



TEST REPORT

Report No...... : WTF22F05104434A1C

Applicant..... : NINGBO YONGHAO ELECTRICAL TECHNOLOGY CO., LTD

Address..... : NO. 1 HUALONG AREA, ZHOUXIANG TOWN, CIXI CITY, ZHEJIANG, CHINA

Manufacturer..... : NINGBO YONGHAO ELECTRICAL TECHNOLOGY CO., LTD

Address..... : NO. 1 HUALONG AREA, ZHOUXIANG TOWN, CIXI CITY, ZHEJIANG, CHINA

Sample Name..... : TOASTER

Sample Model..... : YT-2001

Reference Model No...... : YT-2002, YT-2001A, YT-2002A, YT-2001B, YT-2002B, YT-2001AB, YT-2002AB, YT-4001, YT-4002, YT-4001B, YT-4002B, YT-2004, YT-2004A, YT-2004B, YT-2004AB, YT-6001, YT-6001K, YT-6001KS, YT-6002, YT-6002A, YT-2008, YT-6006, YT-6008, YT-4001A, YT-4002A, YT-1001, YT-1002, YT-1008, YT-2028, YT-100, YT-109, YT-108, YT-105, YT-103, YT-106, YT-107, YT-2006, YT-2001W, YT-2001BW, YT-6002T, YT-6002AT

Date of Receipt sample..... : 2022-05-26 & 2022-07-07

Testing period..... : 2022-05-26 to 2022-06-16 & 2022-07-07 to 2022-07-13

Date of Issue..... : 2022-07-29

Test Result..... : Refer to next page (s)

Prepared By:

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Swing.Liang



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WT-F-510-3003-05-A



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Test Requested : In accordance with the RoHS Directive 2011/65/EU and its amendment (EU) No. 2015/863.

Test Method..... : 1) With reference to IEC 62321-2:2021, disassembly, disjunction and mechanical sample preparation
2) With reference to IEC 62321-3-1:2013, screening - Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry
3) With reference to IEC 62321-4:2013+AMD1:2017 CSV, determination of Mercury by ICP-OES
4) With reference to IEC 62321-5:2013, determination of Lead and Cadmium by ICP-OES
5) With reference to IEC 62321-7-2: 2017 and IEC 62321-7-1: 2015, determination of Hexavalent Chromium by UV-Vis
6) With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS
7) With reference to IEC 62321-8:2017, determination of Phthalates content by GC-MS.

Test Conclusion : **Pass** (Based on the performed tests on the submitted samples, the results comply with the RoHS Directive 2011/65/EU and its amendment (EU) No. 2015/863)

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Sample Photo(s):



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**Test Results:****1. Lead, Mercury, Cadmium, Hexavalent Chromium, PBBs and PBDEs**

Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
1	White plastic shell	BL	BL	BL	BL	BL	NA
2	Beige plastic sheet	BL	BL	BL	BL	IN	PBBs : ND PBDEs : 601
3	Silvery metal shell	BL	BL	BL	IN	BL	Cr ⁶⁺ : Negative
4	Silvery metal shell	BL	BL	BL	BL	BL	NA
5	Silvery plastic adhesive label with black printing	BL	BL	BL	BL	BL	NA
6	Silvery metal holder	BL	BL	BL	BL	BL	NA
7	Silvery metal sheet	BL	BL	BL	BL	BL	NA
8	Silvery mica sheet	BL	BL	BL	BL	BL	NA
9	Golden metal rivet	BL	BL	BL	BL	BL	NA
10	Silvery metal rivet	BL	BL	BL	BL	BL	NA
11	Silvery metal sheet	BL	BL	BL	BL	BL	NA
12	Silvery metal strip	BL	BL	BL	IN	BL	Cr ⁶⁺ : Negative
13	Silvery metal wire	BL	BL	BL	IN	BL	Cr ⁶⁺ : Negative
14	Semi-transparent plastic cable tie	BL	BL	BL	BL	BL	NA
15	White fibrous wire covering	BL	BL	BL	BL	BL	NA
16	White plastic wire covering	BL	BL	BL	BL	BL	NA
17	Silvery metal wire	BL	BL	BL	BL	BL	NA
18	Golden metal terminal	BL	BL	BL	BL	BL	NA
19	White fibrous sleeve	BL	BL	BL	BL	BL	NA



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Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
20	Silvery metal sheet	BL	BL	BL	BL	BL	NA
21	Silvery metal strip	BL	BL	BL	BL	BL	NA
22	Silvery metal spring	BL	BL	BL	BL	BL	NA
23	Silvery metal sheet	BL	BL	BL	BL	BL	NA
24	Beige plastic sheet	BL	BL	BL	BL	IN	PBBs : ND PBDEs : 382
25	Dark grey plastic block	BL	BL	BL	BL	IN	PBBs : ND PBDEs : 245
26	White plastic sheet	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
27	Coppery metal sheet	BL	BL	BL	BL	BL	NA
28	Silvery metal contactor	BL	BL	BL	BL	BL	NA
29	Silvery metal screw	BL	BL	BL	BL	BL	NA
30	Silvery metal screw	BL	BL	BL	IN	BL	Cr ⁶⁺ : Negative
31	Silvery metal screw	BL	BL	BL	IN	BL	Cr ⁶⁺ : Negative
32	Black plastic shaft of switch	BL	BL	BL	BL	BL	NA
33	Silvery metal sheet of switch	BL	BL	BL	BL	BL	NA
34	Silvery metal shell of switch	BL	BL	BL	IN	BL	Cr ⁶⁺ : Negative
35	Silvery metal sheet of switch	BL	BL	BL	BL	BL	NA
36	Brown plastic sheet of switch	BL	BL	BL	BL	BL	NA
37	Silvery metal pin of switch	BL	BL	BL	IN	BL	Cr ⁶⁺ : Negative
38	Black plastic cap of button	BL	BL	BL	BL	BL	NA
39	Silvery metal sheet of button	BL	BL	BL	IN	BL	Cr ⁶⁺ : Negative



Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
40	Black plastic base of button	BL	BL	BL	BL	BL	NA
41	Silvery metal sheet of button	BL	BL	BL	BL	BL	NA
42	Green body of capacitor	BL	BL	BL	IN	BL	Cr ⁶⁺ : ND
43	Red body of glass diode	BL	BL	BL	BL	BL	NA
44	Black body of diode	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
45	Beige resistor with multicolour coating	BL	BL	BL	BL	BL	NA
46	Black body of rectifier	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
47	Black body of audion	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
48	Silvery metal pin of audion	BL	BL	BL	BL	BL	NA
49	Black plastic film of electrolytic capacitor	BL	BL	BL	BL	BL	NA
50	Silvery metal shell of electrolytic capacitor	BL	BL	BL	BL	BL	NA
51	Black rubber stopper of electrolytic capacitor	BL	BL	BL	BL	BL	NA
52	Grey metal foil of electrolytic capacitor	BL	BL	BL	BL	BL	NA
53	Silvery-grey metal foil of electrolytic capacitor	BL	BL	BL	BL	BL	NA
54	Brown paper of electrolytic capacitor	BL	BL	BL	BL	BL	NA
55	Solder	BL	BL	BL	BL	BL	NA
56	Green PCB	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
57	Yellow plastic adhesive tape of inductor	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
58	Coppery metal winding of inductor	BL	BL	BL	BL	BL	NA
59	Silvery metal sheet of inductor	BL	BL	BL	IN	BL	Cr ⁶⁺ : Negative



Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
60	Black plastic bobbin of inductor	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
61	White plastic jacket of plug	BL	BL	BL	BL	BL	NA
62	Silvery metal pin of plug	BL	OL	BL	BL	BL	#Pb : 3.26×10^4
63	Silvery metal sheet of plug	BL	BL	BL	BL	BL	NA
64	White plastic core of plug	BL	BL	BL	BL	IN	PBBs : ND PBDEs : ND
65	White plastic wire jacket	BL	BL	BL	BL	BL	NA
66	Yellow-green plastic wire covering	BL	BL	BL	BL	BL	NA
67	Brown plastic wire covering	BL	BL	BL	BL	BL	NA
68	Copper metal terminal	BL	BL	BL	BL	BL	NA
69	Blue plastic wire covering	BL	BL	BL	BL	BL	NA
70	Copper metal wire	BL	BL	BL	BL	BL	NA
71	Black heat-shrinkable tube	BL	BL	BL	BL	BL	NA

Remark:

- (1) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-VIS (for Cr⁶⁺) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1: 2013 (unit: mg/kg)

Element	Polymer	Metal	Composite Materials
Cd	$BL \leq (70-3\sigma) < IN < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < IN < (130+3\sigma) \leq OL$	$LOD < IN < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < IN < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < IN < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < IN < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < IN < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < IN < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < IN < (1500+3\sigma) \leq OL$
Cr	$BL \leq (700-3\sigma) < IN$	$BL \leq (700-3\sigma) < IN$	$BL \leq (500-3\sigma) < IN$
Br	$BL \leq (300-3\sigma) < IN$	--	$BL \leq (250-3\sigma) < IN$

BL= Below Limit

OL= Over Limit

LOD = Limit of Detection

-- = Not Regulated

- (2) "IN" expresses the inconclusive region, and further chemical testing to confirm whether it complies with the requirement of RoHS Directive.



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- (3) The XRF screening test for RoHS elements – the reading may be different to the actual content in the sample be of non-uniformity composition.
- (4) mg / kg =milligram per kilogram=ppm, $\mu\text{g}/\text{cm}^2$ = Micrograms per square centimetre.
- (5) ND = Not Detected or lower than limit of quantitation.
- (6) NA = Not Applicable, as the XRF screening test result was below the limit or as the XRF screening directly determine that test result was over the limit, it was not need to conduct the wet chemical testing.
- (7) LOQ = Limit of quantitation.

Test Items	Pb	Cd	Hg	Cr ⁶⁺		PBB	PBDE
Units	mg/kg	mg/kg	mg/kg	mg/kg	$\mu\text{g}/\text{cm}^2$	mg/kg	mg/kg
LOQ	2	2	2	8	0.1	5	5

The LOQ for single compound of PBBs and PBDEs is 5mg/kg, LOQ of Cr⁶⁺ for polymer and composite sample is 8mg/kg and LOQ of Cr⁶⁺ for metal sample is 0.1 $\mu\text{g}/\text{cm}^2$.

- (8) RoHS Requirement

Restricted Substances	Limits
Cadmium (Cd)	0.01% (100 mg/kg)
Lead (Pb)	0.1% (1000 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)

- (9) According to IEC 62321-7-1:2015, determined of Cr⁶⁺ on metal sample by boiling water extraction test method, and result is shown as Positive/Negative.
- Boiling water extraction:
- Negative = Absence of Cr⁶⁺ coating, the detected concentration in boiling water extraction solution is less than 0.10 $\mu\text{g}/\text{cm}^2$.
- Positive = Presence of Cr⁶⁺ coating, the detected concentration in boiling water extraction solution is greater than 0.13 $\mu\text{g}/\text{cm}^2$.
- Information on storage conditions and production date of the tested sample is unavailable and thus Cr⁶⁺ results represent status of the sample at the time of testing.
- (10) Abbreviation:
- “Pb” denotes Lead, “Cd” denotes Cadmium, “Hg” denotes Mercury, “Cr” denotes Chromium, “Cr (VI)” denotes Hexavalent Chromium, “Br” denotes Bromine, “PBBs” denotes Total Polybrominated Biphenyls, “PBDEs” denotes Total Polybrominated Diphenyl Ethers.
- (11)[#] = According to the declaration from client, the source of lead in test sample is from copper alloy while lead as copper alloy containing up to 4% lead by weight is exempted by Directive 2011/65/EU ANNEX III.

**2. Phthalates:**

Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T01	1+2+24+25 [△]	<50	<50	<50	<50
T02	5	<50	<50	<50	<50
T03	8+42+43+44+45 [△]	<50	<50	<50	<50
T04	15	<50	<50	<50	<50
T05	14+32+36+38+40 [△]	<50	<50	<50	<50
T06	16	<50	<50	<50	<50
T07	19	<50	<50	<50	<50
T08	26	<50	<50	<50	<50
T09	46+47+56 [△]	<50	<50	<50	<50
T10	49+54+57 [△]	<50	<50	159	<50
T11	51	<50	<50	<50	<50
T12	60+64 [△]	<50	<50	<50	<50
T13	61	<50	<50	<50	<50
T14	65	<50	<50	<50	<50
T15	66	<50	<50	<50	<50
T16	67	<50	<50	<50	<50
T17	69	<50	<50	<50	<50
T18	71	<50	<50	<50	<50

Note:

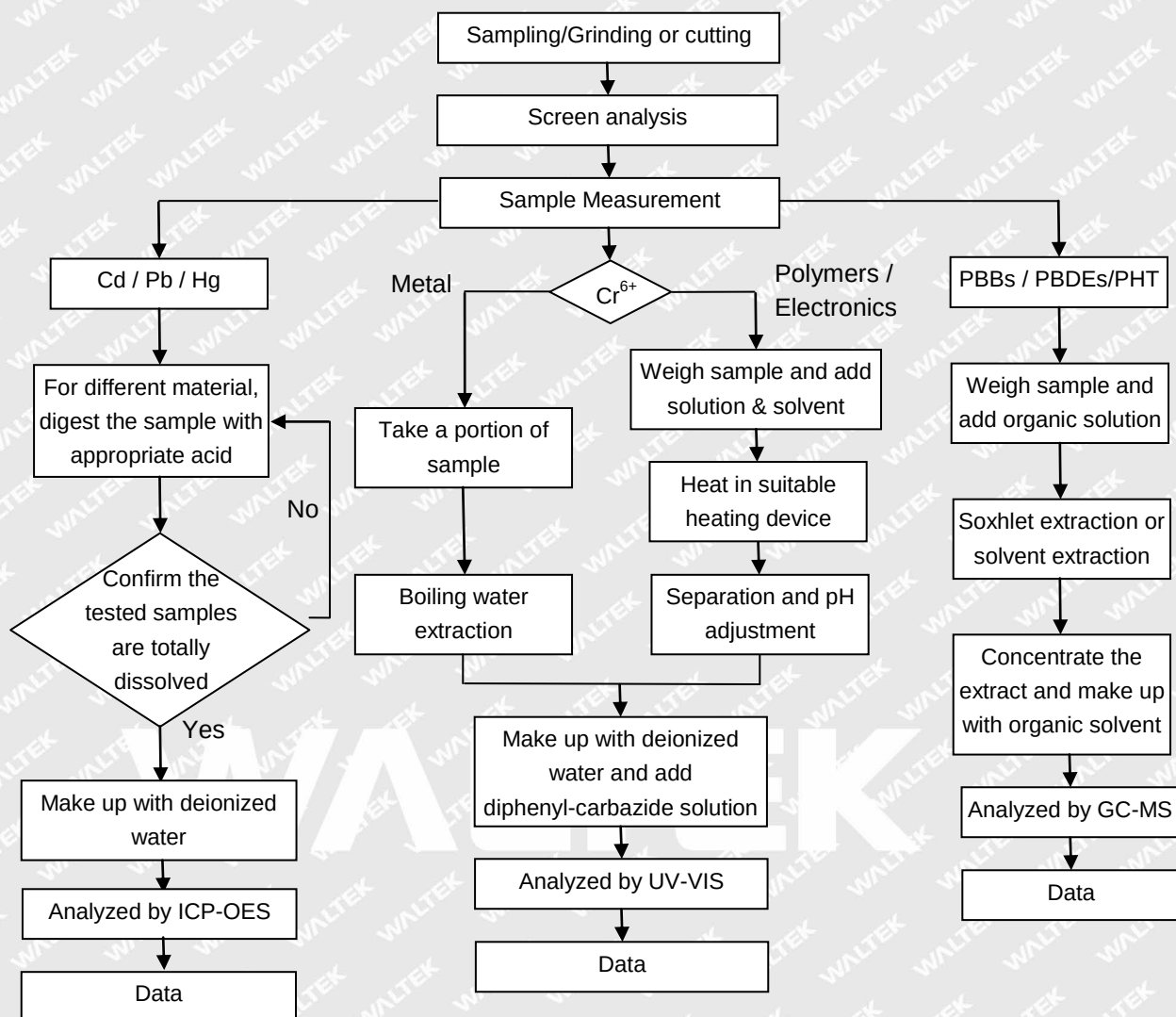
- (1) "<" = less than
- (2) mg/kg = milligram per kilogram= ppm
- (3) Abbreviation:
 "DBP" denotes Dibutyl phthalate, "BBP" denotes Benzyl butyl phthalate (BBP), "DEHP" denotes Bis(2-ethylhexyl)-phthalate, "DIBP" denotes Diisobutyl phthalate, "PHT" denotes Phthalates.
- (4) RoHS requirement

Restricted Substances	Limits
Dibutyl phthalate (DBP)	0.1% (1000 mg/kg)
Benzyl butyl phthalate (BBP)	0.1% (1000 mg/kg)
Di(2-ethylhexyl) phthalate (DEHP)	0.1% (1000 mg/kg)
Di-iso-butyl phthalate (DIBP)	0.1% (1000 mg/kg)

- (5) "△" = As client's requirement, the testing was conducted based on mixed components. Results are calculated by the minimum weight of mixed components.



