



中国认可
国际互认
检测
TESTING
CNAS L6478



TEST REPORT

Report No...... : WTF22F04078715A1C
Applicant..... : Mid Ocean Brands B.V.
Address..... : 7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong
Manufacturer..... : 116737
Sample Name..... : Wireless charger weatherstation
Sample Model..... : MO6665
Date of Receipt sample..... : 2022-04-24 & 2022-06-08
Testing period..... : 2022-04-24 to 2022-05-11 & 2022-06-08 to 2022-06-13
Date of Issue..... : 2022-06-16
Test Result..... : Refer to next page (s)

Prepared By:

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Signed for and on behalf of
Waltek Testing Group (Foshan) Co., Ltd.

Swing.Liang



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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.

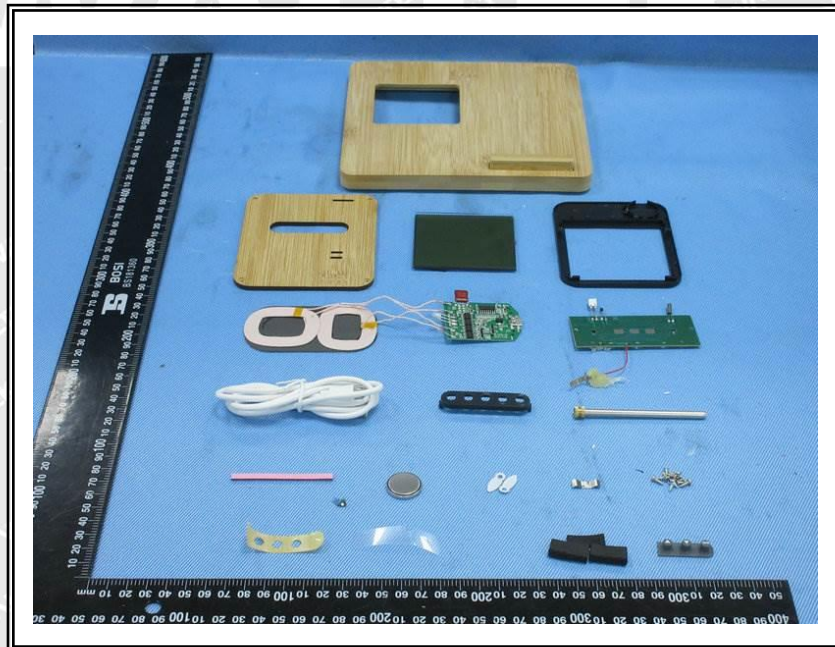
Test Conclusion : **Pass** (Based on the performed tests on the submitted samples, the results comply with the RoHS Directive 2011/65/EU and its amendment (EU) No. 2015/863)

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Sample Photo(s):



**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	Yellow wood shell	BL	BL	BL	BL	BL	NA
2	White plastic film	BL	BL	BL	BL	BL	NA
3	Black sponge adhesive tape	BL	BL	BL	BL	BL	NA
4	Transparent glass plate	BL	BL	BL	BL	BL	NA
5	Black plastic shell	BL	BL	BL	BL	IN	PBBs : ND PBDEs : 168
6	Pink-black soft plastic tape	BL	BL	BL	BL	BL	NA
7	Grey soft plastic button	BL	BL	BL	BL	BL	NA
8	Transparent plastic film	BL	BL	BL	BL	BL	NA
9	Yellow plastic adhesive tape	BL	BL	BL	BL	BL	NA
10	Transparent film	BL	BL	BL	BL	BL	NA
11	White coating	BL	BL	BL	BL	BL	NA
12	Silvery metal sheet	BL	BL	BL	BL	BL	NA
13	Silvery metal sheet	BL	BL	BL	IN	BL	Cr ⁶⁺ : Negative
14	Silvery metal screw	BL	BL	BL	BL	BL	NA
15	Coppery metal nut	BL	BL	BL	BL	BL	NA
16	Silvery metal strip	BL	BL	BL	BL	BL	NA
17	Red plastic wire covering	BL	BL	BL	BL	BL	NA
18	Coppery metal wire	BL	BL	BL	BL	BL	NA
19	Solder	BL	BL	BL	BL	BL	NA



Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
20	Yellow-transparent glue	BL	BL	BL	BL	BL	NA
21	White plastic wire covering	BL	BL	BL	BL	BL	NA
22	Pink plastic wire covering	BL	BL	BL	BL	BL	NA
23	Black plastic wire covering	BL	BL	BL	BL	BL	NA
24	White plastic core of plug	BL	BL	BL	BL	BL	NA
25	Coppery metal pin of plug	BL	BL	BL	BL	BL	NA
26	Silvery metal shell of plug	BL	BL	BL	BL	BL	NA
27	White soft plastic jacket of plug	BL	BL	BL	BL	BL	NA
28	Green plastic wire covering	BL	BL	BL	BL	BL	NA
29	White plastic wire jacket	BL	BL	BL	BL	BL	NA
30	White soft plastic jacket of plug	BL	BL	BL	BL	BL	NA
31	Coppery metal wire	BL	BL	BL	BL	BL	NA
32	Black plastic core of plug	BL	BL	BL	BL	BL	NA
33	Silvery metal pin of plug	BL	BL	BL	IN	BL	Cr ⁶⁺ : Negative
34	White paper	BL	BL	BL	BL	BL	NA
35	White fabric wire covering	BL	BL	BL	BL	BL	NA
36	Coppery metal wire	BL	BL	BL	BL	BL	NA
37	Black magnetic sheet	BL	BL	BL	BL	BL	NA
38	Yellow plastic film	BL	BL	BL	BL	BL	NA
39	Red body of capacitor	BL	BL	BL	BL	BL	NA



