elements, it is necessary to take into account the aspects given in 5.5.3.	Complied	P
5.5.2	Elements of risk		P
5.5.2.1	General		P
	The risk associated with a particular hazardous situation depends on the following elements:		P
	a) the severity of harm;	Complied	P
	b) the probability of occurrence of that harm, which is a function of 1) the exposure of person(s) to the hazard, 2) the occurrence of a hazardous event, and 3) the technical and human possibilities to avoid or limit the harm.	Complied	P
5.5.2.2	Severity of harm		P
	a) the severity of injuries or damage to health, for example,	If you do not comply with operational rules, it will cause serious harm, even death.	P
	-slight,		P
	-serious,		P
	-death.		N/A
	b) the extent of harm, for example, to	Complied	P
	-one person,		P
	-several persons.		N/A
5.5.2.3	Probability of occurrence of harm		P
5.5.2.3.1	Exposure of persons to the hazard		P
	The exposure of a person to the hazard influences the probability of the occurrence of harm. Factors to be taken into account when estimating the exposure are, among others,	Complied	P
	a)the need for access to the hazard zone		P
	b) the nature of access		P
	c) the time spent in the hazard zone,		P
	d) the number of persons requiring access		P
	e) the frequency of access.		P
5.5.2.3.2	Occurrence of a hazardous event		P
	The occurrence of a hazardous event influences the probability of occurrence of harm. Factors to be taken into account when estimating the occurrence of a hazardous event are, among others,		P
	a) reliability and other statistical data,	Complied	P
	b) accident history,		N/A
	c) history of damage to health,		N/A

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Clause	**Requirement Test**	**Result**	**Verdict**
	d) comparison of risks (see 5.6.3).	Complied	P
5.5.2.3.3	Possibility of avoiding or limiting harm		P
	The possibility of avoiding or limiting harm influences the probability of occurrence of harm. Factors to be taken into account when estimating the possibility of avoiding or limiting harm are, among others, the following:	Complied	P
	a) different persons who can be exposed to the hazard(s)		P
	-skilled,	Only for skilled person	P
	-unskilled;		N/A
	b) how quickly the hazardous situation could lead to harm, for example,		P
	-suddenly,	The harm may be suddenly	P
	-quickly,	The harm may be quickly	P
	-slowly;		N/A
	c) any awareness of risk, for example,		P
	-by general information, in particular, information for use,	Information for use is applied on the machinery and manual.	P
	-by direct observation,	Direct observation used	P
	-through warning signs and indicating devices, in particular, on the machinery;	Warning signs are applied on the machinery.	P
	d) the human ability to avoid or limit harm (for example, reflex, agility, possibility of escape);		P
	e) practical experience and knowledge, for example,	Complied	P
	-of the machinery,		P
	-of similar machinery,		N/A
	-no experience		N/A
5.5.3	Aspects to be considered during risk estimation		P
5.5.3.1	Persons exposed		P
	Risk estimation shall take into account all persons (operators and others) for whom exposure to the hazard is reasonably foreseeable.	Complied	P
5.5.3.2	Type, frequency and duration of exposure		P
	The risk estimation shall also take into account tasks, for which it is necessary to suspend protective measures.	Complied	P
5.5.3.3	Relationship between exposure and effects		P
	The relationship between an exposure to a hazard and its effects shall be taken into account for each hazardous situation considered.	Complied	P
5.5.3.4	Human factors		P
	Human factors can affect risk and shall be taken into account in the risk estimation,		P
5.5.3.5	Suitability of protective measures	Recommended protective measures shall be supplied in manual	P
	Risk estimation shall take into account the suitability of protective measures and shall		P
	a) identify the circumstances which can result in harm,		P
	b) whenever appropriate, be carried out using quantitative methods to compare alternative protective measures (see ISO/TR 14121-2),		P
	c) provide information that can assist with the selection of appropriate protective measures.		P
5.5.3.6	Possibility of defeating or circumventing protective measures		P

