


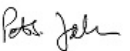
TEST REPORT EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances		
Report Reference No.:	F2P31544B-02RS	
Date of Issue:	March 28, 2024	
Total Number of Pages:	25	
Applicant:	Kinematics LLC 21410 N. 15 th Ln, Suite 104 Phoenix, AZ 85027	
Manufacturer:	Same as above	
Test Item Description:	Rotary gear drive used to transmit torque around a defined axis	
Model/Type Reference:	Slewing Drives - HE and ST Series	
Testing Laboratory:	F2 Labs 26501 Ridge Road Damascus, MD 20872	
Standard:	EN IEC 63000:2018	
Test Report Form No.:	EN63000_2018	
Test Report Form(s) Originator:	F2 Labs	
Master TRF:	November 11, 2020	
Evaluated by:	Elisabeth Green, Project Manager	
Approved by:	Peter Jolles, EU Consulting Services Manager	

Table of Contents

Section 1 - EN IEC 63000:2018 Report	3
Section 2 – Verdict	5
Section 3 - Description of Technical Intervention.....	6
Section 4 - Detail of the Service	6
Section 5 - RoHS Directive 2011/65/EU + (EU)2015/863 – Detail of Applicability & Compliance Path.....	6
Summary of RoHS Applicability.....	11
Path to Compliance	11
Section 6 - Summary of RoHS Compliance Process for this Product	12
Section 7 - EN IEC 63000:2018, Introduction	13
Section 8 - EN IEC 63000:2018 (Sec 4) Technical Documentation	13
Section 9 - EN IEC 63000:2018 (Sec 4.3.4) Evaluation of Information	14
Section 10 - List of Parts/Sub-assemblies	15
Annex I - EN IEC 63000:2018, Annex ZZ	18
Annex II - Regulation (EC) No. 765/2008, Annex II.....	19
Annex III - 2011/65/EU, Annex VI, EU Declaration of Conformity	20
Annex IV- Regulation (EC) No. 768/2008, Annex II, Conformity Assessment Procedures, Module A	21
Annex V - Updating the EU declaration of conformity and the Technical File.....	22
Annex VI - Large scale stationary tools and large scale fixed installations	23

Section 1 - EN IEC 63000:2018 Report

Test Item Particulars	
Possible test case verdicts:	
Test object does meet the requirement:	P (Pass)
Test object does not meet the requirement:	F (Fail)
Test case was not evaluated or is informative:	N/A
General remarks:	
<p>The test results presented in this report relate only to the object tested.</p> <p>This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.</p> <p>"(see Enclosure #)" refers to additional information appended to the report.</p> <p>"(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	

4	Technical Documentation	Verdict
4.1	Overview	
	The manufacturer shall compile technical documentation to demonstrate that electrical and electronic products comply with substance restrictions (see 4.2 and 4.3).	P
4.2	Content of the technical documentation	
	The technical documentation shall include at least the following elements:	
	a general description of the product	P
	documents for materials, parts, and/or sub-assemblies (see 4.3);	P
	information showing the relationship between the technical documents identified in 4.3 and the corresponding materials, parts and/or sub-assemblies in the product;	P
	list of standards and/or other technical specifications that have been used to establish the technical documents identified in 4.3, or to which such documents refer.	P
4.3	Information on materials, parts, and/or sub-assemblies	
4.3.1	Tasks to be undertaken by the manufacturer	
	determine the information needed (see 4.3.2);	P
	collect the information (see 4.3.3);	P
	evaluate the information with regard to its quality and trustworthiness and decide whether to include it in the technical documentation (see 4.3.4);	P
	ensure that the technical documentation remains valid (see 4.3.5).	N/A - Not evaluated
4.3.2	Determine the information needed	

4	Technical Documentation	Verdict
	<p>The types of technical documents (see 4.3.3) that are required for materials, parts and/or sub-assemblies shall be based on the manufacturer's assessment of:</p> <ol style="list-style-type: none"> a) the probability of restricted substances being present, in materials, parts or sub-assemblies, and b) the trustworthiness of the supplier. <p>Materials that are added during the production process (such as solder, paint, adhesives) shall also be considered as part of the assessment.</p> <p>When undertaking the assessment of the probability of restricted substances being present (see item a), the manufacturer may apply technical judgement, as some substances are unlikely to be contained in certain materials (e.g. organic substances in metals). Such technical judgement could be based on technical information available via the electrical/electronic industry, or a literature investigation of the materials/parts used in electrical/electronic products. Additional information that may be used when undertaking the assessment includes material types typically used in the part or sub-assembly, and the historical likelihood of restricted substances being present in each material type.</p> <p>When undertaking the trustworthiness of the supplier (see item b) the manufacturer may apply:</p> <ul style="list-style-type: none"> • Historical evidence with the supplier organization; • Results of previous supplier inspections or audits 	N/A - Informative
4.3.3	Collecting information	
	<p>As a result of the manufacturer's assessment, the following documents on materials, parts, and/or sub-assemblies shall be collected:</p> <ol style="list-style-type: none"> a) Supplier declarations and/or contractual agreements, such as: <ul style="list-style-type: none"> - Supplier declarations, confirming that the restricted substance content of the material, part, or sub-assembly is within the permitted levels and identifying any exemptions that have been applied. - Signed contracts confirming that the manufacturer's specification for the maximum content of restricted substances in a material, part, or sub-assembly is fulfilled. - Such declarations or agreements shall cover a specific material, part and/or sub-assembly, or a specific range of materials, parts and/or sub-assemblies. <p>and/or</p> <ol style="list-style-type: none"> b) Material Declarations: <ul style="list-style-type: none"> - Material declarations providing information on specific substance content and identifying any exemptions that have been applied. - The material declaration content should meet the requirements specified in IEC 62474:2012, 4.2.3 for the applicable substances. <p>and/or</p> <ol style="list-style-type: none"> c) Analytical test results: 	N/A - Informative