Part No.	Part Description	Result of XRF					Result of Wet Chemical Testing (mg/kg)
		Cd	Pb	Hg	Cr	Br	
40	Chip IC	BL	BL	BL	BL	BL	NA
41	White body of LED	BL	BL	BL	BL	BL	NA
42	Silvery metal pin of LED	BL	BL	BL	BL	BL	NA
43	Chip IC	BL	BL	BL	BL	BL	NA
44	Chip IC	BL	BL	BL	BL	BL	NA
45	Chip glass diode	BL	*OL	BL	BL	BL	NA
46	Solder	BL	BL	BL	BL	BL	NA
47	Chip audion	BL	BL	BL	BL	BL	NA
48	Chip capacitor	BL	BL	BL	BL	BL	NA
49	Green PCB	BL	BL	BL	BL	BL	NA
50	White body of resistor	BL	BL	BL	BL	BL	NA
51	Black body of resistor	BL	BL	BL	BL	BL	NA
52	Silvery body of crystal oscillator	BL	BL	BL	BL	BL	NA
53	Silvery metal pin of crystal oscillator	BL	BL	BL	BL	BL	NA
54	Green PCB	BL	BL	BL	BL	BL	NA
55	Chip IC	BL	BL	BL	BL	BL	NA
56	Chip resistor	BL	OL	BL	BL	BL	*Pb : 1.22×10^3
57	Chip capacitor	BL	BL	BL	BL	BL	NA
58	Solder	BL	IN	BL	BL	BL	Pb :ND
59	Silvery metal sheet	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	
60	Grey semi-transparent plastic sheet	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 ≤ (70-3σ) < IN < (130+3σ) ≤ OL	BL ≤ (70-3σ) < IN < (130+3σ) ≤ OL	LOD < IN < (150+3σ) ≤ OL
Pb	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (500-3σ) < IN < (1500+3σ) ≤ OL
Hg	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (500-3σ) < IN < (1500+3σ) ≤ OL
Cr	BL ≤ (700-3σ) < IN	BL ≤ (700-3σ) < IN	BL ≤ (500-3σ) < IN
Br	BL ≤ (300-3σ) < IN	--	BL ≤ (250-3σ) < 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.
- (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, μg/cm²= 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	μg/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 0.1μg/cm².

- (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)



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- (9) According to IEC 62321-7-1:2015, determined of Cr^{6+} on metal sample by boiling water extraction test method, and result is shown as Positive/Negative.

Boiling water extraction:

Negative = Absence of Cr^{6+} coating, the detected concentration in boiling water extraction solution is less than $0.10\mu\text{g}/\text{cm}^2$.

Positive = Presence of Cr^{6+} 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 Cr^{6+} 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 the glass or ceramic material of that electronic component which is exempted by Directive 2011/65/EU ANNEX III.

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2. Phthalates:

Serial No.	Part No.	Result (mg/kg)			
		DBP	BBP	DEHP	DIBP
T01	1	<50	<50	<50	<50
T02	2	<50	<50	<50	<50
T03	3	<50	<50	<50	<50
T04	4+37+39+40+43 [△]	<50	<50	<50	<50
T05	5+24+32 [△]	<50	<50	<50	<50
T06	6	<50	<50	<50	<50
T07	7	<50	<50	<50	<50
T08	8	<50	<50	<50	<50
T09	9	<50	<50	<50	<50
T10	10	<50	<50	96	<50
T11	11	<50	<50	<50	<50
T12	17	<50	<50	<50	<50
T13	20	<50	<50	<50	<50
T14	21	<50	<50	<50	<50
T15	22	<50	<50	<50	<50
T16	23	<50	<50	<50	<50
T17	27	<50	<50	<50	<50
T18	28	<50	<50	<50	<50
T19	29	<50	<50	<50	<50
T20	30	<50	<50	111	<50
T21	34	<50	<50	<50	<50
T22	35	<50	<50	<50	<50
T23	38	<50	<50	<50	<50
T24	41	<50	<50	<50	<50
T25	44+45+47+48+50 [△]	<50	<50	<50	<50
T26	49+54 [△]	<50	<50	<50	<50
T27	51+52+55+56+57 [△]	<50	<50	<50	<50
T28	60	<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.