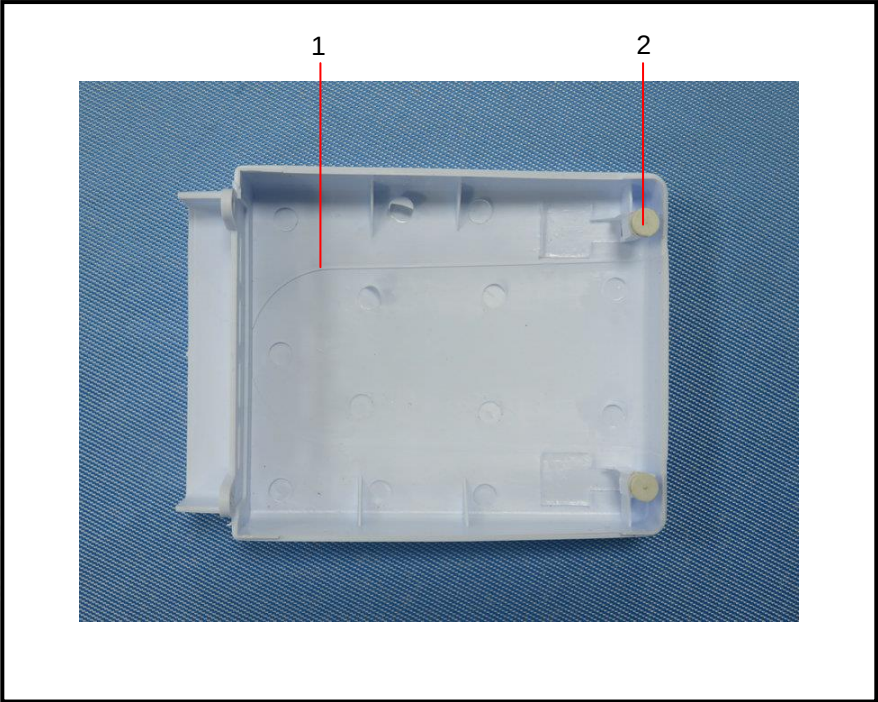
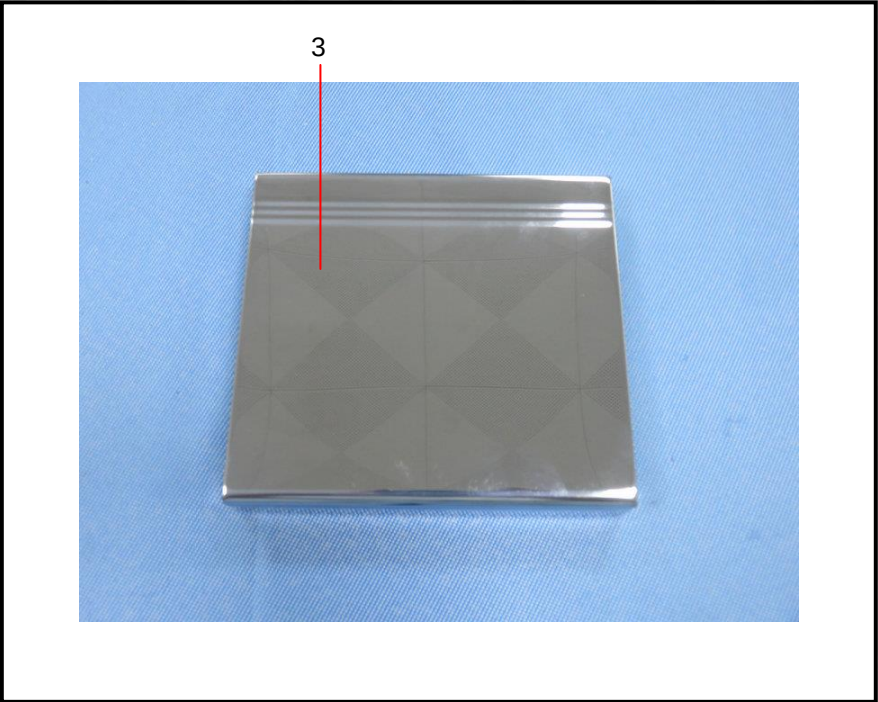
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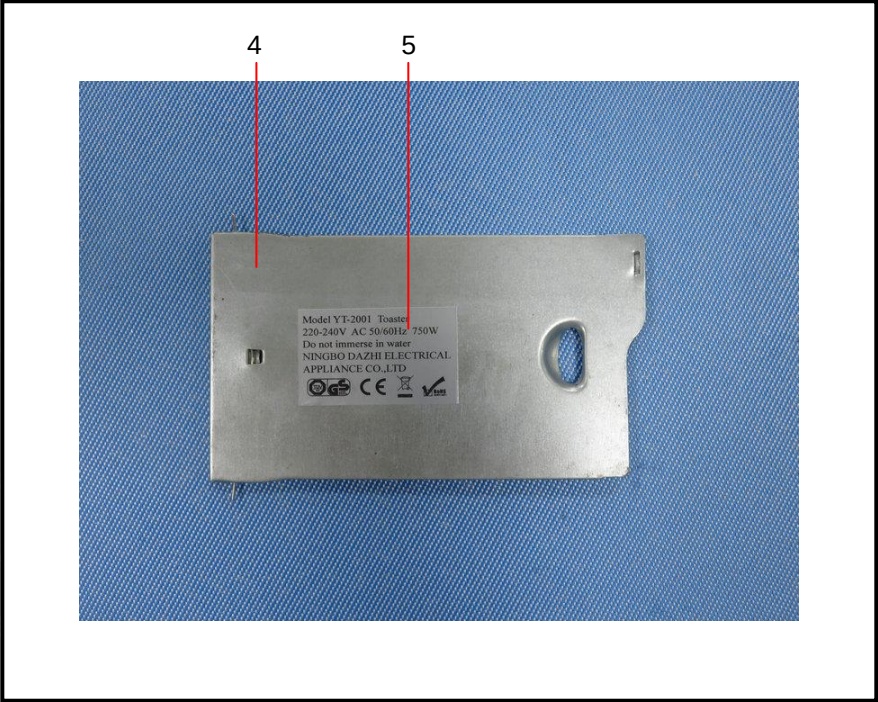
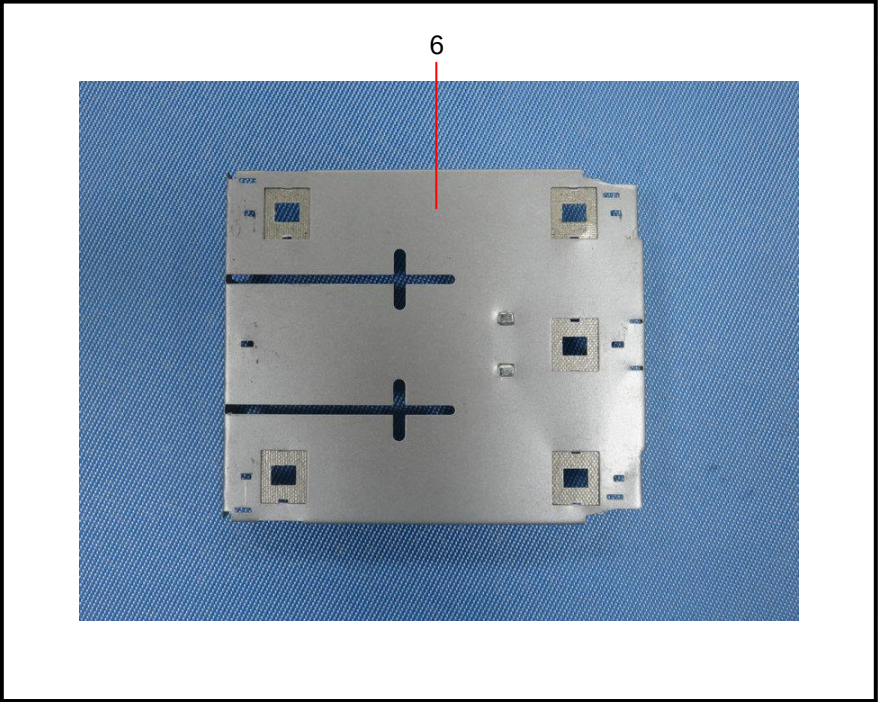