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Clause	**Requirement Test**	**Result**	**Verdict**
	Risk estimation shall take account of the possibility of defeating or circumventing protective measures. It shall also take account of the incentive to defeat or circumvent protective measures	Complied	P
5.5.3.7	Ability to maintain protective measures		P
	Risk estimation shall consider whether the protective measures can be maintained in the condition necessary to provide the required level of protection.	Complied	P
5.5.3.8	Information for use		P
	Risk estimation shall take into account the information for use, as available. See also 6.4.	See user manual or instructions	P
5.6	Risk evaluation		P
5.6.1	General		P
	Achieving the objectives of risk reduction and a favourable outcome of risk comparison applied when practicable gives confidence that risk has been adequately reduced.	Complied	P
5.6.2	Adequate risk reduction		P
	Application of the three-step method described in 6.1 is essential in achieving adequate risk reduction.		P
	Following the application of the three-step method, adequate risk reduction is achieved when		P
	-all operating conditions and al intervention procedures have been considered,	Complied	P
	-the hazards have been eliminated or risks reduced to the lowest practicable level,	Complied	P
	-any new hazards introduced by the protective measures have been properly addressed,	Complied	P
	-users are sufficiently informed and warned about the residual risks (see 6.1, step 3),	Complied	P
	protective measures are compatible with one another,	Complied	P
	sufficient consideration has been given to the consequences that can arise from the use in a nonprofessional/non-industrial context of a machine designed for professional/industrial use, and	Complied	P
	the protective measures do not adversely affect the operator's working conditions or the usability of the machine.	Complied	P
5.6.3	Comparison of risks		P
	As part of the process of risk evaluation, the risks associated with the machinery or parts of machinery can be compared with those of similar machinery or parts of machinery, provided the following criteria apply:		P
	-the similar machinery is in accordance with the relevant type-C standard(s);	Complied	P
	-the intended use, reasonably foreseeable misuse and the way both machines are designed and constructed are comparable;	Complied	P
	the hazards and the elements of risk are comparable;	Complied	P
	-the technical specifications are comparable;	Complied	P
	-the conditions for use are comparable.	Complied	P
	The use of this comparison method does not eliminate the need to follow the risk assessment process as described in this International Standard for the specific conditions of use. For example, when a band saw used for cutting meat is compared with a band saw used for cutting wood, the risks associated with the different material shall be assessed.	Complied	P
6	**Risk reduction**		P
6.1	General		P
	All protective measures intended for reaching this objective shall referred to as the three-step method (see also Figures 1 and 2).		P

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Clause	**Requirement Test**	**Result**	**Verdict**
6.2	Inherently safe design measures		P
6.2.1	General		P
	Inherently safe design measures are achieved by avoiding hazards or reducing risks by a suitable choice of design features for the machine itself and/or interaction between the exposed persons and the machine.	Appropriate machine design has been performed by the manufacturer	P
6.2.2	Consideration of geometrical factors and physical aspects		P
6.2.2.1	Geometrical factors		P
	a) The form of machinery is designed to maximize direct visibility of the working areas and hazard zones from the control position — reducing blind spots,	Sufficient visibility areas	P
	b) The form and the relative location of the mechanical components parts	Appropriate machine design has been performed by the manufacturer	P
	c) Avoiding sharp edges and corners, protruding parts	No sharp edge and angle	P
	d) The form of the machine is designed so as to achieve a suitable working position and provide accessible manual controls (actuators).	Accessible manual controls (actuators) provided	P
6.2.2.2	Physical aspects		P
	a) limiting the actuating force to a sufficiently low value so that the actuated part does not generate a mechanical hazard	The actuating force has been limited to be a sufficiently low value so that the actuated part does not generate a mechanical hazard	P
	b) limiting the mass and/or velocity of the movable elements, and hence their kinetic energy		P
	c) limiting the emissions by acting on the characteristics of the source using measures for reducing		P
6.2.3	Taking into account general technical knowledge of machine design		P
	This general technical knowledge can be derived from technical specifications for design (standards, design codes, calculation rules, etc.), which should be used to cover		P
	a) mechanical stresses such as		P
	-stress limitation by implementation of correct calculation, construction and fastening methods as regards, for example, bolted assemblies and welded assemblies,	Complied	P
	-stress limitation by overload prevention (bursting disk, pressure-limiting valves, breakage points, torque-limiting devices, etc.),		N/A
	-avoiding fatigue in elements under variable stresses (notably cyclic stresses), and		N/A
	-static and dynamic balancing of rotating elements,		N/A
	b) materials and their properties such as		P
	-resistance to corrosion, ageing, abrasion and wear,	Resistance to corrosion	P
	-hardness, ductility, brittleness,		P
	-homogeneity,		P
	-toxicity, and		N/A
	-flammability, and		N/A
	c) emission values for	Complied	P
	-noise,		P
	-vibration,		P
	-hazardous substances, and		P
	-radiation.		N/A