4	Technical Documentation	Verdict
	- Analytical test results using the methods described or referenced in the IEC 62321 series.	
4.3.4	Evaluation of information	
	The manufacturer shall establish procedures that shall be used to evaluate the documents described in 4.3.3 in order to determine their quality and trustworthiness.	P
	The manufacturer shall evaluate, in accordance with these procedures, the source and content of each document received in order to determine whether or not the material, part, or sub-assembly meets the specified substance restrictions.	P
	<p>This evaluation will enable the manufacturer to decide whether the documents provide sufficient evidence of compliance to justify their inclusion in the technical documentation.</p> <p>If a particular document is:</p> <ul style="list-style-type: none"> • considered to be of sufficient quality and trustworthiness, then it shall be included in the technical documentation; • not considered to be of sufficient quality or trustworthiness, then the manufacturer shall determine what further actions are necessary - possible actions include requesting additional information from the supplier or undertaking his own substance analysis. 	N/A - Informative
4.3.5	Review of the technical documentation	
	The manufacturer shall perform a periodic review of the documents contained in the technical documentation to ensure that they are still valid;	N/A - Not evaluated
	The manufacturer shall ensure that the technical documentation reflects any changes to materials, parts or sub-assemblies in accordance with 4.3.3.	N/A - Not evaluated

Section 2 – Verdict

Based upon review of the provided information, Kinematics LLC, hereafter referred to as, “the company,” can claim compliance to the RoHS Directive 2011/65/EU + (EU)2015/863 for the subject equipment based on the supplied documentation.

EN IEC 63000:2018 identifies three types of proof for compliance to 2011/65/EU. See EN IEC 63000:2018, Section 4.3.3, Collecting information:

As a result of the manufacturer's assessment, the following documents on materials, parts, and/or sub-assemblies shall be collected:

a) Supplier declarations and/or contractual agreements, such as:

- *Supplier declarations, confirming that the restricted substance content of the material, part, or sub-assembly is within the permitted levels and identifying any exemptions that have been applied.*
- *Signed contracts confirming that the manufacturer's specification for the maximum content of restricted substances in a material, part, or sub-assembly is fulfilled.*
- *Such declarations or agreements shall cover a specific material, part and/or sub-assembly, or a specific range of materials, parts and/or sub-assemblies.*

and/or

b) Material Declarations:

- *Material declarations providing information on specific substance content and identifying any exemptions that have been applied.*
- *The material declaration content should meet the requirements specified in IEC 62474:2012, 4.2.3 for the applicable substances.*

and/or

c) Analytical test results:

- *Analytical test results using the methods described or referenced in the IEC 62321 series.*

F2 Labs can facilitate the laboratory analysis of unapproved components and sub-assemblies by separate agreement.

F2 Labs notes that the RoHS requirements and obligations must become a part of the quality system to ensure that non-compliant sub-assemblies and components are not substituted.

Section 3 - Description of Technical Intervention

The company engaged F2 Labs for a technical assessment of the subject equipment using the European standard, EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances, to determine compliance with the [RoHS Directive 2011/65/EU](#).

F2 Labs notes that this evaluation is based on documents provided by the company in pursuance of a claim of compliance with the Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU. This resulting report is limited to a review of documentation only and relies on the integrity of the information provided to F2 Labs as a basis for the company claim of compliance. F2 Labs is not responsible for false claims of compliance for materials, components, sub-assemblies, etc. which are fraudulently declared to be in compliance with the concerned legislation.

Section 4 - Detail of the Service

The evaluation and report compilations were completed in F2 Labs offices between March 6 and March 26, 2024, based on shared technical information.

Section 5 - RoHS Directive 2011/65/EU + (EU)2015/863 – Detail of Applicability & Compliance Path

1. The definition of manufacturer is indicated in Article 3, Definitions (6):
 - ‘manufacturer’ means any natural or legal person who manufactures an EEE or who has an EEE designed or manufactured and markets it under his name or trademark;
2. See RoHS 2011/65/EU, Article 2, Scope (1.)
 - This Directive shall, subject to paragraph 2, apply to EEE falling within the categories set out in Annex I.

3. See RoHS 2011/65/EU, Annex I

Categories of EEE covered by this Directive:

1. Large household appliances
2. Small household appliances
3. IT and telecommunications equipment
4. Consumer equipment
5. Lighting equipment
6. Electrical and electronic tools
7. Toys, leisure and sports equipment
8. Medical devices
9. Monitoring and control instruments including industrial monitoring and control instruments
10. Automatic dispensers
11. Other EEE not covered by any of the categories above

4. See 2011/65/EU, Article 3, Definitions (1)

- 'electrical and electronic equipment' or 'EEE' means equipment which is dependent on electric currents or electromagnetic fields in order to work properly and equipment for the generation, transfer and measurement of such currents and fields and designed for use with a voltage rating not exceeding 1000 volts for alternating current and 1500 volts for direct current;

5. See 2011/65/EU, Annex II, Restricted substances referred to in Article 4(1) and maximum concentration values tolerated by weight in homogeneous materials

- Lead (0,1 %)
- Mercury (0,1 %)
- Cadmium (0,01 %)
- Hexavalent chromium (0,1 %)
- Polybrominated biphenyls (PBB) (0,1 %)
- Polybrominated diphenyl ethers (PBDE) (0,1 %)

The above list was amended by (EU)2015/863 on July 22, 2019, to add:

- Bis(2-ethylhexyl) phthalate (DEHP) (0,1 %)
- Butyl benzyl phthalate (BBP) (0,1 %)
- Dibutyl phthalate (DBP) (0,1 %)
- Diisobutyl phthalate (DIBP) (0,1 %)

As per (EU)2015/863, please note:

The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.