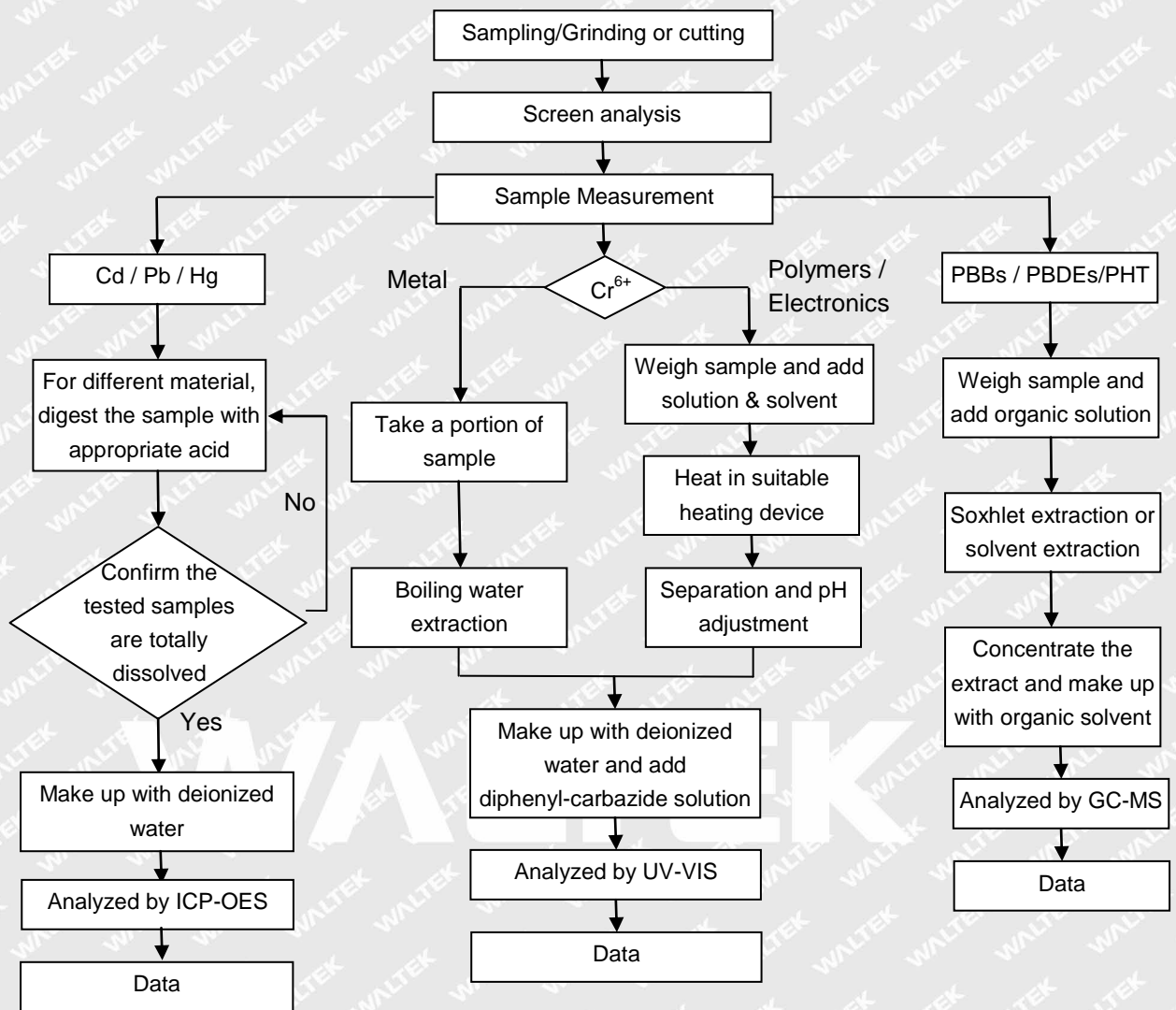
(4) RoHS requirement

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.



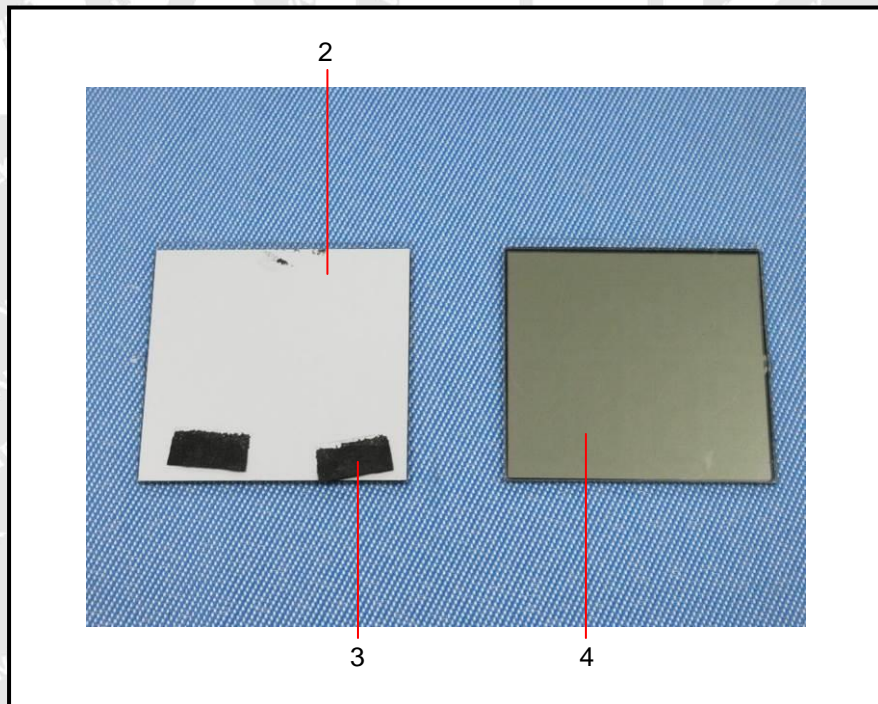
Measurement Flowchart:

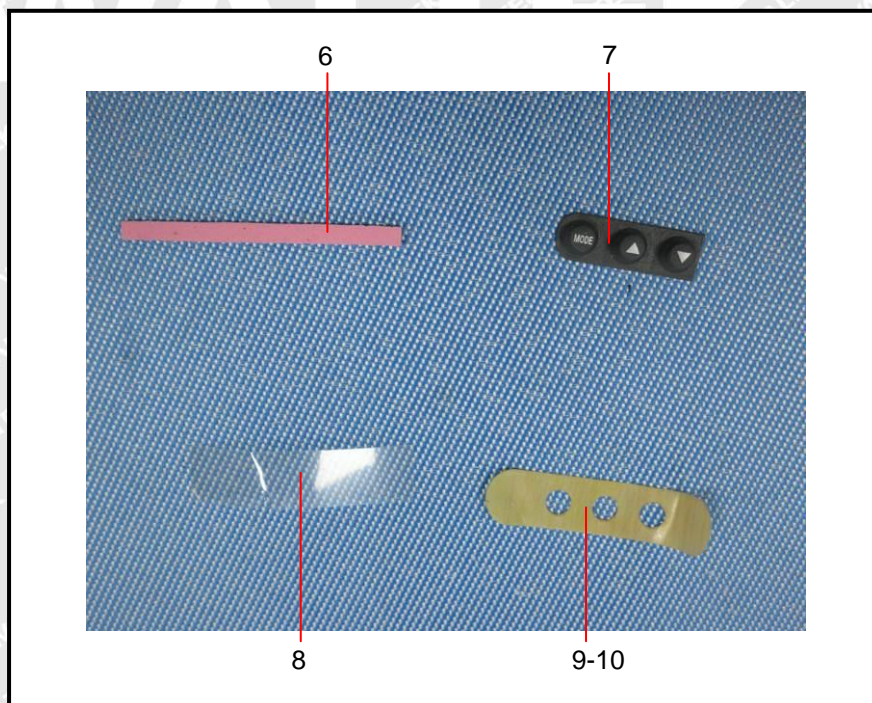
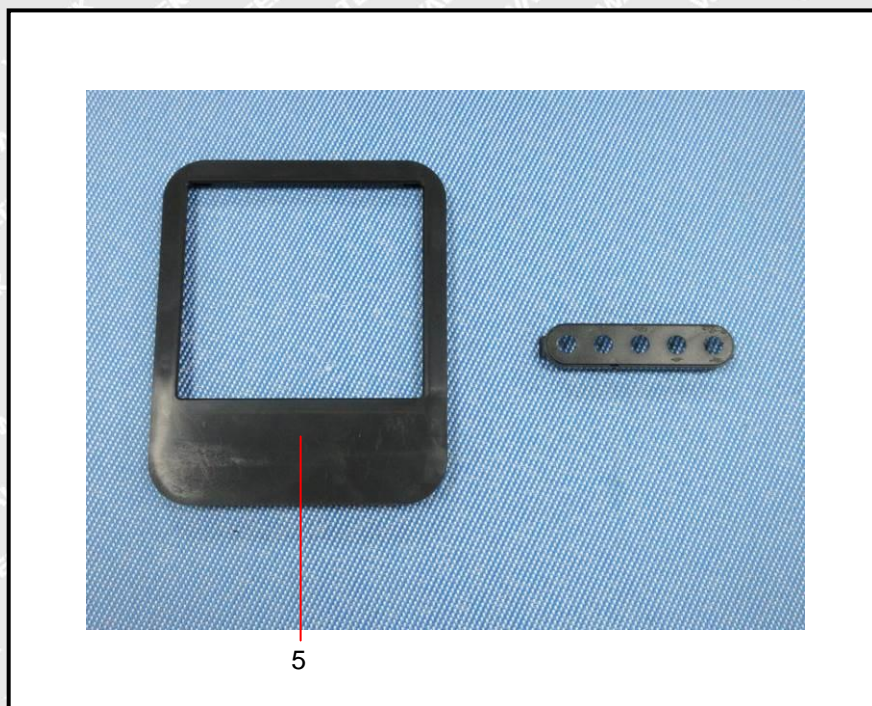