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Clause	**Requirement Test**	**Result**	**Verdict**
	When the reliability of particular components or assemblies is critical for safety (for example, ropes, chains, lifting accessories for lifting loads or persons), stress limits shall be multiplied by appropriate working coefficients.		N/A
6.2.4	Choice of appropriate technology		P
	One or more hazards can be eliminated or risks reduced by the choice of the technology to be used in certain applications	Complied	P
6.2.5	Applying principle of positive mechanical action		P
6.2.6	Provisions for stability		P
	Machines shall be designed so that they have sufficient stability to allow them to be used safely in their specified conditions of use.	Complied	P
6.2.7	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;	Complied	P
	– ease of handling, taking into account human		P
	– limitation of the number of special tools and equipment.		P
6.2.8	Observing ergonomic principles		P
	Ergonomic principles shall be taken into account in designing machinery so as to reduce the mental or physical stress of, and strain on, the operator.	Complied	P
6.2.9	Electrical hazards		P
	For the design of the electrical equipment of machines, IEC 60204-1 gives general provisions about disconnection and switching of electrical circuits and for protection against electric shock.	Complied	P
6.2.10	Pneumatic and hydraulic hazards		P
6.2.11	Applying inherently safe design measures to control systems		P
6.2.11.1	General		P
	The design measures of the control system shall be chosen so that their safety-related performance provides a sufficient amount of risk reduction (see ISO 13849-1 or IEC 62061).	Complied	P
6.2.11.2	Starting of an internal power source/switching on an external power supply		P
	The starting of an internal power source or switching-on of an external power supply shall not result in a hazardous situation.	Complied	P
6.2.11.3	Starting/stopping of a mechanism		P
6.2.11.4	Restart after power interruption		P
6.2.11.5	Interruption of power supply		P
	Machinery shall be designed to prevent hazardous situations resulting from interruption or excessive fluctuation of the power supply.	Complied	P
6.2.11.6	Use of automatic monitoring		P
	Automatic monitoring is intended to ensure that a safety function or functions implemented by a protective measure do not fail to be performed if the ability of a component or an element to perform its function is diminished, or if the process conditions are changed such that hazards are generated	Complied	P
6.2.11.7	Safety functions implemented by programmable electronic control systems		P
6.2.11.7.1	General		P
	A control system that includes programmable electronic equipment (for example, programmable controllers) can, where appropriate, be used to implement safety functions at machinery.	Complied	P
6.2.11.7.2	Hardware aspects		P

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Clause	**Requirement Test**	**Result**	**Verdict**
	– architectural constraints	Complied	P
	– selection, and/or design, of equipment and devices with an appropriate probability of dangerous random hardware failure	Complied	P
	– the incorporation of measures and techniques within the hardware so as to avoid systematic failures and control systematic faults	Complied	P
6.2.11.7.3	Software aspects		P
6.2.11.8	Principles relating to manual control		P
6.2.11.9	Control mode for setting, teaching, process changeover, fault-finding, cleaning or maintenance	Complied	P
6.2.11.10	Selection of control and operating modes		P
6.2.11.11	Applying measures to achieve electromagnetic compatibility (EMC)	Complied	P
6.2.11.12	Provision of diagnostic systems to aid fault-finding	Complied	P
6.2.12	Minimizing probability of failure of safety functions		P
6.2.12.1	General		P
	Safety of machinery is not only dependent on the reliability of the control systems but also on the reliability of all parts of the machine.	Complied	P
6.2.12.2	Use of reliable components		P
6.2.12.3	Use of “oriented failure mode” components	Complied	P
6.2.12.4	Duplication (or redundancy) of components or subsystems	Complied	P
6.2.13	Limiting exposure to hazards through reliability of equipment		P
6.2.14	Limiting exposure to hazards through mechanization or automation of loading (feeding)/unloading (removal) operations		P
6.2.15	Limiting exposure to hazards through location of setting and maintenance points outside danger zones		P
6.3	Safeguarding and complementary protective measures		P
6.3.1	General		P
	Guards and protective devices shall be used to protect persons whenever an inherently safe design measure does not reasonably make it possible either to remove hazards or to sufficiently reduce risks.	Complied	P
6.3.2	Selection and implementation of guards and protective devices		P
6.3.2.1	General		P
	This subclause gives guidelines for the selection and the implementation of guards and protective devices the primary purpose of which is to protect persons against hazards generated by moving parts, according to the nature of those parts (see Figure 4) and to the need for access to the danger zone(s).	Complied	P
6.3.2.2	Where access to the hazard zone is not required during normal operation	Complied	P
6.3.2.3	Where access to the hazard zone is required during normal operation	Complied	P
6.3.2.4	Where access to the hazard zone is required for machine setting, teaching, process changeover, fault-finding, cleaning or maintenance	Complied	P
6.3.2.5	Selection and implementation of sensitive protective equipment1)		P
6.3.2.5.1	Selection	Complied	P
6.3.2.5.2	Implementation	Complied	P
6.3.2.5.3	Additional requirements for sensitive protective equipment when used for cycle initiation	Complied	P
6.3.2.6	Protective measures for stability		P
6.3.2.7	Other protective devices		P
6.3.3	Requirements for design of guards and protective devices		P
6.3.3.1	General requirements	Complied	P

