



**BUREAU
VERITAS**

TEST REPORT

LAB NO. (8820)262-0008
DATE Nov 18, 2020
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APPLICANT : **KYSAN ELECTRONICS INC.**
2570 NORTH FIRST STREET, SUITE 220, SAN JOSE, CA, 95131, US

DATE OF SUBMISSION : SEP 27, 2020

TEST PERIOD : SEP 27, 2020 TO NOV 18, 2020

SAMPLE DESCRIPTION : STEPPER MOTORT

Style No. : 42BYG, 57BYG, B5BYG, 86BYG, 110BYG 35BYG, 28BYG, 39BYG,17HG, 14HG, 11HG, 23HG, 17HD, 16HD

Sample Size: 3

SUMMARY OF TEST RESULTS

TEST REQUESTED	CONCLUSION	REMARK
European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendment Directive 2015/863/EU	PASS	-



BUREAU VERITAS SHENZHEN CO.,LTD
DONGGUAN BRANCH

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REMARK

If there are questions or concerns on this report, please contact the following persons:

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Photo of the Submitted Sample



Photo of test Item(s)

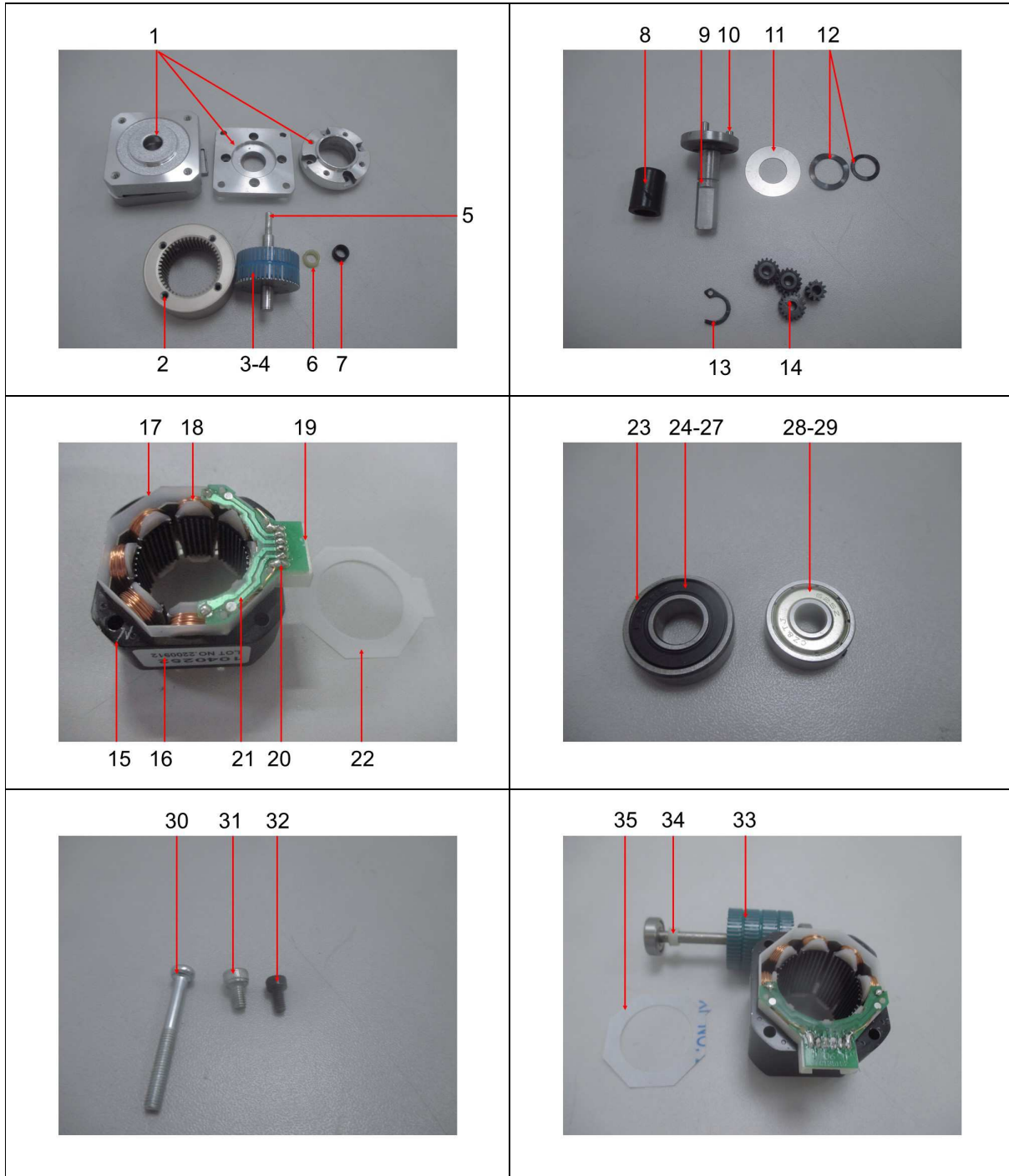
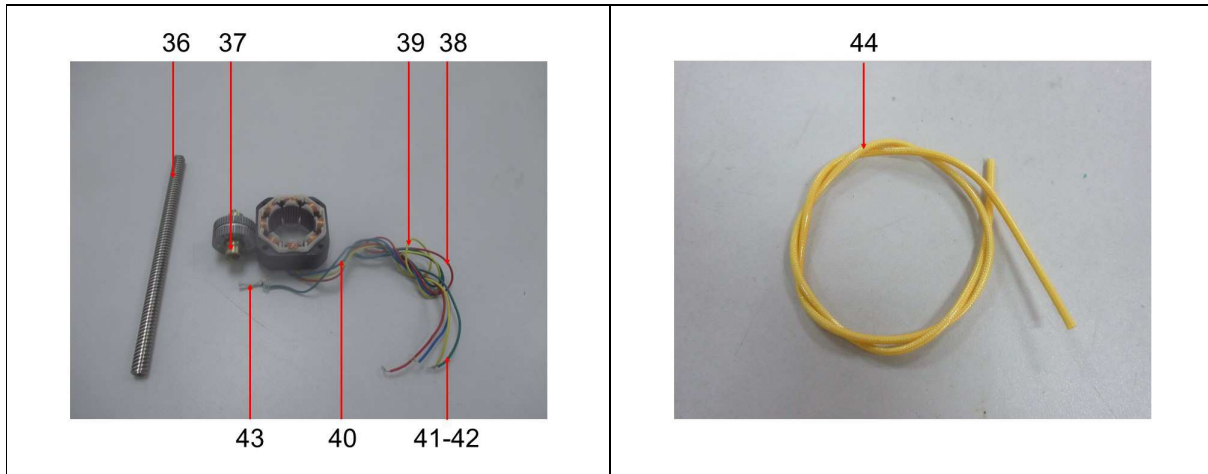