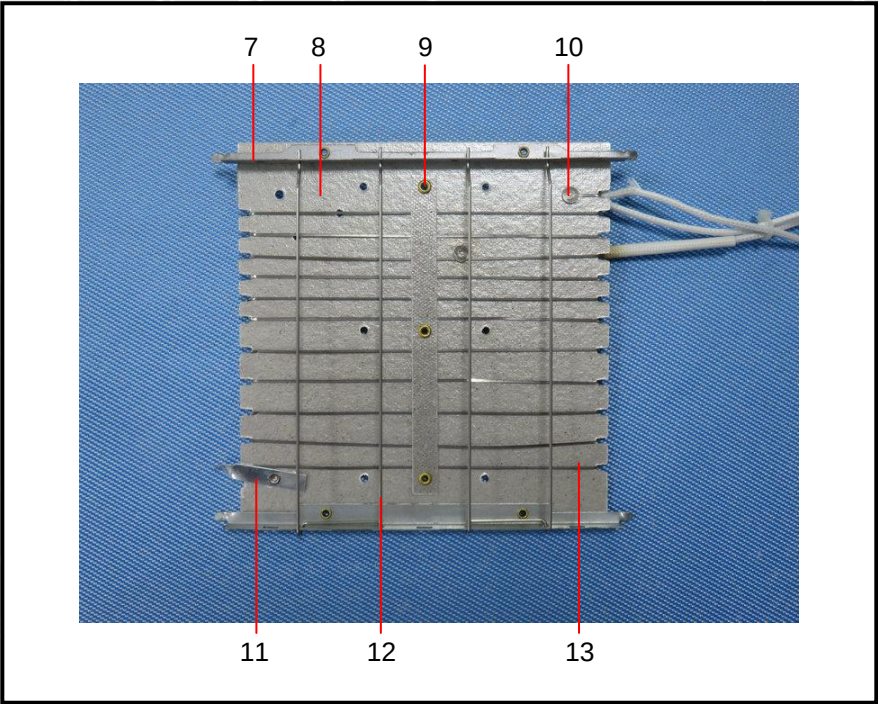
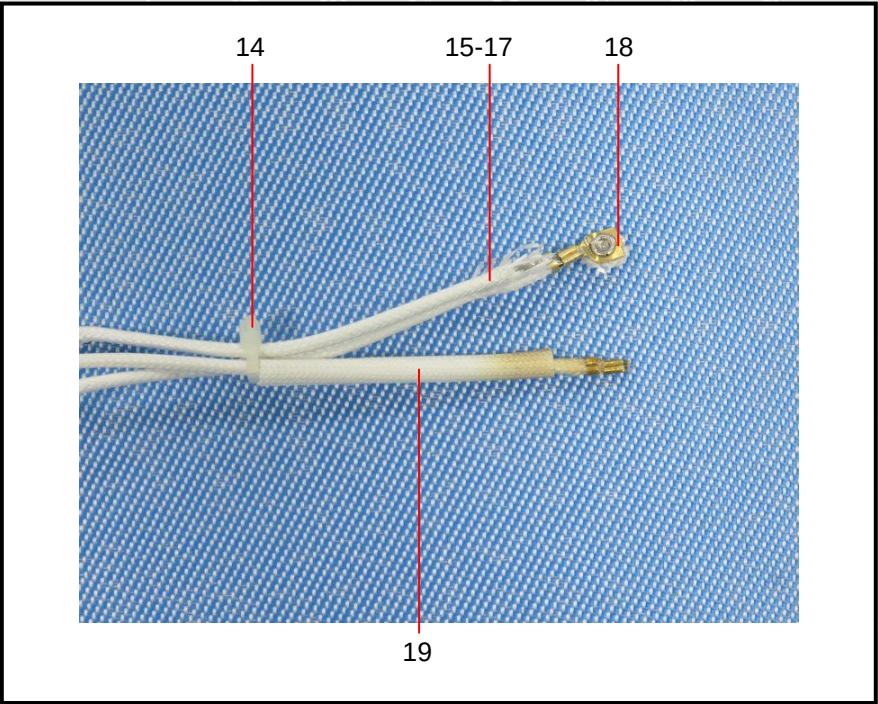