The restriction of DEHP, BBP, DBP and DIBP shall not apply to cables or spare parts for the repair, the reuse, the updating of functionalities or upgrading of capacity of EEE placed on the market before 22 July 2019, and of medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, placed on the market before 22 July 2021.

The restriction of DEHP, BBP and DBP shall not apply to toys which are already subject to the restriction of DEHP, BBP and DBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

6. For the purposes of this report, we note the cooperative relationship between the WEEE Directive 2012/19/EU and the RoHS Directive 2011/65/EU. Indicative lists of this equipment are listed in 2012/19/EU, Annex II.

7. See below 2012/19/EU, Annex II, categories:

Cat #	Category Name	List of EEE
1	Large Household Appliances	<ul style="list-style-type: none"> • Large cooling appliances • Refrigerators • Freezers • Other large appliances used for refrigeration, conservation and storage of food • Washing machine • Clothes dryers • Dish washing machines • Cookers • Electric stoves • Electric hot plates • Microwaves • Other large appliances used for cooking and other processing of food • Electric heating appliances • Electric radiators • Other large appliances for heating rooms, beds, seating furniture • Electric fans • Air conditioner appliances • Other fanning, exhaust ventilation and conditioning equipment
2	Small Household Appliances	<ul style="list-style-type: none"> • Vacuum cleaners • Carpet sweepers • Other appliances for cleaning • Appliances used for sewing, knitting, weaving and other processing for textiles • Irons and other appliances for ironing, mangling and other care of clothing • Toasters • Fryers • Grinders, coffee machines and equipment for opening or sealing containers or packages • Electric knives • Appliances for hair cutting, hair drying, tooth brushing, shaving, massage and other body care appliances • Clocks, watches and equipment for the purpose of measuring, indicating or registering time • Scales

Cat #	Category Name	List of EEE
3	IT and Telecommunications Equipment	<ul style="list-style-type: none"> • Centralised data processing: <ul style="list-style-type: none"> ○ Mainframes ○ Minicomputers ○ Printer units • Personal computing: <ul style="list-style-type: none"> ○ Personal computers (CPU, mouse, screen and keyboard included) ○ Laptop computers (CPU, mouse, screen and keyboard included) ○ Notebook computers ○ Notepad computers ○ Printers ○ Copying equipment ○ Electrical and electronic typewriters ○ Pocket and desk calculators ○ Other products and equipment for the collection, storage, processing, presentation or communication of information by electronic means ○ User terminals and systems ○ Facsimile machine (fax) ○ Telex ○ Telephones ○ Pay telephones ○ Cordless telephones ○ Cellular telephones ○ Answering systems ○ and other products or equipment of transmitting sound, images or other information by telecommunications
4	Consumer Equipment and Photovoltaic Panels	<ul style="list-style-type: none"> • Radio sets • Television sets • Video cameras • Video recorders • Hi-fi recorders • Audio amplifiers • Musical instruments • and other products or equipment for the purpose of recording or reproducing sound or images, including signals or other technologies for the distribution of sound and image than by telecommunications • Photovoltaic panels
5	Lighting Equipment	<ul style="list-style-type: none"> • Luminaires for fluorescent lamps with the exception of luminaires in households • Straight fluorescent lamps • Compact fluorescent lamps • High intensity discharge lamps, including pressure sodium lamps and metal halide lamps • Low pressure sodium lamps • Other lighting or equipment for the purpose of spreading or controlling light with the exception of filament bulbs

Cat #	Category Name	List of EEE
6	Electrical And Electronic Tools (with the Exception of Large-Scale Stationary Industrial Tools)	<ul style="list-style-type: none"> • Drills • Saws • Sewing machines • Equipment for turning, milling, sanding, grinding, sawing, cutting, shearing, drilling, making holes, punching, folding, bending or similar processing of wood, metal and other materials • Tools for riveting, nailing or screwing or removing rivets, nails, screws or similar uses • Tools for welding, soldering or similar use • Equipment for spraying, spreading, dispersing or other treatment of liquid or gaseous substances by other means • Tools for mowing or other gardening activities
7	Toys, Leisure and Sports Equipment	<ul style="list-style-type: none"> • Electric trains or car racing sets • Hand-held video game consoles • Video games • Computers for biking, diving, running, rowing, etc. • Sports equipment with electric or electronic components • Coin slot machines
8	Medical Devices (with the Exception of All Implanted and Infected Products)	<ul style="list-style-type: none"> • Radiotherapy equipment • Cardiology equipment • Dialysis equipment • Pulmonary ventilators • Nuclear medicine equipment • Laboratory equipment for in vitro diagnosis • Analysers • Freezers • Fertilization tests • Other appliances for detecting, preventing, monitoring, treating, alleviating illness, injury or disability
9	Monitoring and Control Instruments	<ul style="list-style-type: none"> • Smoke detector • Heating regulators • Thermostats • Measuring, weighing or adjusting appliances for household or as laboratory equipment • Other monitoring and control instruments used in industrial installations (e.g. in control panels)
10	Automatic Dispensers	<ul style="list-style-type: none"> • Automatic dispensers for hot drinks • Automatic dispensers for hot or cold bottles or cans • Automatic dispensers for solid products • Automatic dispensers for money • All appliances which deliver automatically all kinds of products
11	Other EEE not covered by any of the categories above	<ul style="list-style-type: none"> • Examples include 2-wheeled electric vehicles; electronic nicotine delivery systems (ENDS) such as e-cigarettes, cannabis vaporizers and vape pens; electrical cables that are less than 250V working voltage.