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Clause	**Requirement Test**	**Result**	**Verdict**
6.3.3.2	Requirements for guards		P
6.3.3.2.1	Functions of guards	Complied	P
6.3.3.2.2	Requirements for fixed guards		P
	permanently	Complied	P
	by means of fasteners (screws, nuts) making removal/opening impossible without using tools; they should not remain closed without their fasteners (see ISO 14120).	Complied	P
6.3.3.2.3	Requirements for movable guards		P
	a) as far as possible when open remain fixed to the machinery or other structure (generally by means of hinges or guides)	Complied	P
	b) be interlocking (with guard locking when necessary) (see ISO 14119).	Complied	P
6.3.3.2.4	Requirements for adjustable guards	Complied	P
6.3.3.2.5	Requirements for interlocking guards with a start function (control guards)	Complied	P
6.3.3.2.6	Hazards from guards		P
	– the guard construction (sharp edges or corners, material, noise emission, etc.),	Complied	P
	– the movements of the guards (shearing or crushing zones generated by power-operated guards and by heavy guards which are liable to fall).	Complied	P
6.3.3.3	Technical characteristics of protective devices		P
6.3.3.4	Provisions for alternative types of safeguards		P
6.3.4	Safeguarding to reduce emissions		P
6.3.4.1	General		P
	If the measures for the reduction of emissions at source specified in 6.2.2.2 are not adequate, the machine shall be provided with additional protective measures (see 6.3.4.2 to 6.3.4.5).	Complied	P
6.3.4.2	Noise	Complied	P
6.3.4.3	Vibration	Complied	P
6.3.4.4	Hazardous substances	Complied	P
6.3.4.5	Radiation	Complied	P
6.3.5	Complementary protective measures		P
6.3.5.1	General	Complied	P
6.3.5.2	Components and elements to achieve emergency stop function	Complied	P
6.3.5.3	Measures for the escape and rescue of trapped persons	Complied	P
6.3.5.4	Measures for isolation and energy dissipation	Complied	P
6.3.5.5	Provisions for easy and safe handling of machines and their heavy component parts	Complied	P
6.3.5.6	Measures for safe access to machinery	Complied	P
6.4	Information for use		P
6.4.1	General requirements	Complied	P
6.4.2	Location and nature of information for use	Complied	P
6.4.3	Signals and warning devices	Complied	P
6.4.4	Markings, signs (pictograms) and written warnings		P
	a) for its unambiguous identification	Complied	P
	b) in order to indicate its compliance with mandatory requirements, comprising	Complied	P
	c) for its safe use	Complied	P
6.4.5	Accompanying documents (in particular — instruction handbook)		P
6.4.5.2	Production of instruction handbook		P
	The following applies to the production and presentation of the instruction handbook.		P

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EN ISO 12100			
Clause	**Requirement Test**	**Result**	**Verdict**
	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.	Complied	P
	b) Information for use shall be given in the official language(s) of the country in which the machine is to be used.	Complied	P
	c) Whenever possible, text should be supported by illustrations.	Complied	P
	d) Consideration should be given to presenting information in tabular form where this will aid understanding.	Complied	P
	e) The use of colours should be considered	Complied	P
	f) When information for use is lengthy, a table of contents and/or an index should be given.	Complied	P
	g) Safety-relevant instructions which involve immediate action should be provided in a form readily available to the operator	Complied	P
6.4.5.3	Drafting and editing information for use		P
	The following applies to the drafting and editing of information for use.		P
	a) Relationship to model	Complied	P
	b) Communication principles	Complied	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.	Complied	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.	Complied	P
	e) Durability and availability of the documents	Complied	P
7	**Documentation of risk assessment and risk reduction**		P
	The documentation shall demonstrate the procedure that has been followed and the results that have been achieved. This includes, when relevant, documentation of		P
	a) the machinery for which the risk assessment has been made (for example, specifications, limits, intended use);	Complied	P
	b) any relevant assumptions that have been made (loads, strengths, safety factors, etc.);	Complied	P
	c) the hazards and hazardous situations identified and the hazardous events considered in the risk assessment;	Complied	P
	d)the information on which risk assessment was based (see 5.2): 1) the data used and the sources (accident histories, experience gained from risk reduction applied to similar machinery, etc.); 2) the uncertainty associated with the data used and its impact on the risk assessment;	Complied	P
	e) the risk reduction objectives to be achieved by protective measures;	Complied	P
	f) the protective measures implemented to eliminate identified hazards or to reduce risk;	Complied	P
	g) residual risks associated with the machinery;	Complied	P
	h) the result of the risk assessment;	Complied	P
	i) any forms completed during the risk assessment.	Complied	P
	Standards or other specifications used to select protective measures referred to in f) above should be referenced.	Complied	P

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TABLE: 18.3	Insulation resistance and dielectric strength		P
Test points		Measured value	Limit
From	To		
Line & neutral	Metal Enclosure	>100MΩ	1MΩ