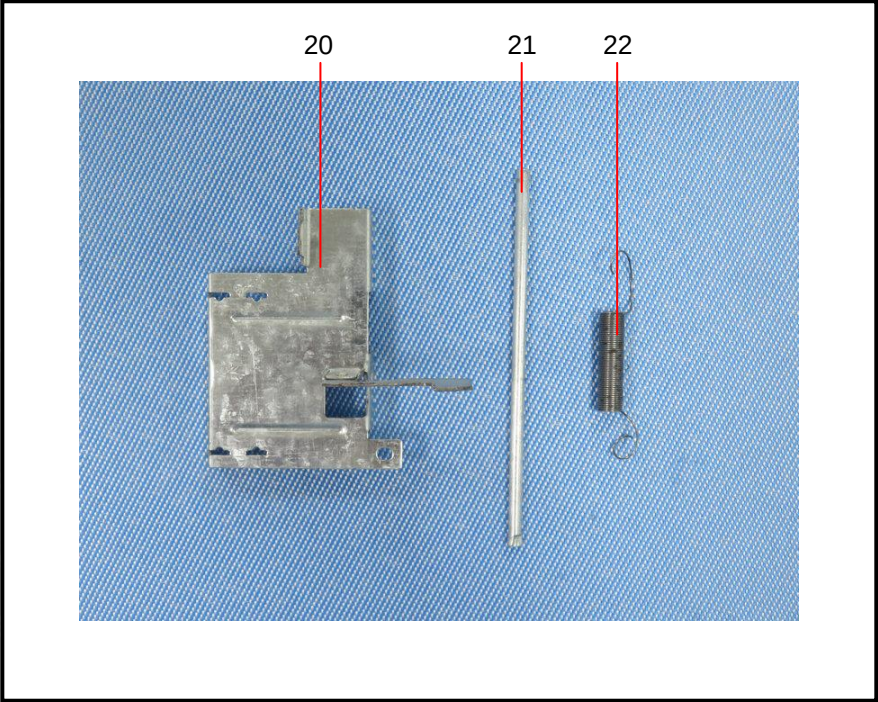
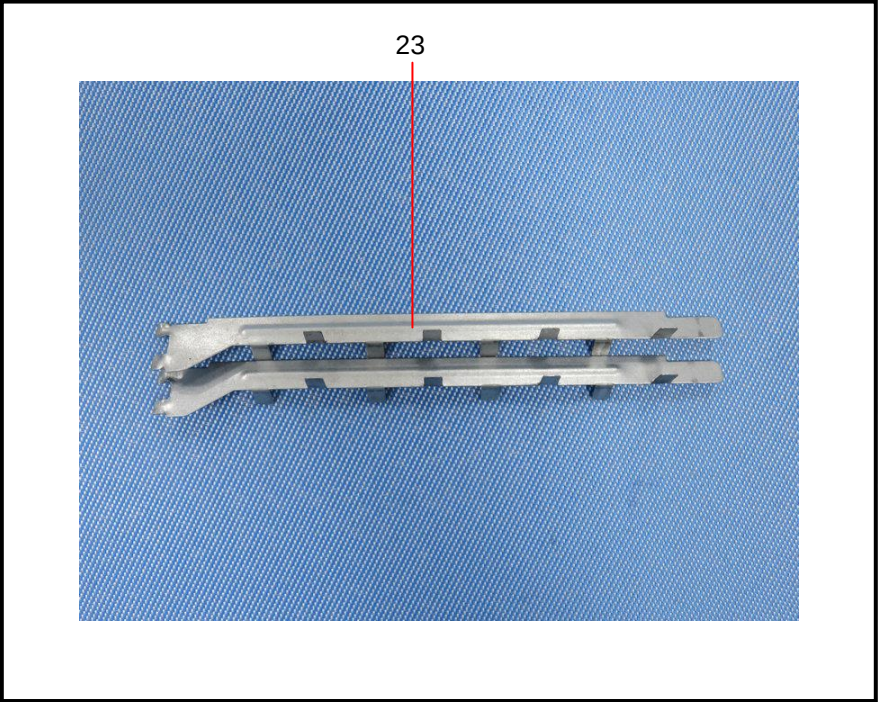
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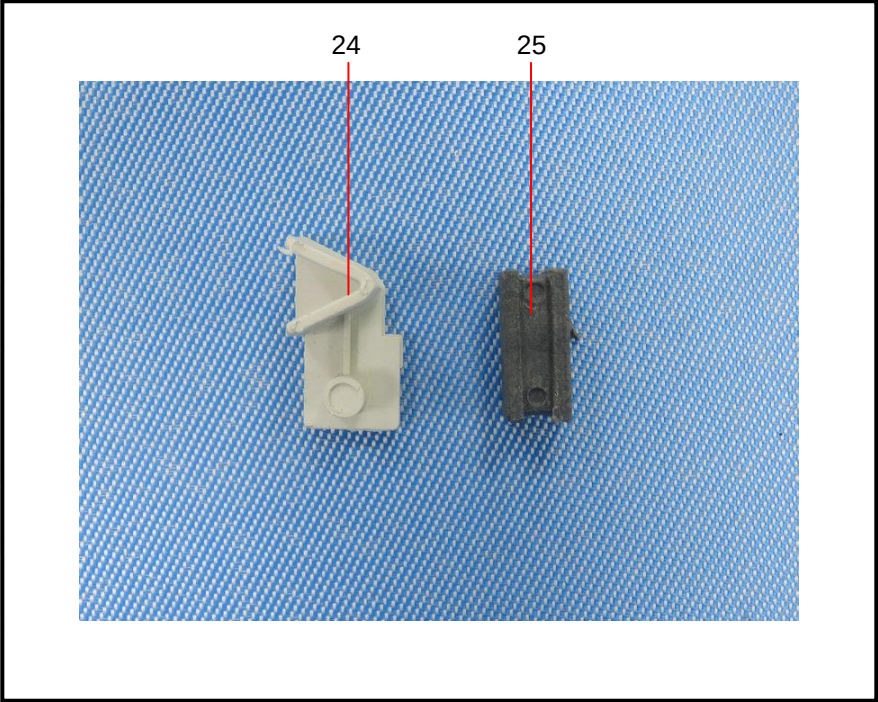
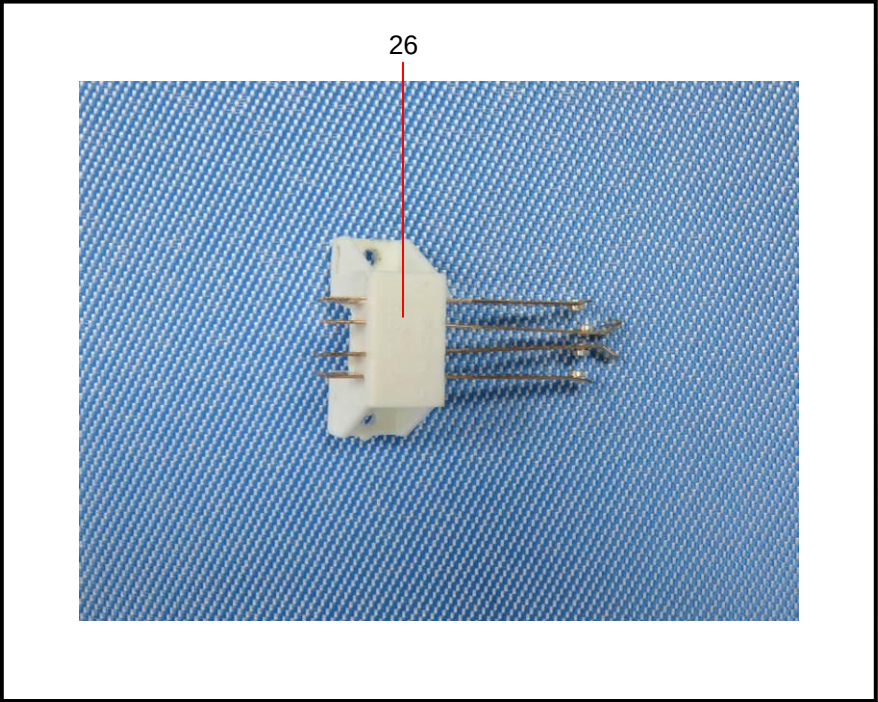
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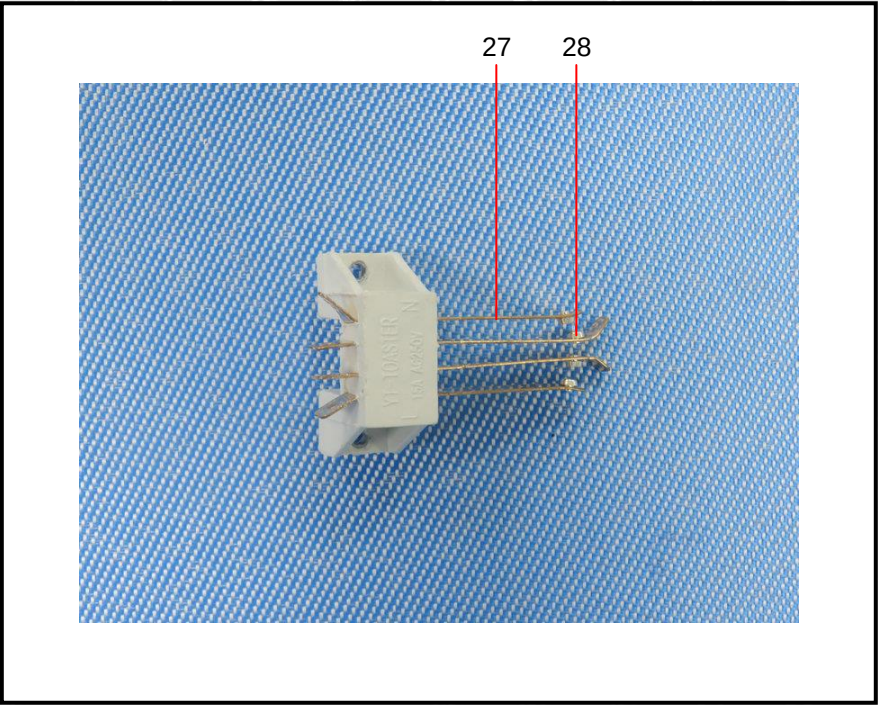
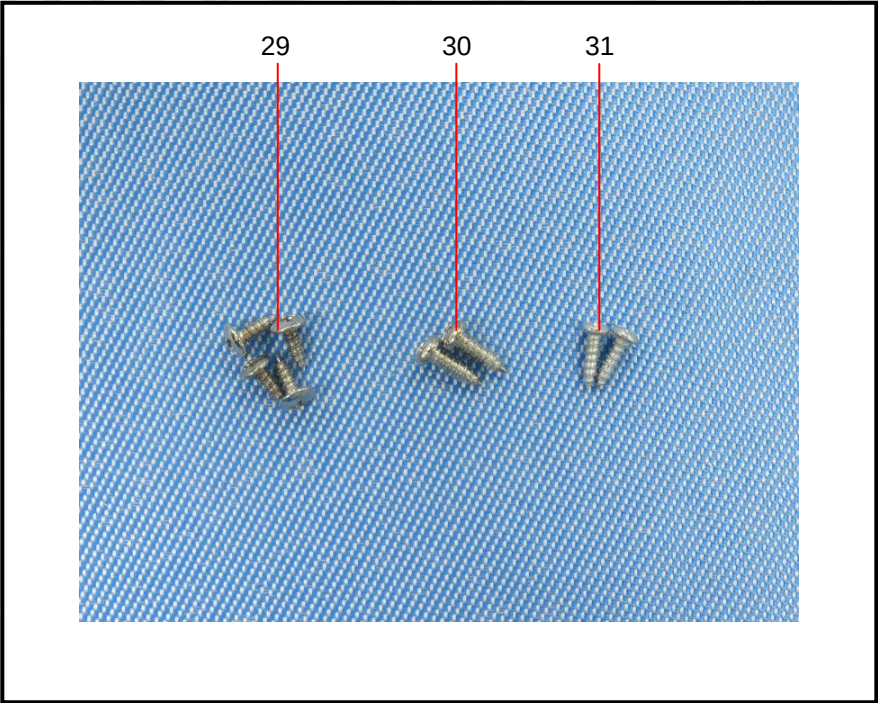