Photo of test Item(s)





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Component Description List

Test Item(s)	Component Description(s)	Location	Style(s)
1	Silvery metal	Frame/ring	1-3
2	Silvery metal	Gear	1
3	Blue coating	Coating, plate, shaft	1
4	Silvery metal	Plate, shaft	1-3
5	Silvery metal	Shaft	1-3
6	Beige plastic	Ring	1
7	Black plastic	Ring	1
8	Silvery metal	Big shaft	1
9	Silvery metal	Small shaft, big shaft	1
10	Silvery metal	Ring, shaft	1-2
11	Black coated silvery metal	Big/small ring, shaft	1
12	Black coated silvery metal	Clip, shaft	1
13	Black coated silvery metal	Gear	1
14	Black coated silvery metal	Frame	1-3
15	Black/silver coated transparent plastic	Sticker, frame	1-3
16	Translucent plastic	Coil holder, frame	1-3
17	Coppery metal	Coil, coil holder, frame	1-3
18	White plastic	Socket, PCB, frame	1,2
19	Silvery solder	Solder, PCB, frame	1,2
20	Green PCB	PCB, frame	1,2
21	White plastic	Ring, frame	1
22	Silvery metal	Outer ring/inner ring, big/small bearing	1-3
23	Black soft plastic	Ring, shield, big bearing	1
24	Silvery metal	Shield, big bearing	1-3
25	Silvery metal	Retainer, big bearing	1-3
26	Silvery metal	Ball, retainer, big/small bearing	1-3
27	Light golden metal	Shield, small bearing	1-3
28	Brown plastic	Retainer, small bearing	1
29	Cold silvery metal	Big screw	1-3
30	Silvery metal	Small screw	1
31	Black coated silvery metal	Screw	1
32	Green coating	Coating, plate, shaft	2
33	Translucent plastic	Ring, shaft	2
34	Blue coated white fabric	Ring	2
35	Silvery metal	Shaft	3
36	Golden metal	Bearing, gear	3
37	Red soft plastic	Wire insulation, cable	3



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Component Description List

Test Item(s)	Component Description(s)	Location	Style(s)
38	Yellow soft plastic	Wire insulation, cable	3
39	Blue soft plastic	Wire insulation, cable	3
40	Green soft plastic	Wire insulation, cable	3
41	Silvery plated coppery metal	Wire insulation, cable	3
42 s	Silvery solder	Solder, wire, cable	3
43	Transparent soft plastic with white fabric	Sleeve, cable	3



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TEST RESULT

Compliance Test – European Parliament and Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendment Directive 2015/863/EU

Test Method : See Appendix.