TABLE: 18.4	Electric strength measurements	P
Test voltage applied between:	Test voltage (V rms)	Breakdown
Line & neutral to Metal Enclosure	1000	No

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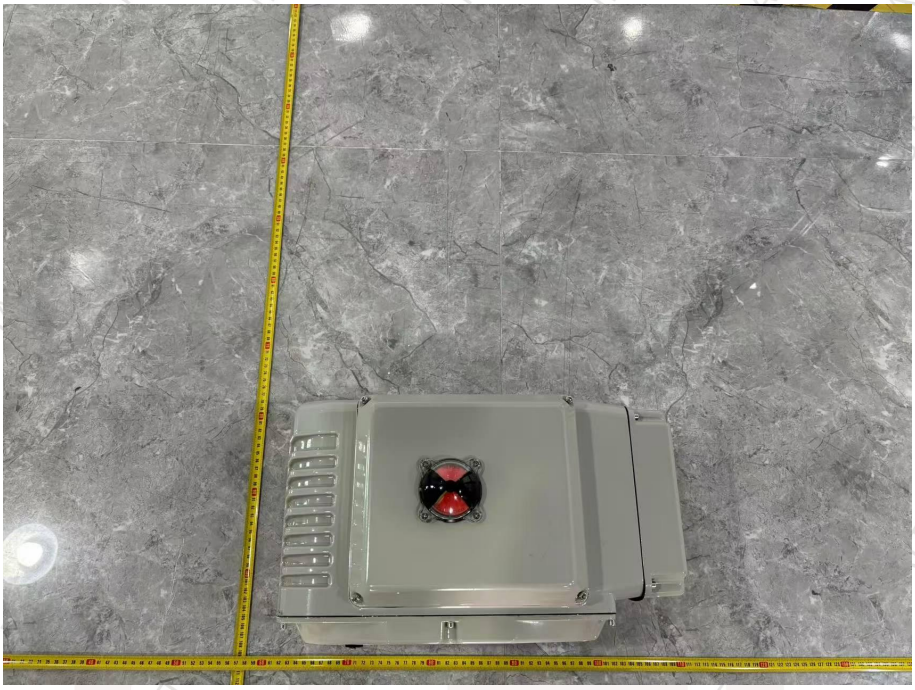
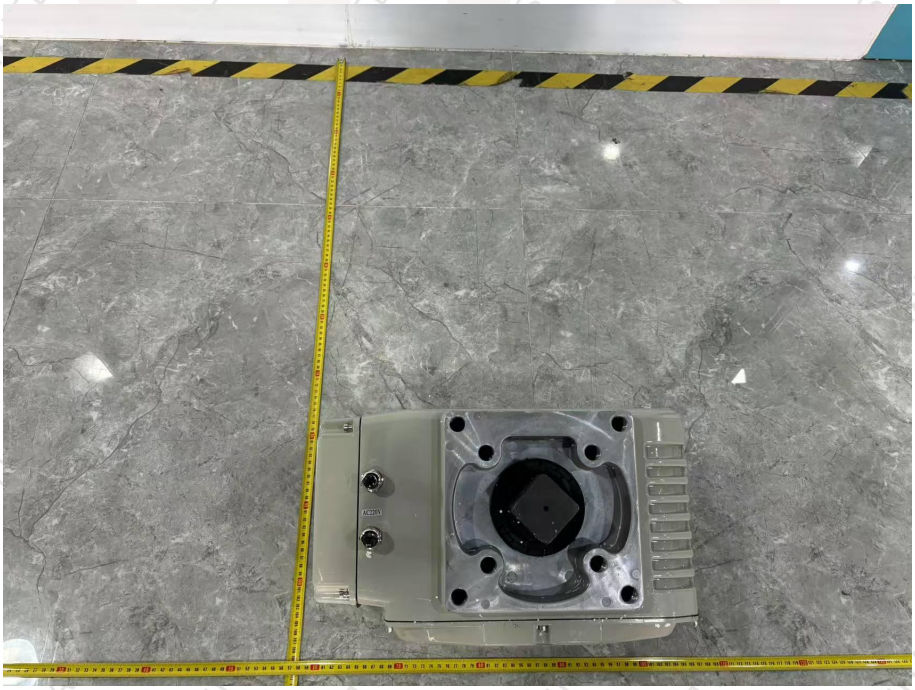
Appendix for photo