Summary of RoHS Applicability

The subject equipment is EEE as defined in 2011/65/EU +(EU)2015/863, Article 3 (1) and meets the category of Electrical and Electronic Tools, as indicated in 2011/65/EU, Annex I (6). This equipment is subject to the RoHS Directive 2011/65/EU per Article 2 (1).

- See 2011/65/EU, Article 2, Scope (1.)

This Directive shall, subject to paragraph 2, apply to EEE falling within the categories set out in Annex I.

Path to Compliance

1. See 2011/65/EU, Article 7, Obligations of manufacturers (a)

when placing EEE on the market, manufacturers ensure that it has been designed and manufactured in accordance with the requirements set out in Article 4;

2. See 2011/65/EU, Article 4 (1.)

Member States shall ensure that EEE placed on the market, including cables and spare parts for its repair, its reuse, updating of its functionalities or upgrading of its capacity, does not contain the substances listed in Annex II.

3. See 2011/65/EU, Article 4 (2.)

For the purposes of this Directive, no more than the maximum concentration value by weight in homogeneous materials as specified in Annex II shall be tolerated. The Commission shall adopt, by means of delegated acts in accordance with Article 20 and subject to the conditions laid down in Articles 21 and 22, detailed rules for complying with these maximum concentration values taking into account, inter alia, surface coatings.

4. See 2011/65/EU, Article 7 (b)

manufacturers draw up the required technical documentation and carry out the internal production control procedure in line with module A of Annex II to Decision No 768/2008/EC or have it carried out;

5. See 2011/65/EU, Article 7 (c)

where compliance of EEE with the applicable requirements has been demonstrated by the procedure referred to in point (b), manufacturers draw up an EU declaration of conformity and affix the CE marking on the finished product. Where other applicable Union legislation requires the application of a conformity assessment procedure which is at least as stringent, compliance with the requirements of Article 4(1) of this Directive may be demonstrated within the context of that procedure. A single technical documentation may be drawn up;

6. See 2011/65/EU, Article 7 (d)

manufacturers keep the technical documentation and the EU declaration of conformity for 10 years after the EEE has been placed on the market;

7. See 2011/65/EU, Article 7 (e)

manufacturers ensure that procedures are in place for series production to remain in conformity. Changes in product design or characteristics and changes in the harmonized standards or in technical specifications by reference to which conformity of EEE is declared shall be adequately taken into account;

8. See 2011/65/EU, Article 7 (f)

manufacturers keep a register of non-conforming EEE and product recalls, and keep distributors informed thereof;

9. See 2011/65/EU, Article 7 (g)

manufacturers ensure that their EEE bears a type, batch or serial number or other element allowing its identification, or, where the size or nature of the EEE does not allow it, that the required information is provided on the packaging or in a document accompanying the EEE;

10. See 2011/65/EU, Article 7 (h)

manufacturers indicate their name, registered trade name or registered trade mark and the address at which they can be contacted on the EEE or, where that is not possible, on its packaging or in a document accompanying the EEE. The address must indicate a single point at which the manufacturer can be contacted. Where other, applicable Union legislation contains provisions for the affixing of the manufacturer's name and address which are at least as stringent, those provisions shall apply;

11. See 2011/65/EU, Article 7 (i)

manufacturers who consider or have reason to believe that EEE which they have placed on the market is not in conformity with this Directive immediately take the necessary corrective measures to bring that EEE into conformity, to withdraw it or recall it, if appropriate, and immediately inform the competent national authorities of the Member States in which they made the EEE available to that effect, giving details, in particular, of the noncompliance and of any corrective measures taken;

12. See 2011/65/EU, Article 7 (j)

manufacturers, further to a reasoned request from a competent national authority, provide it with all the information and documentation necessary to demonstrate the conformity of the EEE with this Directive, in a language which can be easily understood by that authority, and that they cooperate with that authority, at its request, on any action taken to ensure compliance with this Directive of EEE which they have placed on the market.

Section 6 - Summary of RoHS Compliance Process for this Product

The company will need to verify that all sub-assemblies and components used in the construction of the product are in compliance with the RoHS 2011/65/EU levels listed in Annex II, amended by the Commission Delegated Directive (EU) 2015/863. This is achieved by way of constructional review leading to a technical report using EN IEC 63000:2018 as a reference and guide, as it is the sole harmonized EN standard for the RoHS Directive 2011/65/EU. The company may then proceed to compile a Technical File and draft an EU declaration of conformity for indication of compliance.

Please note:

- The EU declaration of conformity must be translated into the language of the member nation where it will be sent. This is the responsibility of the manufacturer.¹

¹ 2011/65/EU, Article 13 (2.), EU declaration of conformity

- The Technical File, along with the EU declaration of conformity, must be retained by the manufacturer for ten years after the last product is placed in the EU.
- The product must have a CE marking as per Regulation (EC) No 765/2008, Article 30² and, “affixed visibly, legibly, and indelibly to the finished EEE or its data plate.”³
- The CE marking is the only legal marking for the claim of compliance to RoHS 2011/65/EU + (EU)2015/863.
- The purpose of this evaluation is to compile the EN IEC 63000:2018. Technical Report referenced above.

Section 7 - EN IEC 63000:2018, Introduction

From EN IEC 63000:2018, Introduction:

“Certain substances contained in electrical and electronic products are restricted by legislation and/ or customer specifications. Manufacturers of final products therefore need to be able to demonstrate that their products meet the applicable substance restrictions.