See Analytes and their corresponding Maximum Allowable Limit in Appendix

-	Result									
Parameter	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs & PBDEs	DBP	BBP	DEHP	DIBP	Conclusion
Unit	mg/kg									-
Test Item(s)	-	-	-	-	-	-	-	-	-	-
1	490*	BL	BL	BL	NA	NA	NA	NA	NA	PASS
2	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
3	BL	BL	BL	BL	BL	BL	BL	BL	BL	PASS
4	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
5	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
6	BL	BL	BL	BL	BL	BL	BL	BL	BL	PASS
7	BL	BL	BL	BL	ND*	BL	BL	BL	BL	PASS
8	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
9	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
10	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
11	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
12	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
13	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
14	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
15	BL	BL	BL	BL	BL	BL	BL	BL	BL	PASS
16	BL	BL	BL	BL	BL	BL	BL	BL	BL	PASS
17	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
18	BL	BL	BL	BL	BL	BL	BL	BL	BL	PASS
19	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
20	BL	BL	BL	BL	ND*	NA	NA	NA	NA	PASS
21	BL	BL	BL	BL	BL	BL	BL	BL	BL	PASS
22	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
23	BL	BL	BL	BL	BL	BL	BL	BL	BL	PASS
24	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
25	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS



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TEST RESULT

Parameter	Result									Conclusion
	Lead (Pb)	Cadmium (Cd)	Mercury (Hg)	Chromium VI (Cr VI)	PBBs & PBDEs	DBP	BBP	DEHP	DIBP	
Unit	mg/kg									-
Test Item(s)	-	-	-	-	-	-	-	-	-	-
26	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
27	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
28	BL	BL	BL	BL	BL	BL	BL	BL	BL	PASS
29	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
30	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
31	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
32	BL	BL	BL	BL	BL	BL	BL	BL	BL	PASS
33	BL	BL	BL	BL	BL	BL	BL	BL	BL	PASS
34	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
35	BL	BL	BL	Negative*	NA	NA	NA	NA	NA	PASS
36	22000*	BL	BL	Negative*	NA	NA	NA	NA	NA	EXEMPTED#
37	BL	BL	BL	BL	BL	BL	BL	BL	BL	PASS
38	BL	BL	BL	BL	BL	BL	BL	BL	BL	PASS
39	BL	BL	BL	BL	BL	BL	BL	BL	BL	PASS
40	BL	BL	BL	BL	BL	BL	BL	BL	BL	PASS
41	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
42	BL	BL	BL	BL	NA	NA	NA	NA	NA	PASS
43	BL	BL	BL	BL	BL	BL	BL	BL	BL	PASS

Note / Key:

ND = Not detected	“>” = Greater than	“<” = Less than
BL = Below Limit	NA = Not applicable	IN = Inconclusive
mg/kg = milligram(s) per kilogram = ppm = part(s) per million		OL = Over Limit
Detection Limit : See Appendix.		

Remark:

- The testing approach is listed in table of Appendix.
- * denotes as reported result(s) was (were) performed by wet chemistry method. Others were screened by XRF. For XRF screening, the result(s) of Cr VI was (were) reported as total chromium and the result(s) of PBBs and PBDEs was (were) reported as total bromine. Also, the XRF result(s) may be different to the actual content based on various factors including, but not limit to, sample size, thickness, area, non-uniformity composition, surface flatness.
- According to European Council Directive 2011/65/EU, Article 5 “Adaptation of the Annexes to scientific and technical progress”, exemption(s) should be granted to the materials and components of Test Item(s) in the lists in Annexes III and IV of this directive.
- #According to Annex III of European Council Directive 2011/65/EU, exemptions were granted a few materials and Clause 6(c) is reiterated here “Copper alloy containing up to 4 % lead by weight”. Test Item(s) 36 was (were) claimed as is by client (received as is). Therefore, this (these) Test Item(s) containing the found lead level should be exempted.