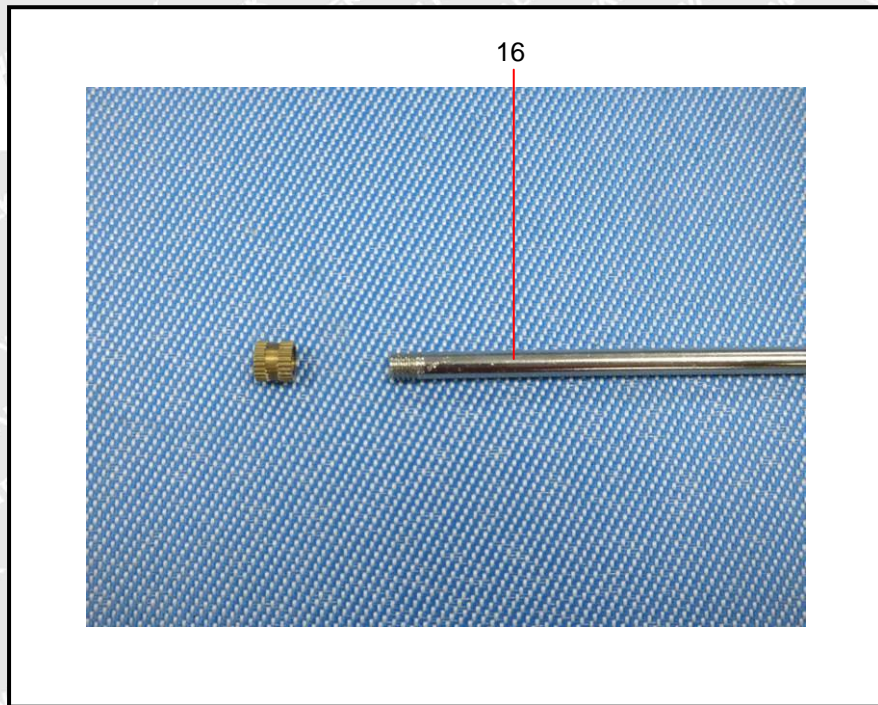
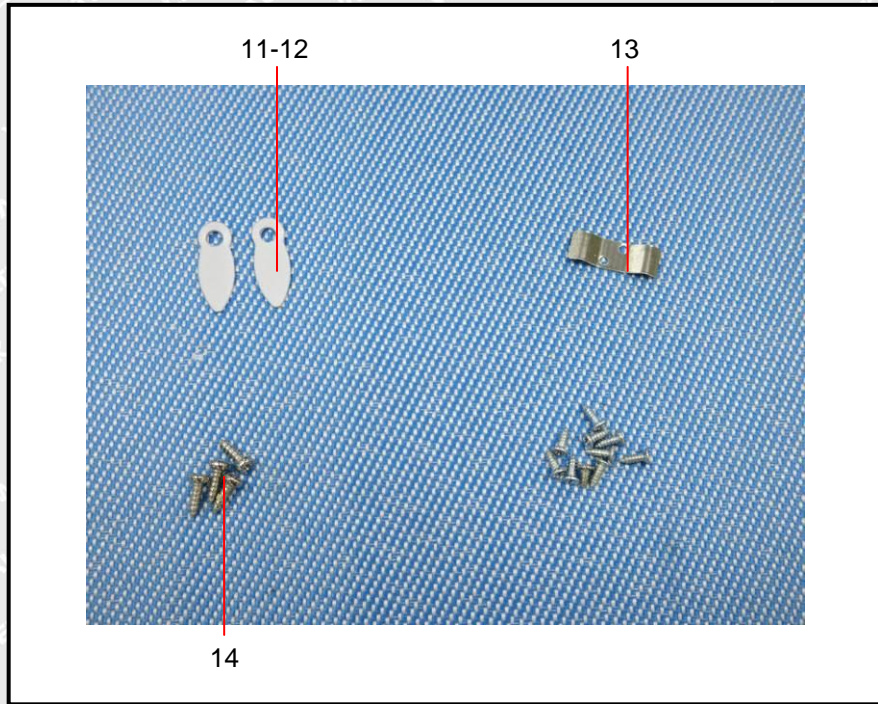