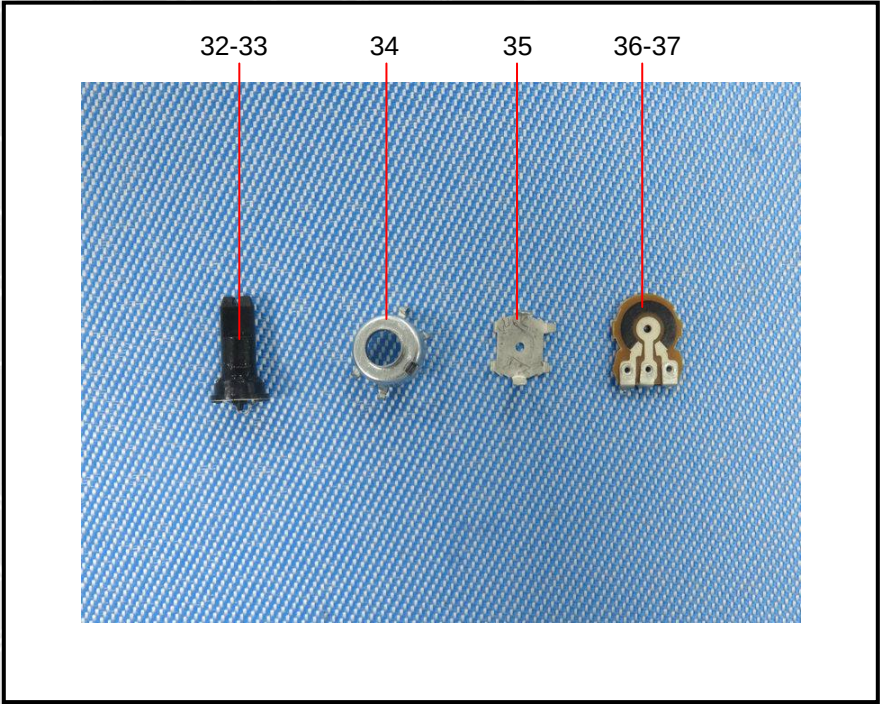
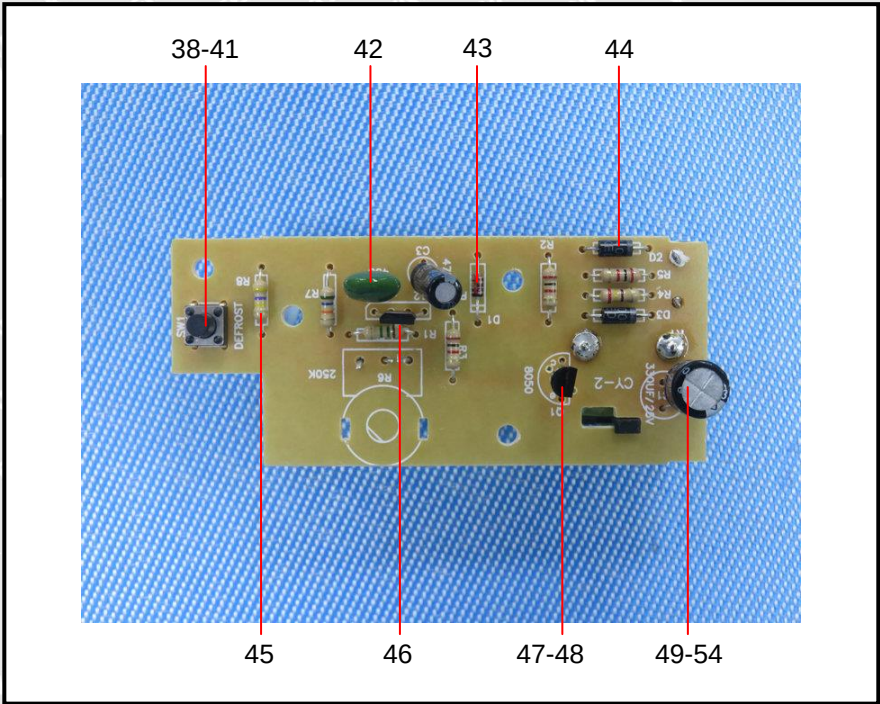