Model:ulli-600





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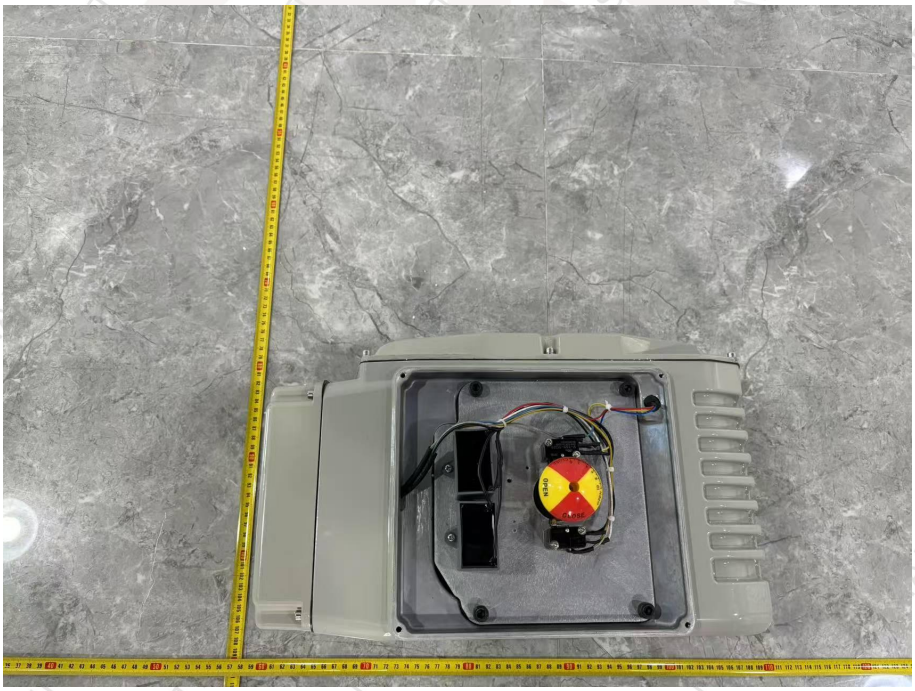