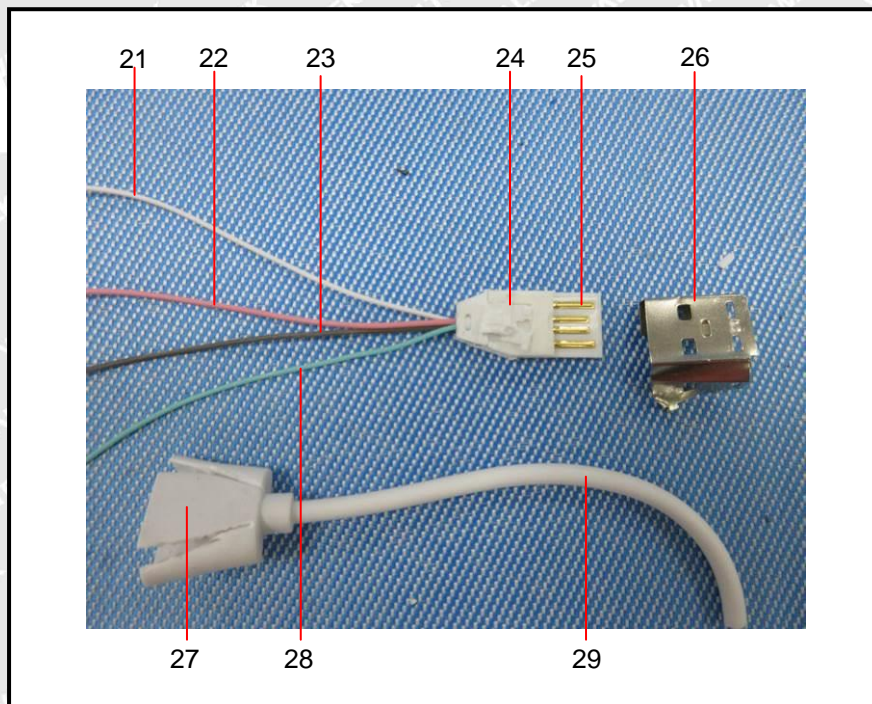
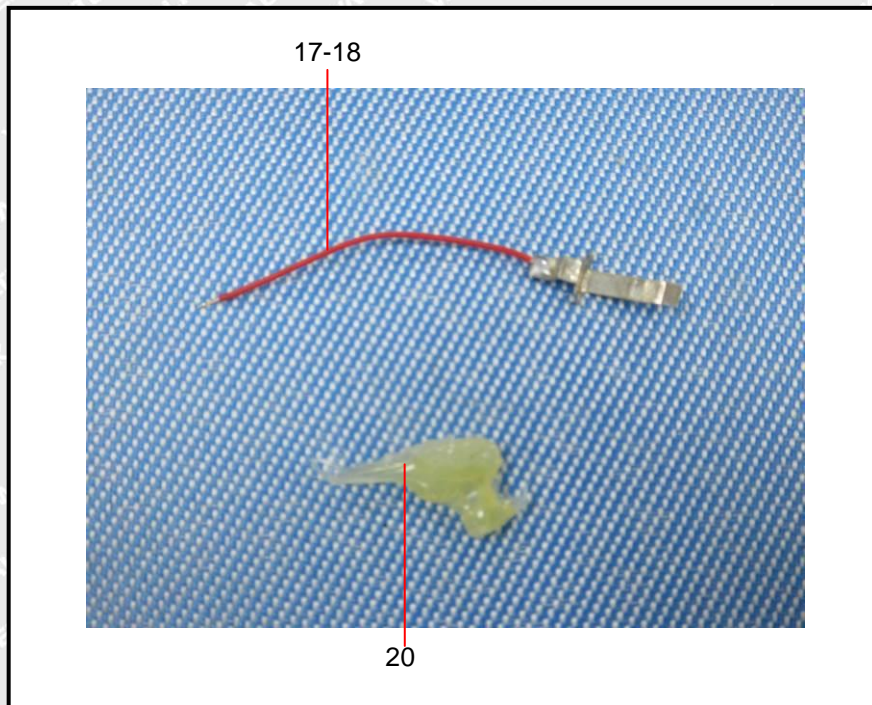
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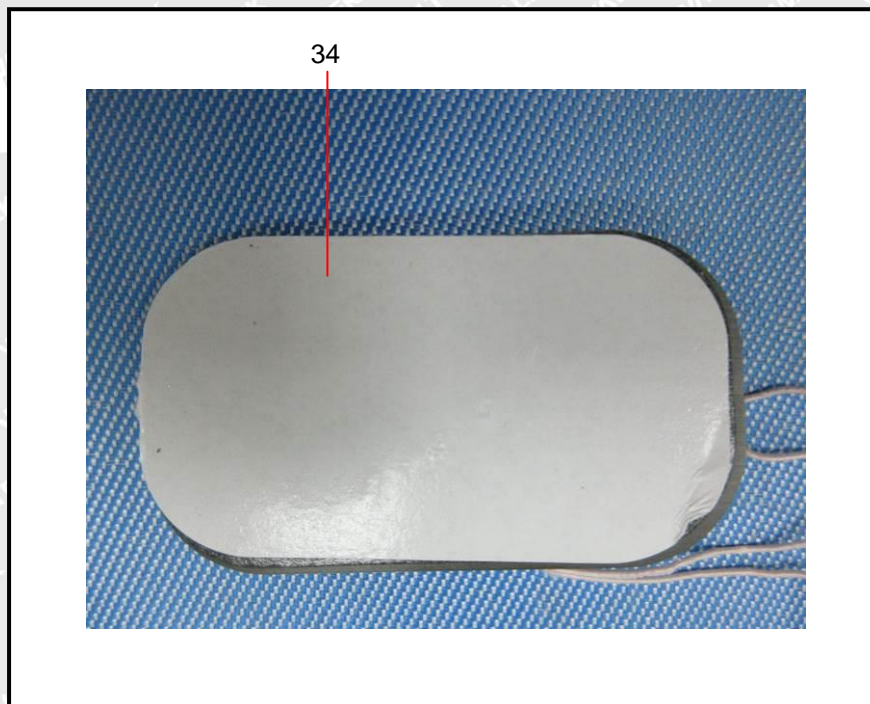
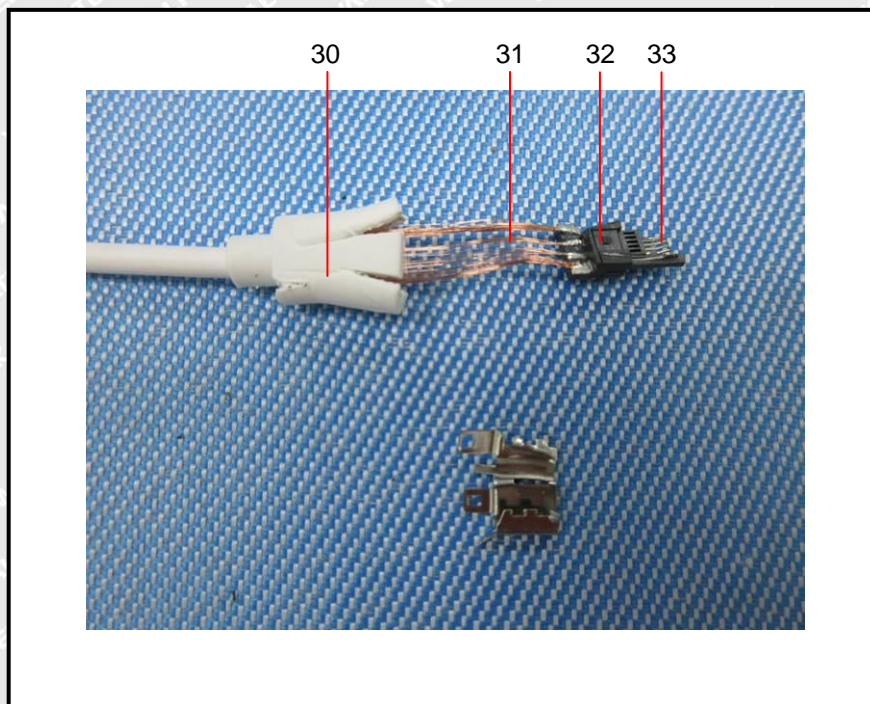
Photograph(s) of parts tested:

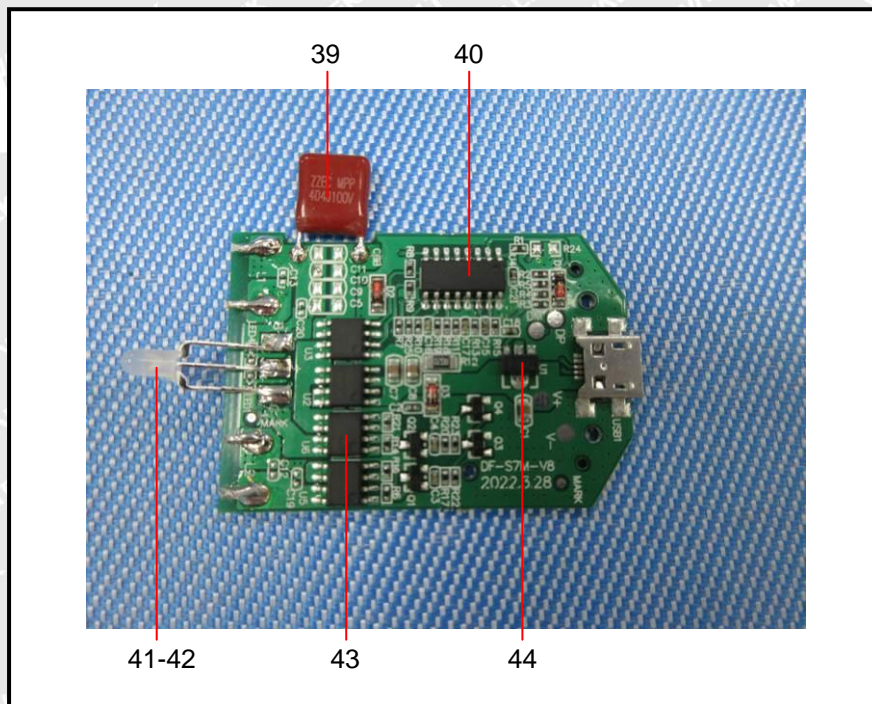
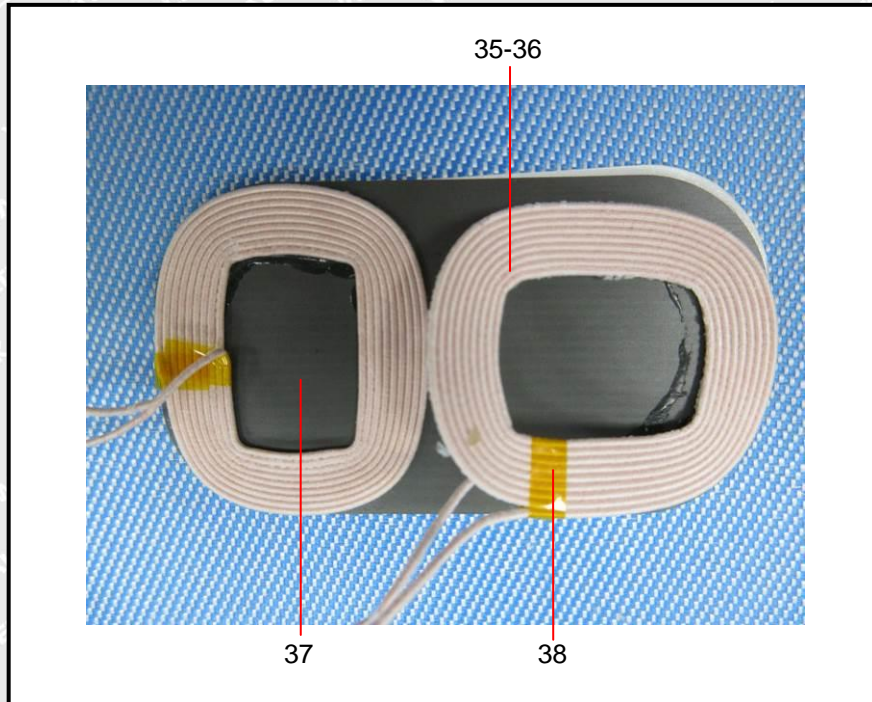