APPENDIX

List of Analytes and their Corresponding Test Methods, Detection Limit and Maximum Allowable Limit [Compliance Test for European Parliament and Council Directive 2011/65/EU] :							
No.	Name of Analytes	Detection Limit(mg/kg)				Wet Chemistry	Maximum Allowable Limit(mg /kg)
		X-ray fluorescence (XRF)^[a]			Others		
		Plastic	Metal/Glass/ Ceramic				
1	Lead (Pb)	100	200	200	10 ^[b]	1000	
2	Cadmium (Cd)	50	50	50	10 ^[b]	100	
3	Mercury (Hg)	100	200	200	10 ^[c]	1000	
4	Chromium (Cr)	100	200	200	NA	NA	
5	Chromium VI (Cr VI)	NA	NA	NA	See ^[d] /10 ^[e] /3 ^[f,g]	1000 / Negative ^[h]	
6	Bromine (Br)	200	NA	200	NA	NA	
7	Polybromobiphenyls (PBBs) - Bromobiphenyl (MonoBB) - Dibromobiphenyl (DiBB) - Tribromobiphenyl (TriBB) - Tetrabromobiphenyl (TetraBB) - Pentabromobiphenyl (PentaBB) - Hexabromobiphenyl (HexaBB) - Heptabromobiphenyl (HeptaBB) - Octabromobiphenyl (OctaBB) - Nonabromobiphenyl (NonaBB) - Decabromobiphenyl (DecaBB)	NA	NA	NA	Each 50 ^[i]	Sum 1000	
8	Polybromodiphenyl ethers (PBDEs) - Bromodiphenyl ether (MonoBDE) - Dibromodiphenyl ether (DiBDE) - Tribromodiphenyl ether (TriBDE) - Tetrabromodiphenyl ether (TetraBDE) - Pentabromodiphenyl ether (PentaBDE) - Hexabromodiphenyl ether (HexaBDE) - Heptabromodiphenyl ether (HeptaBDE) - Octabromodiphenyl ether (OctaBDE) - Nonabromodiphenyl ether (NonaBDE) - Decabromodiphenyl ether (DecaBDE)	NA	NA	NA	Each 50 ^[i]	Sum 1000	
9	- Dibutyl phthalate (DBP) - Butyl benzyl phthalate (BBP) - Di-2-ethylhexyl phthalate (DEHP) - Diisobutyl phthalate (DIBP)	NA	NA	NA	Each 50 ^[j]	Each 1000	



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	NA = Not applicable IEC = International Electrotechnical Commission
[a]	Test method with reference to International Standard IEC 62321-3-1: 2013.
[b]	Test method with reference to International Standard IEC 62321-5: 2013.
[c]	Test method with reference to International Standard IEC 62321-4:2013+A1:2017.
[d]	Metal - Test method with reference to International Standard IEC 62321-7-1: 2015.
[e]	Polymers and Electronics - Test method with reference to European Standard EN 62321-7-2: 2017.
[f]	Leather - Test method International Standard ISO 17075-1:2017.
[g]	Other Than Metal, Leather, Polymers and Electronics - Test method with reference to International Standard ISO 17075-1:2017.
	Result(s) of Cr VI for metallic material(s) was (were) expressed in term of positive and negative. Negative means the absence of Cr VI on the tested areas and the result(s) was (were) regarded as in compliance with European Parliament and Council Directive 2011/65/EU, Article 4(1). While, positive means the presence of Cr VI on tested areas and the result(s) was (were) regarded as in conflict with European Parliament and Council Directive 2011/65/EU, Article 4(1).
[h]	
[i]	Test method with reference to International Standard IEC 62321-6: 2015.
[j]	Test method with reference to International Standard IEC 62321-8: 2017.
Testing Approach [Compliance Test for European Parliament and Council Directive 2011/65/EU] :	
The testing approach was with reference to the following document(s).	
1	International Standards IEC 62321-1: 2013 and IEC 62321-2: 2013
2	“RoHS Enforcement Guidance Document Version 1” by EU RoHS Enforcement Authorities Informal Network. (May 2006)
3	“RoHS Regulations - Government Guidance Notes” by United Kingdom Department for Business Innovation & Skills. (February 2011)
4	“Final Report to RoHS substances (Hg, Pb, Cr(VI), Cd, PBB and PBDE) in electrical and electronic equipment in Belgium” by Belgium Federal Public Service Health, Food Chain Safety and Environment. (November 2005)

*** End of Report ***