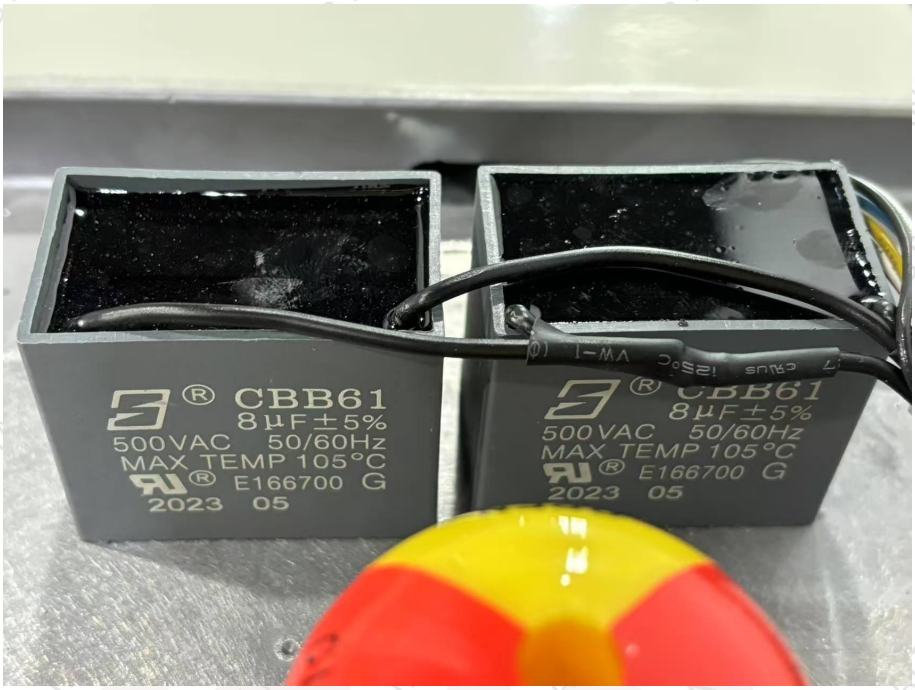

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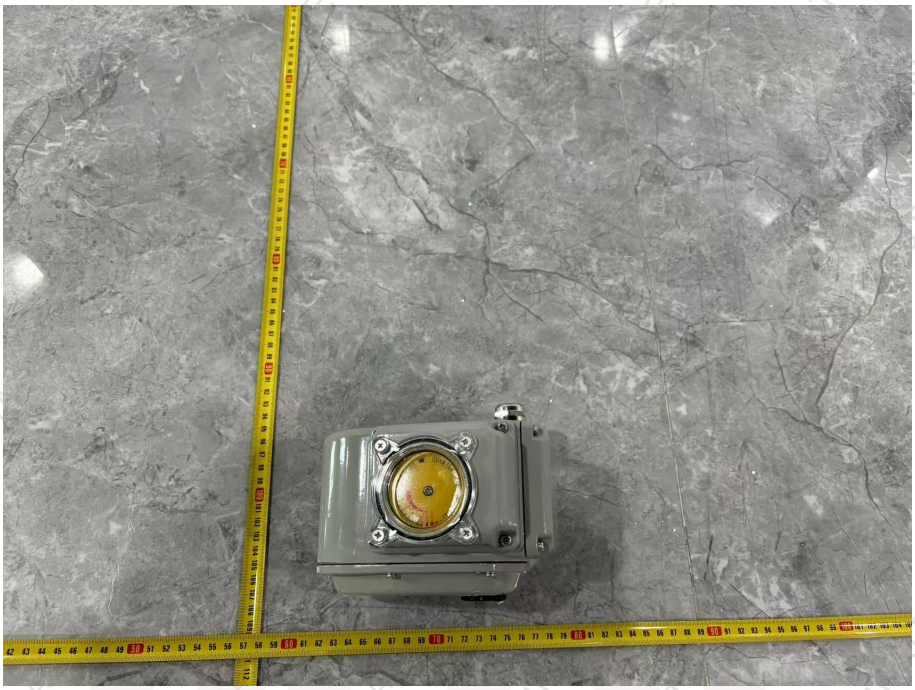
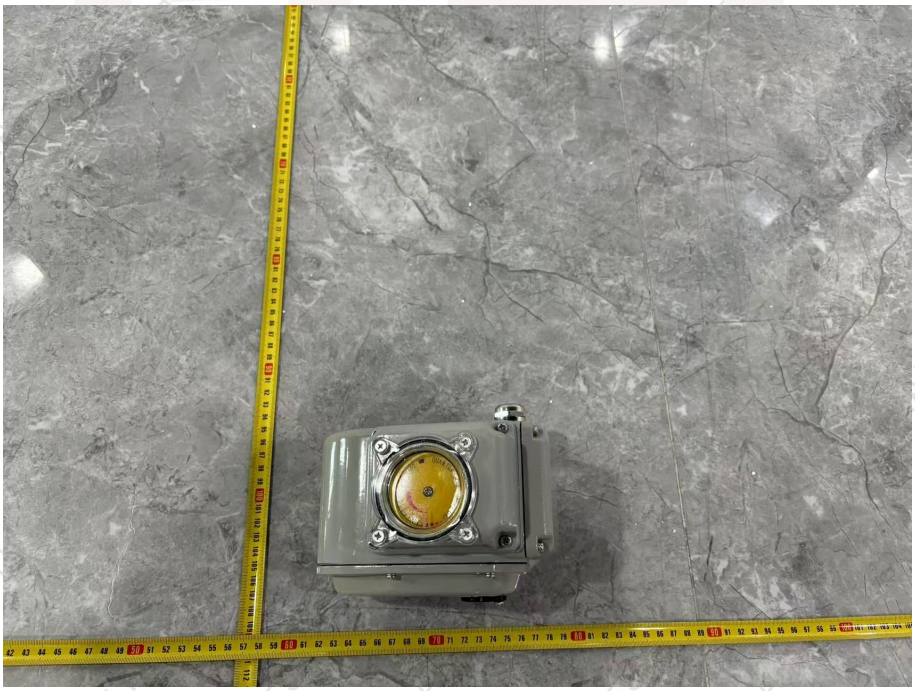
Model:ulli-5





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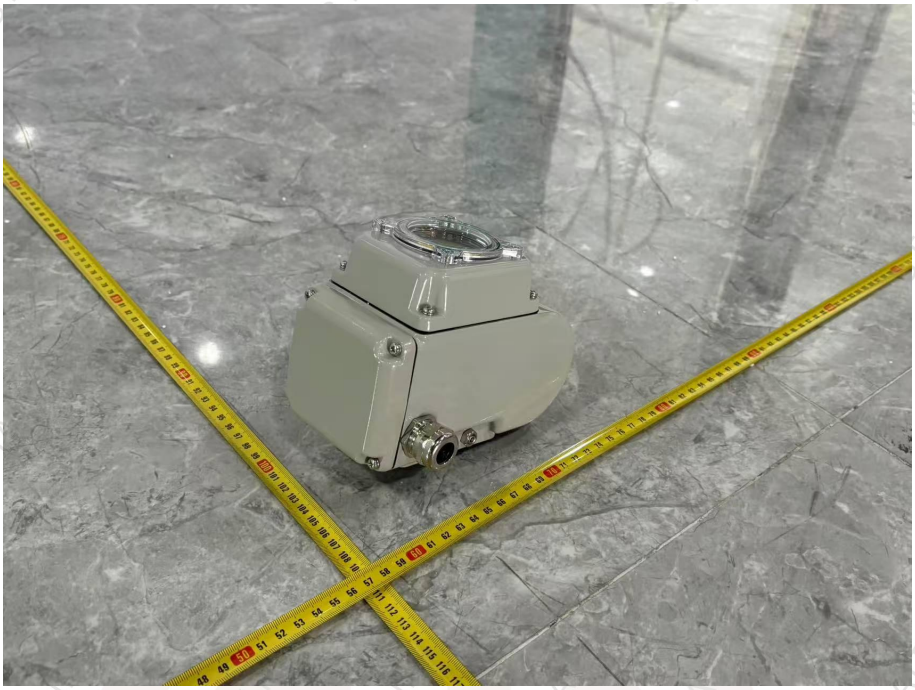