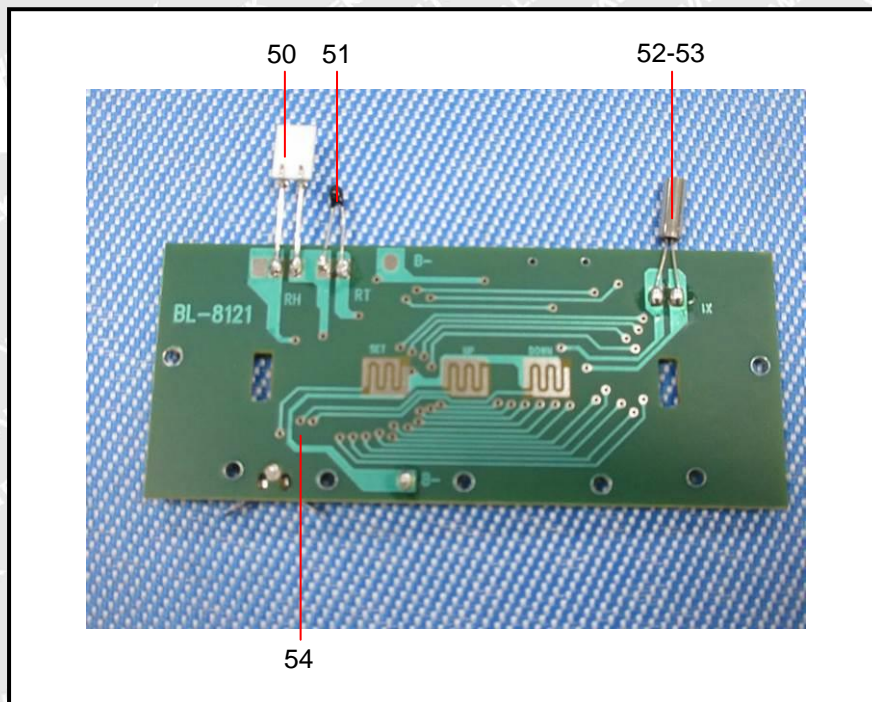
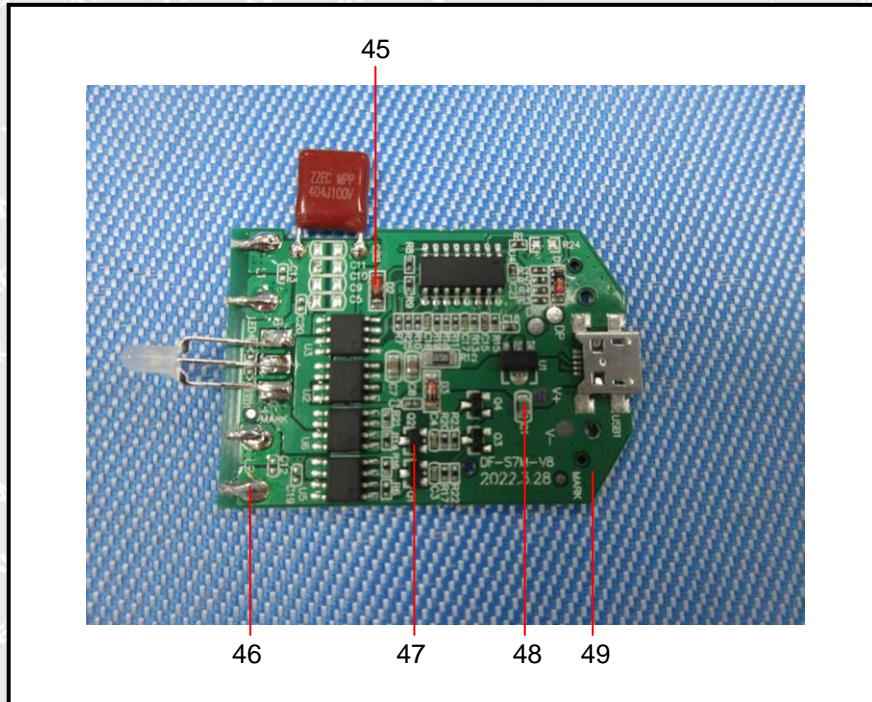


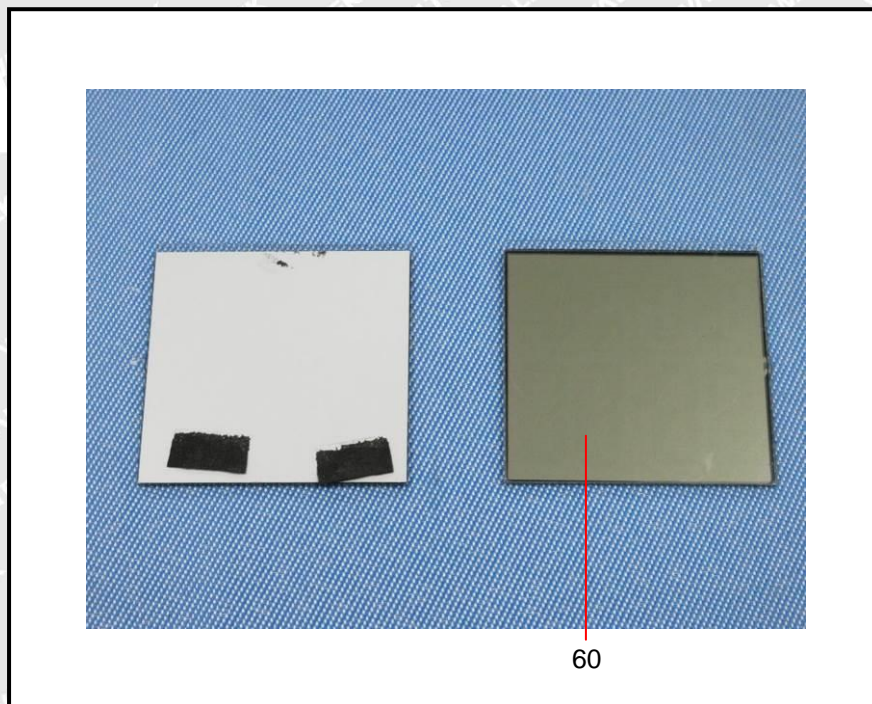
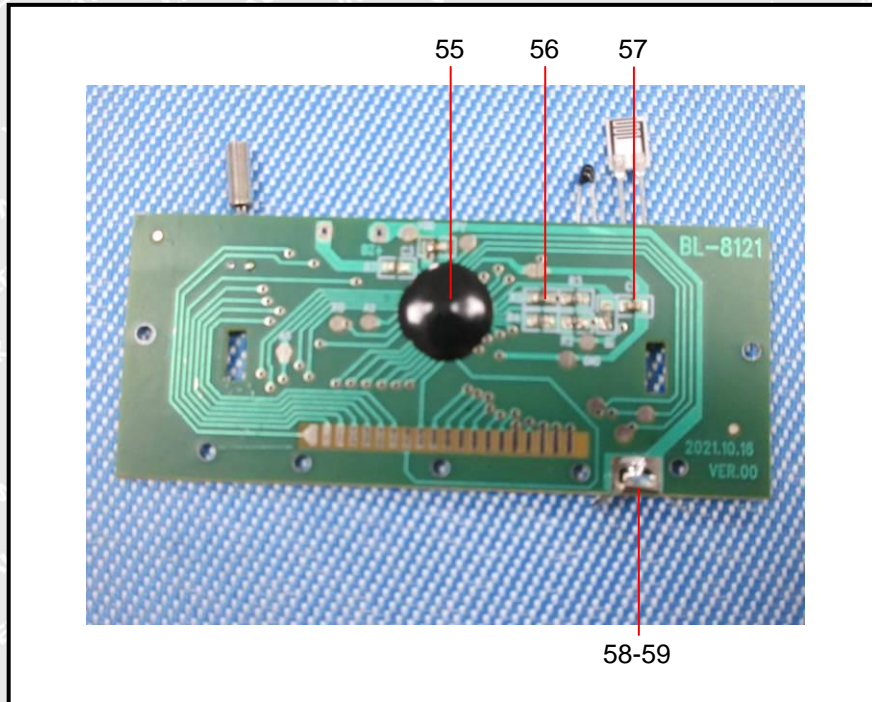