For those restrictions that apply at the component or material level, it is impractical for manufacturers of electrical and electronic products to undertake their own testing of all materials contained in the final assembled product. Instead, manufacturers work with their suppliers to manage compliance and compile technical documentation as evidence of compliance. This approach is well recognized by both industry and enforcement authorities.

The aim of this document is to specify the technical documentation that the manufacturer needs to compile in order to declare compliance with the applicable substance restrictions, under various substance regulations worldwide.

This document is based on European Standard EN 50581:2012, which supports Directive 2011/65/EU of the European Parliament and the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).”

Section 8 - EN IEC 63000:2018 (Sec 4) Technical Documentation

Sec 4.1 (Overview) of EN IEC 63000:2018 – The manufacturer shall compile technical documentation to demonstrate that electrical and electronic products comply with substance restrictions.

Sec 4.2 (Content of the technical documentation) of EN IEC 63000:2018 - The technical documentation shall include at least the following elements:

- a general description of the product
- documents for materials, parts, and/or sub-assemblies

² 2011/65/EU, Article 14, General principles of the CE marking

³ 2011/65/EU, Article 15 (1.), Rules and conditions for affixing the CE marking

- information showing the relationship between the technical documents identified in 4.3 and the corresponding materials, parts and/or sub-assemblies in the product
- list of standards and/or other technical specifications that have been used to establish the technical documents identified in 4.3, or to which such documents refer.

See 4.3.4, para 2 - The manufacturer shall evaluate, in accordance with these procedures, the source and content of each document received in order to determine whether or not the material, part, or sub-assembly meets the specified substance restrictions.

Section 9 - EN IEC 63000:2018 (Sec 4.3.4) Evaluation of Information

Sec 4.3.4 (Evaluation of Information) of EN IEC 63000:2018 – All parts/sub-assemblies used in construction of the subject equipment are evaluated as per EN IEC 63000:2018, clause 4.3.4. This evaluation will enable the manufacturer to decide whether the documents provide sufficient evidence of compliance to justify their inclusion in the technical documentation.

- If a document is considered to be of sufficient quality and trustworthiness, then it shall be included in the technical documentation. *(These items are marked “Compliant” in the table of Section 10 of this report.)*
- If a document is not considered to be of sufficient quality or trustworthiness, then the manufacturer shall determine what further actions are necessary – possible actions include requesting additional information from the supplier or undertaking his own substance analysis. *(These items are marked “Not Compliant” in the table of Section 10 of this report.)*

The criteria for acceptance of the supplier documentation as compliant per RoHS 2011/65/EU is indicated below:

- Criterion 1: Documentation must indicate the model number or other clear, traceable way to link the part to the document.
 - Non-compliance with criterion 1 is designated as “Not Compliant” in the table in Section 10 of this report.
- Criterion 2: The manufacturer must indicate the manufacturer/supplier name (and address preferably) on the document and/or the person responsible for the claim of compliance.
 - Non-compliance with criterion 2 is designated as “Not Compliant” in the table in Section 10 of this report.
- Criterion 3: An affirmative claim of compliance to the RoHS Directive 2011/65/EU + (EU)2015/863 restrictions.

Non-compliance with criterion 3 is designated as “Not Compliant” in the table in Section 10 of this report.

Section 10 - List of Parts/Sub-assemblies

The compliance of the parts/sub-assemblies used in the construction of the product are shown by the table below. The table describes the following compliance information:

- Parts/sub-assemblies marked “Compliant” are in compliance.
- Parts/sub-assemblies marked “Not Compliant” are not in compliance.
- Parts/sub-assemblies marked “Not Submitted” do not have adequate documentation to make a determination of compliance or non-compliance.
- Parts/sub-assemblies marked “N/A - Out of Scope” are not required to comply with the substance restriction levels. Examples are batteries, packaging, non-electrical consumable products.

Supplier Name	Part Name	Part Number	RoHS 2011/65/EU+(EU)2015/863
Changzhou Dingli Bearing Co., Ltd	Taper Roller Bearing	GB/T297-1994 33108	Compliant
Changzhou Dingli Bearing Co., Ltd	Taper roller bearing	GB/T297-94 33208	Compliant
Changzhou Qianxiang Machinery Co., Ltd	Thread End Cap	M79×2-75-47-01-REV.A	Compliant
Changzhou Qianxiang Machinery Co., Ltd	Thread End Cap - HE8C-61MHD-25MRC-132SS-BC110-A1-REV.J pt 1	M84×2-DA301-01-REV.D - pt 1	Compliant
Changzhou Yijingzhu Steel Ball Co., Ltd	Steel Ball	GB/T 308 Φ19.844	Compliant
Changzhou Zhongqiang	Protective cover	P007-25-BC310-01-REV.A	Compliant
Dongguan Puwei Waterproof Breathable Film Material Co., Ltd	Breather	PUWM12×1.5-10-8B	Compliant
Jiangsu Ruite Rotary Support Co., Ltd	Housing - pt 2	BST07C01-4-51-β4.8-65-R-BC310-01-REV.A - pt2	Compliant
Jiangyin Nanxin Silk Screen Printing Sign Factory	Nameplate	N078-REV.D	Compliant
Jiangyin No.3 Rubber Products Co., Ltd	Rubber plug	DS-03-REV.B	Compliant
Jiangyin No.3 Rubber Products Co., Ltd	Metal thread Plug	DS-22-01-REV.B	Compliant
Jiangyin No.3 Rubber Products Co., Ltd	Rubber plug	DS-DIA14-01-REV.A	Compliant
Jiangyin No.3 Rubber Products Co., Ltd	O-ring	GB T3452.1-2005 22.4×1.8 -40°C	Compliant