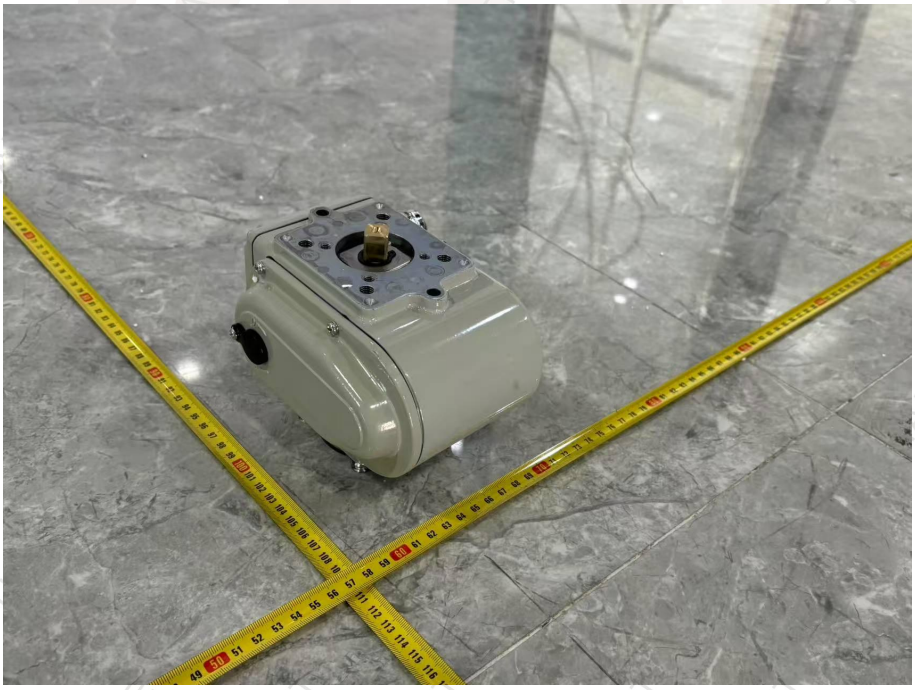

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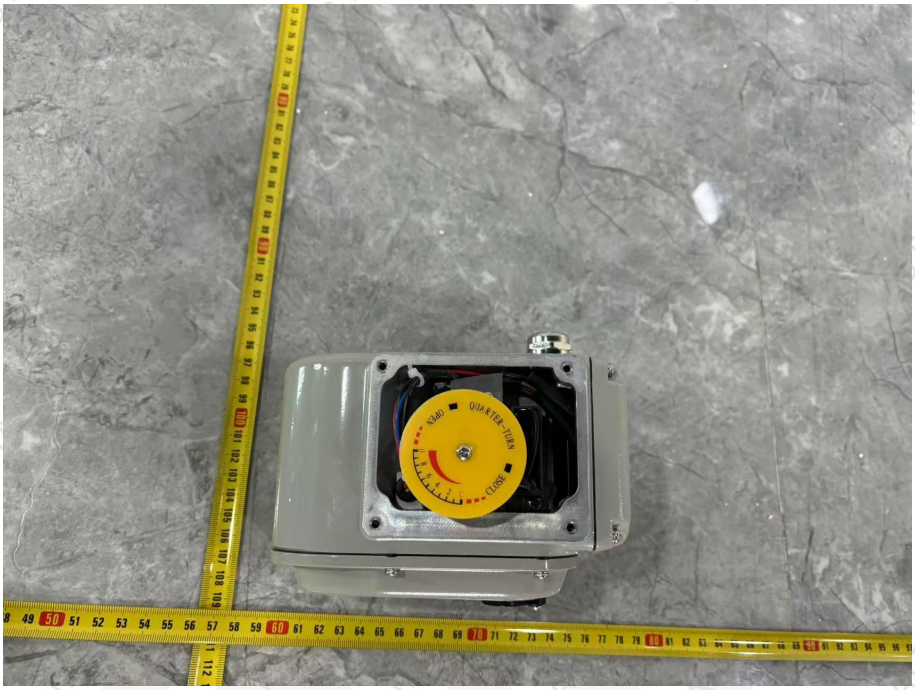

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