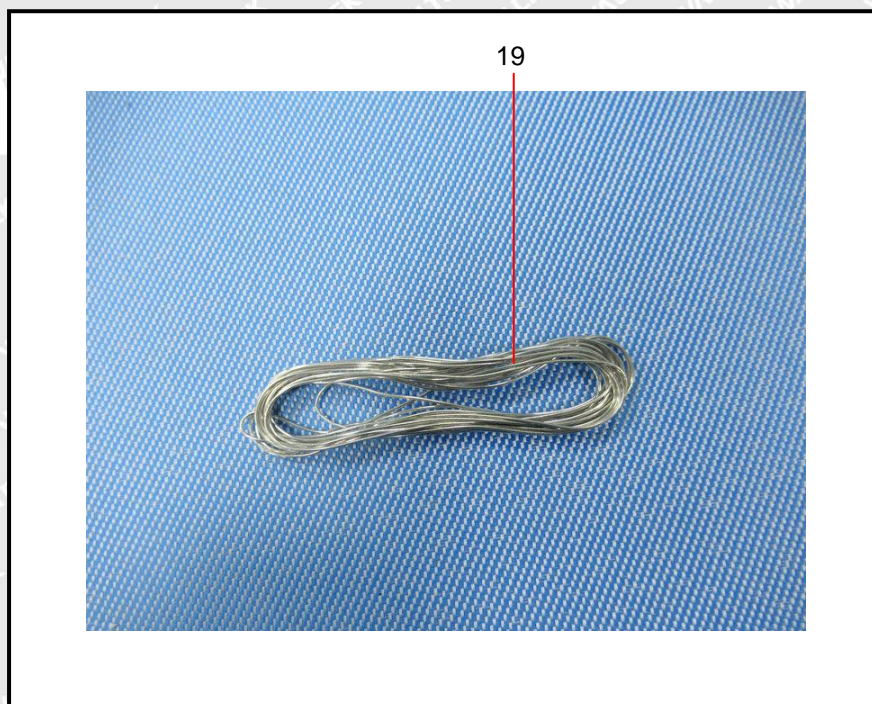
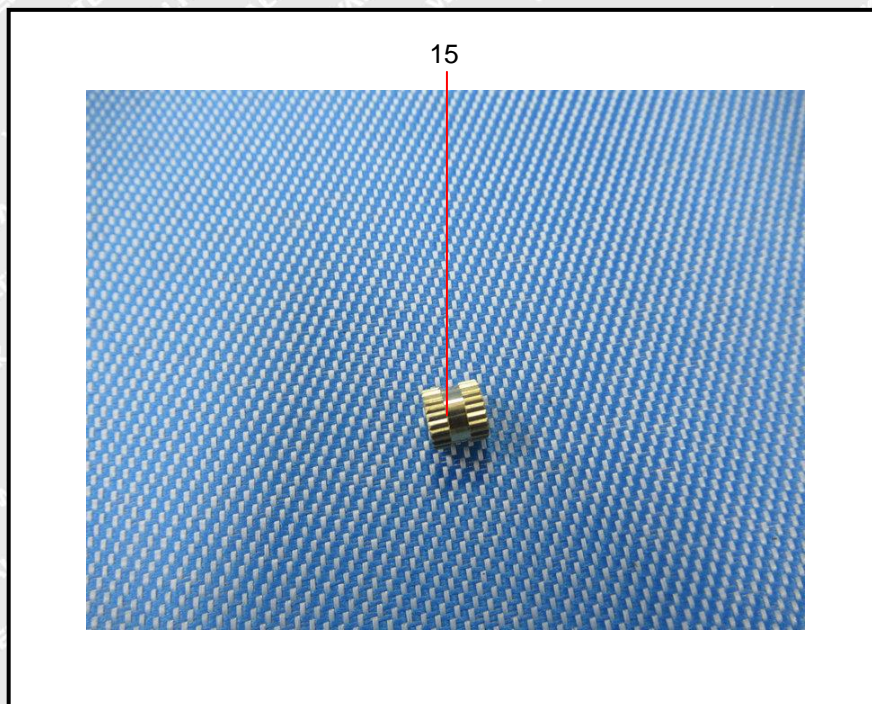














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