Supplier Name	Part Name	Part Number	RoHS 2011/65/EU+(EU)2015/863
Jiangyin No.3 Rubber Products Co., Ltd	Oil Seal	GB/T13871-2007 155×170×8 -40°C	Compliant
Jiangyin No.3 Rubber Products Co., Ltd	Oil Seal	GB/T13871-2007 40×50×8 -40°C	Compliant
Jiangyin No.3 Rubber Products Co., Ltd	Oil Seal	GB/T13871-2007 65×80×5 -40°C	Compliant
Jiangyin No.3 Rubber Products Co., Ltd	O-ring	GB/T3452.1-2005 218×2.65 -40°C	Compliant
Jiangyin No.3 Rubber Products Co., Ltd	Oil Seal	GB13871-1992 200×230×15 -40°C	Compliant
Jiangyin No.3 Rubber Products Co., Ltd	Oil Seal	GB13871-1992 240×270×15 -40°C	Compliant
Jiangyin No.3 Rubber Products Co., Ltd	Oil Seal	GB13871-1992 40×82.5×10 -40°C	Compliant
Jiangyin No.3 Rubber Products Co., Ltd	Oil Seal	GB13871-1992 75×90×5 -40°C	Compliant
Jiangyin Qinnan en Mechanical and Electrical Co., Ltd	Plastic protective cover	P007-111-01-REV.A	Compliant
Jiangyin Runzhong Lubricating Oil Co., Ltd	Gear Oil	Mobil SHC 320	NA - Out of Scope
Jiangyin Runzhong Lubricating Oil Co., Ltd	Grease	Mobilith SHC 100	NA - Out of Scope
Jiangyin Vicote Machinery Manufacturing Co., Ltd	Housing	BHE08B01-141-120-65-REV.G	Compliant
Jiangyin Vicote Machinery Manufacturing Co., Ltd	Housing - pt1	BST07C01-4-51-β4.8-65-R-BC310-01-REV.A - pt1	Compliant
Jiangyin Vicote Machinery Manufacturing Co., Ltd	Cover	P07C-214-165-65-ST-BC310-01-REV.A	Compliant
JKMI Jiangyin Kinematics	Output Gear - pt 2	132.5SS-ST-BC310-01-REV.A	Compliant
JKMI Jiangyin Kinematics	Output Gear	GM08HD-4-61-180°-132SS-BC110-01-REV.F	Compliant
JKMI Jiangyin Kinematics	Worm Shaft	W07C02-4-51-β4.8-25H-25S-BC310-01-REV.A	Compliant
JKMI Jiangyin Kinematics	Worm Shaft	W08B02-25H-C-HE-61G-02-REV.A	Compliant
KDB Bearing Co., Ltd	Slip Bearing	K-SF1-439 (DB-179/165×160×25) Rev.A	Compliant
Wuxi Fengbaichang Machinery Manufacturing Co., Ltd	Output Gear - pt 1	GM07HD-4-51-β4.8-180-	Compliant

Supplier Name	Part Name	Part Number	RoHS 2011/65/EU+(EU)2015/863
Wuxi Limao Hardware Co., Ltd	Dust cap	1/8"-27NPT	Compliant
Wuxi Limao Hardware Co., Ltd	Elastic collar	DIN472 80×4	Compliant
Wuxi Limao Hardware Co., Ltd	Key	GB/T 1096-2003 A8×7×32	Compliant
Wuxi Limao Hardware Co., Ltd	Hex Head Screw	GB/T 2672-2017 M10×25 Grade 10.9	Compliant
Wuxi Limao Hardware Co., Ltd	Hex head screw	GB/T70.1-2008 M10×20 Grade 12.9	Compliant
Wuxi Limao Hardware Co., Ltd	Screw	GB/T78-2007 M8×12	Compliant
Wuxi Limao Hardware Co., Ltd	Screw	GB/T78-2007 M8×8	Compliant
Wuxi Limao Hardware Co., Ltd	Rivet	GB/T827-1986 2×5	Compliant
Wuxi Limao Hardware Co., Ltd	Grease Cup	JB/T7940.1-1995 1/8"- 27×10NPT	Compliant
Wuxi Limao Hardware Co., Ltd	Plug	JB/ZQ 4447-2006 1/4"- 18NPT	Compliant
Wuxi Limao Hardware Co., Ltd	Plastic bolt	M10×1	Compliant
Wuxi Yongzhiheng Precision Machinery Technology Co., Ltd	End Cap	C03-82.5-AA-BC310-01- REV.B	Compliant
Wuxi Yongzhiheng Precision Machinery Technology Co., Ltd	Thread End Cap - HE8C-61MHD-25MRC-132SS-BC110-A1-REV.J	M84×2-DA301-01-REV.D - pt 2	Compliant

Annex I - EN IEC 63000:2018, Annex ZZ

(informative)

Relationship between this European standard and the requirements of Directive 2011/65/EU aimed to be covered

This European Standard has been prepared under a Commission's standardization request "M/499" / "Ares(2011)1152542" to provide one voluntary means of conforming to the requirements of Directive 2011/65/EU of 8 June 2011 (OJEU of 1 July 2011) on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS recast Directive).

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZZ.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding requirements of that Directive and associated EFTA regulations.

Requirements of Directive 2011/65/EU	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
	Clause 4	Compliance with clause 4 of this Harmonized Standard secures that the technical documentation is drawn up in accordance with the requirements of the Directive.