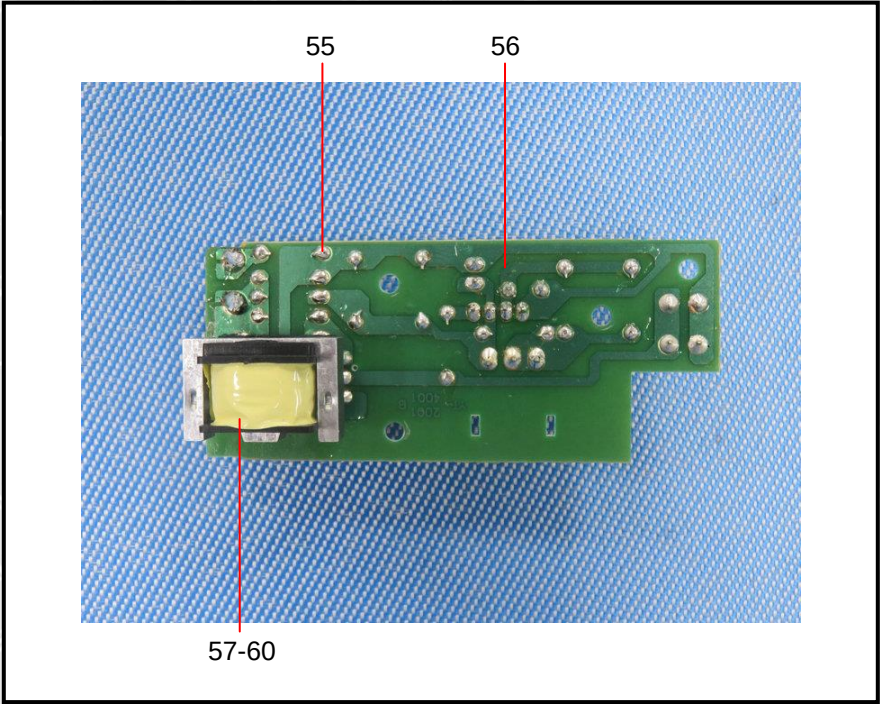
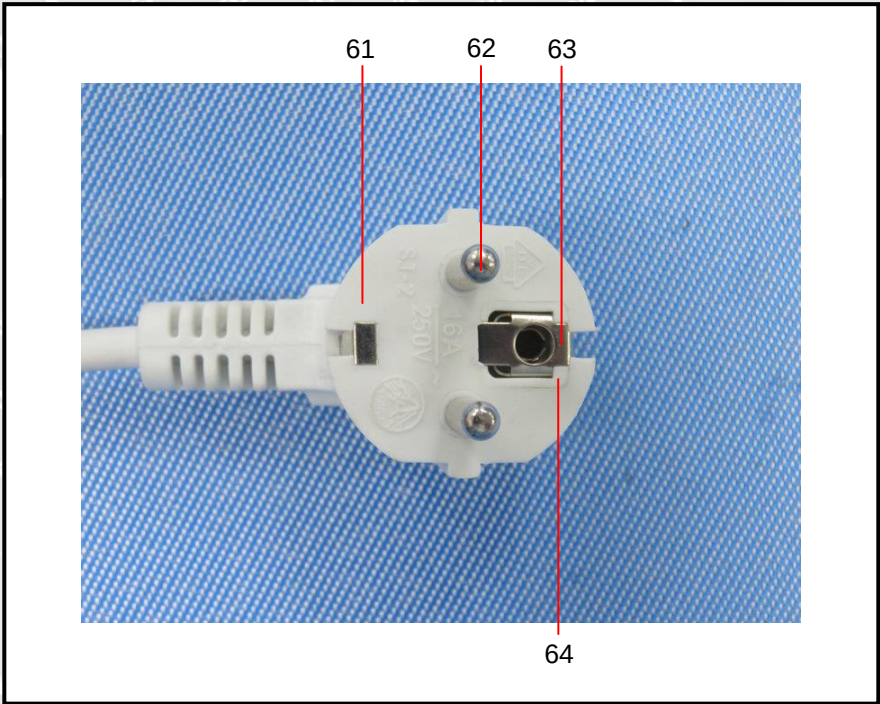






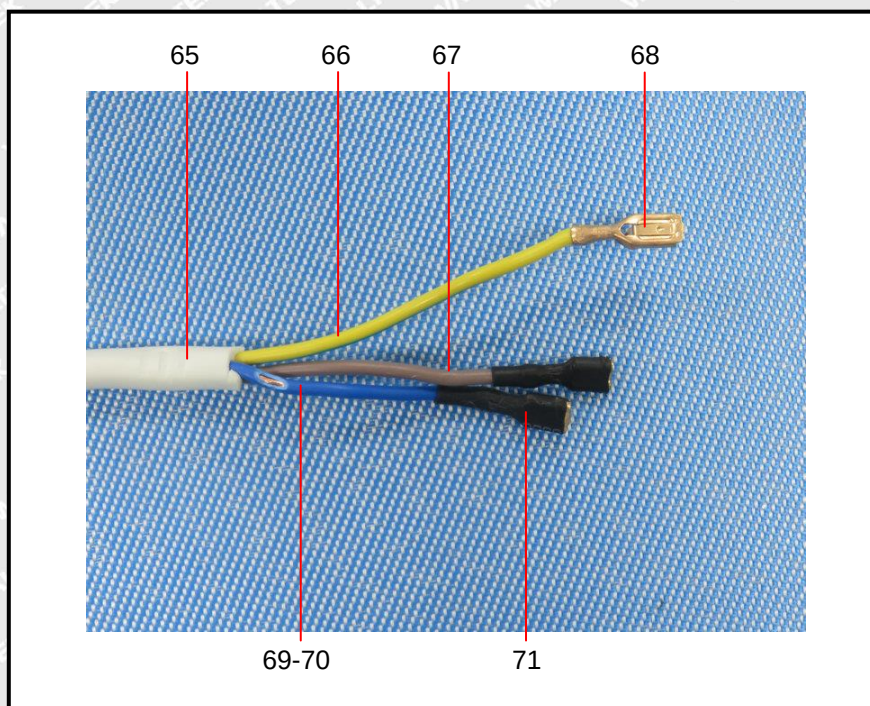








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