Annex II - Regulation (EC) No. 765/2008, Annex II

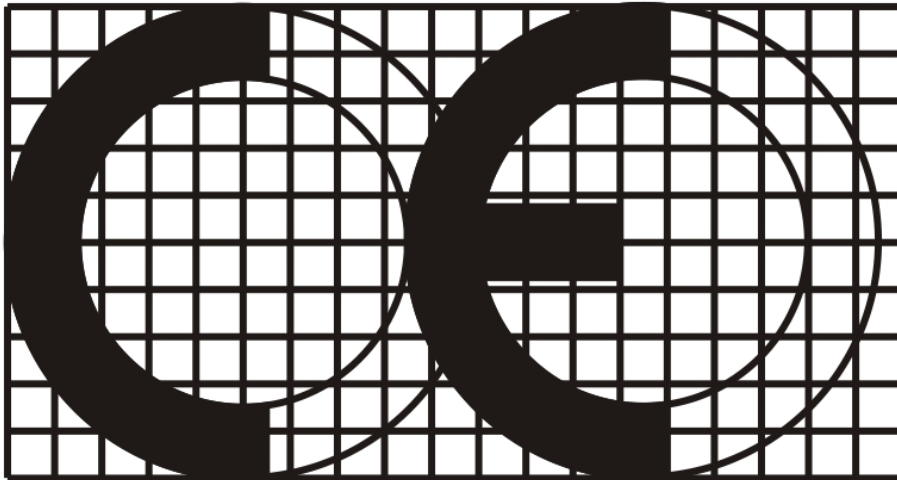
CE Marking

Technical Documentation ("Technical File")

Including (amongst others) information on materials, parts, and/or sub-assemblies:

- Supplier declarations and/or contractual agreements
- Material declarations
- Analytical test results

1. The CE marking shall consist of the initials 'CE' taking the following form:



2. If the CE marking is reduced or enlarged, the proportions given in the graduated drawing in paragraph 1 shall be respected.
3. Where specific legislation does not impose specific dimensions, the CE marking shall be at least 5 mm high.

Annex III - 2011/65/EU, Annex VI, EU Declaration of Conformity

EU Declaration of Conformity

1. No ... (unique identification of the EEE):
2. Name and address of the manufacturer or his authorised representative:
3. This declaration of conformity is issued under the sole responsibility of the manufacturer (or installer):
4. Object of the declaration (identification of EEE allowing traceability. It may include a photograph, where appropriate):
5. The object of the declaration described above is in conformity with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (*):
6. Where applicable, references to the relevant harmonised standards used or references to the technical specifications in relation to which conformity is declared:
7. Additional information:

Signed for and on behalf of: _____

(place and date of issue):

(name, function) (signature):

Annex IV- Regulation (EC) No. 768/2008, Annex II, Conformity Assessment Procedures, Module A

Internal Production Control

1. Internal production control is the conformity assessment procedure whereby the manufacturer fulfills the obligations laid down in points 2, 3 and 4, and ensures and declares on his sole responsibility that the products concerned satisfy the requirements of the legislative instrument that apply to them.

2. Technical documentation

The manufacturer shall establish the technical documentation. The documentation shall make it possible to assess the product's conformity to the relevant requirements, and shall include an adequate analysis and assessment of the risk(s). The technical documentation shall specify the applicable requirements and cover, as far as relevant for the assessment, the design, manufacture and operation of the product. The technical documentation shall, wherever applicable, contain at least the following elements:

- a general description of the product,
- conceptual design and manufacturing drawings and schemes of components, sub-assemblies, circuits, etc.
- descriptions and explanations necessary for the understanding of those drawings and schemes and the operation of the product,
- a list of the harmonized standards and/or other relevant technical specifications the references of which have been published in the *Official Journal of the European Union*, applied in full or in part, and descriptions of the solutions adopted to meet the essential requirements of the legislative instrument where those harmonized standards have not been applied. In the event of partly applied harmonized standards, the technical documentation shall specify the parts which have been applied,
- results of design calculations made, examinations carried out, etc., and test reports.

3. Manufacturing

The manufacturer shall take all measures necessary so that the manufacturing process and its monitoring ensure compliance of the manufactured products with the technical documentation referred to in point 2 and with the requirements of the legislative instruments that apply to them.

4. Conformity marking and declaration of conformity

4.1 The manufacturer shall affix the required conformity marking set out in the legislative instrument to each individual product that satisfies the applicable requirements of the legislative instrument.

4.2 The manufacturer shall draw up a written declaration of conformity for a product model and keep it together with the technical documentation at the disposal of the national authorities for 10 years after the product has been placed on the market. The declaration of conformity shall identify the product for which it has been drawn up.

A copy of the declaration of conformity shall be made available to the relevant authorities upon request.

5. Authorized representative

The manufacturer's obligations set out in point 4 may be fulfilled by his authorized representative, on his behalf and under his responsibility, provided that they are specified in the mandate.

Annex V - Updating the EU declaration of conformity and the Technical File

This report may follow a discrepancy report initially issued by F2 Labs as a part of an overall CE marking compliance project for the company. Note that receipt of this compliant report will require updating the EU declaration of conformity template that may have been previously provided by F2 Labs.

Per Annex III of this report, we note that the RoHS Directive 2011/65/EU should be added to the EU declaration of conformity, and the following statement:

The object of the declaration described above is in conformity with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

Next, please add reference to this standard in the standards section of the EU declaration of conformity:

EN IEC 63000:2018 -Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

Pertaining to the Technical File for this product, please add this report to the RoHS section of the Technical File.

Annex VI - Large scale stationary tools and large scale fixed installations

The RoHS Directive 2011/65/EU defines equipment within its scope as per below –

Article 2, Scope

1. *This Directive shall, subject to paragraph 2, apply to EEE falling within the categories set out in Annex I.*

See definition of ‘EEE’ in Article 3 (1):

Article 3, Definitions

For the purposes of this Directive, the following definitions shall apply:

(1) ‘electrical and electronic equipment’ or ‘EEE’ means equipment which is dependent on electric currents or electromagnetic fields in order to work properly and equipment for the generation, transfer and measurement of such currents and fields and designed for use with a voltage rating not exceeding 1 000 volts for alternating current and 1 500 volts for direct current;

See Annex I (6.) and (9.)

ANNEX I, Categories of EEE covered by this Directive

1. *Large household appliances.*
2. *Small household appliances.*
3. *IT and telecommunications equipment.*
4. *Consumer equipment.*
5. *Lighting equipment.*
6. *Electrical and electronic tools.*
7. *Toys, leisure and sports equipment.*
8. *Medical devices.*
9. *Monitoring and control instruments including industrial monitoring and control instruments.*
10. *Automatic dispensers.*
11. *Other EEE not covered by any of the categories above.*

Next, see the WEEE Directive 2012/19/EU to see the indicative list of equipment matched to Annex I in RoHS 2011/65/EU. These are indicative, not complete. And, we note that WEEE and RoHS were written as complimentary Directives and refer to each other. (link: [RoHS/WEEE](#)).

See WEEE 2012/19/EU, Annex II (6.) and (9.)

6. *ELECTRICAL AND ELECTRONIC TOOLS (WITH THE EXCEPTION OF LARGE-SCALE STATIONARY INDUSTRIAL TOOLS)*
 - *Drills*
 - *Saws*
 - *Sewing machines*
 - *Equipment for turning, milling, sanding, grinding, sawing, cutting, shearing, drilling, making holes, punching, folding, bending or similar processing of wood, metal and other materials*
 - *Tools for riveting, nailing or screwing or removing rivets, nails, screws or similar uses*
 - *Tools for welding, soldering or similar use*
 - *Equipment for spraying, spreading, dispersing or other treatment of liquid or gaseous substances by other means*

- *Tools for mowing or other gardening activities*
- 9. **MONITORING AND CONTROL INSTRUMENTS**
- *Smoke detector*
- *Heating regulators*
- *Thermostats*
- *Measuring, weighing or adjusting appliances for household or as laboratory equipment*
- *Other monitoring and control instruments used in industrial installations (e.g. in control panels)*

Next, we refer to two possible exclusions in RoHS 2011/65/EU.

See RoHS 2011/65/EU, Article 2 (4.) (d) and (e):

Article 2, Scope

4. *This Directive does not apply to:*

(d) large-scale stationary industrial tools;

(e) large-scale fixed installations;

Next, see the definitions of each in RoHS 2011/65/EU, Article 3 (3) and (4):

(3) ‘large-scale stationary industrial tools’ means a large-scale assembly of machines, equipment, and/or components, functioning together for a specific application, permanently installed and de-installed by professionals at a given place, and used and maintained by professionals in an industrial manufacturing facility or research and development facility;

(4) ‘large-scale fixed installation’ means a large-scale combination of several types of apparatus and, where applicable, other devices, which are assembled and installed by professionals, intended to be used permanently in a pre-defined and dedicated location, and de-installed by professionals;

Referring next to the EU Commission published [RoHS 2 FAQ](#), if the manufacturer cannot categorize the subject machinery as meeting all of the criteria below then the equipment is not excluded from RoHS.

See Q3.1 –

Q3.1 What are “large-scale stationary industrial tools” and “large-scale fixed installations”? (Articles 2(4)(d) and 2(4)(e)).

Unlike RoHS 1, RoHS 2 has an open scope. However, several product groups are excluded from the RoHS 2 scope.

Two of the exclusions listed in Article 2(4) refer to combinations of EEE in a professional context, i.e. “large-scale stationary industrial tools” (Article 2(4)(d)) and “large-scale fixed installations” (Article 2(4)(e)).

Both terms are explained in the definitions (Articles 3(3) and 3(4)), however it is not explained what “large-scale” means. Both categories are combinations of various types of items, such as machinery, components etc. for permanent use at a specific place, installed and de-installed by professionals.

Therefore the two categories may overlap. However, it is important to consider that the meaning of “large-scale” in absolute terms may be a different one for tools and installations, as there are differences between tools and installations.

Tools are essentially machines, stand-alone or assemblies, often with moving parts, and used for example for the treatment or manufacturing of materials and work pieces. The Machinery Directive¹¹ can be used as guidance.

Typical machine tools can also be part of fixed installations.

In order to benefit from either exclusion, the tool or installation must meet all the respective requirements. As stated below, it has to be:

(Tool)

- *an assembly of machines, equipment and/or components, functioning together for a specific application;*
- *permanently installed and de-installed by professionals at a given place;*
- *used and maintained by professionals in an industrial manufacturing facility or R&D facility;*
- *and it has to be large-scale;*

(Installation) – a combination of several types of apparatus and, where applicable, other devices;

- *assembled, installed and de-installed by professionals;*
- *with the intention to be used permanently in a pre-defined and dedicated location;*
- *and it has to be large-scale.*

“Large-scale” is part of both sets of requirements. Evidently, this draws a line between “larger” tools and installations benefiting from an exclusion, and otherwise similar, “smaller” equipment.

“Large-scale” refers to dimensional or similar criteria as explained below, although this criterion is not specified in the RoHS 2.

Note this sentence from Q3.1: In order to benefit from either exclusion, the tool or installation must meet all the respective requirements.

F2 Labs interpretation: This means that the equipment must meet all of the above criteria in order to be excluded from RoHS. With that interpretation (provided by the EU) most machinery is in the scope of RoHS, presently.