

## XRF Screening And Chemical Confirmation Test Report

Applicant:

Sample Description:

The following submitted sample(s) said to be:

Item Name : **Battery Operated Wine Opener**  
Model No. : KB1-60C,KB1-60E,KB1-60I,  
KB1-60K,KB1-60L,KB1-60N,TW-113  
Date of Sample Received : Jul 03, 2018 & Jul 18, 2018 & Jul 20, 2018  
Testing Period : Jul 03, 2018 to Jul 26, 2018

Tests conducted:

As requested by the applicant, refer to following page(s) for details.

Conclusion:

Tested Sample	Standard	Result
Tested components of submitted sample	Screening by XRF spectroscopy and chemical confirmation test for RoHS Directive 2011/65/EU and (EU) 2015/863	Pass

Authorized by:

For Intertek Testing Services Shenzhen Ltd. Guangzhou Branch:


Silva Zhou  
Supervisor



## XRF Screening And Chemical Confirmation Test Report

### Certain Hazardous Substance in Electrical and Electronic Equipment

Cadmium (Cd), Lead (Pb), Mercury (Hg), Chromium (Cr) and Bromine (Br) content were measured with reference to IEC 62321-3-1 Edition 1.0: 2013 by XRF spectroscopy and chemical confirmation test for RoHS restricted substances. And Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs) and Phthalates content were determined by Gas Chromatographic-Mass Spectrometric (GC-MS).

(A) Results:

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(1)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			
(2)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(3)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(4)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	ND
	BBP			ND
	DBP			ND
DIBP	ND			



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(5)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(6)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(7)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(8)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(9)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(10)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(11)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	ND
	BBP			ND
	DBP			126 mg/kg
DIBP	ND			
(12)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(13)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(14)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(15)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(16)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(17)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(18)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			
(19)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			
(20)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(21)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			
(22)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	ND
	BBP			ND
	DBP			ND
DIBP	ND			
(23)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP			
	DBP			
DIBP				
(24)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP			
	DBP			
DIBP				



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(25)	Cd	ND	NA	Cr <sup>6+</sup> : Negative
	Pb	ND		
	Hg	ND		
	Cr	Inconclusive		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(26)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(27)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(28)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(29)	Cd	ND	NA	Pb: 32860mg/kg <sup>#</sup>
	Pb	>1300mg/kg		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(30)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	ND
	BBP			ND
	DBP			ND
DIBP	ND			
(31)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(32)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(33)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(34)	Cd	ND	NA	Cr <sup>6+</sup> : Negative
	Pb	ND		
	Hg	ND		
	Cr	Inconclusive		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(35a)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	ND
	BBP			ND
	DBP			ND
DIBP	ND			
(35b)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(36)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	ND
	BBP			ND
	DBP			ND
DIBP	ND			
(37a)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	ND
	BBP			ND
	DBP			ND
DIBP	ND			
(37b)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(38)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP			
	DBP			
DIBP				



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(39)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(40)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(41)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(42)	Cd	ND	NA	Cr <sup>6+</sup> : Negative
	Pb	ND		
	Hg	ND		
	Cr	Inconclusive		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(43)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(44)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(45)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(46)	Cd	ND	NA	Cr <sup>6+</sup> : Negative
	Pb	ND		
	Hg	ND		
	Cr	Inconclusive		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(47)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(48)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			
(49)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	ND
	BBP			ND
	DBP			ND
DIBP	ND			
(50)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	ND
	BBP			ND
	DBP			ND
DIBP	ND			



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(51)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	ND
	BBP			ND
	DBP			ND
DIBP	ND			
(52)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(53)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	ND
	BBP			ND
	DBP			ND
DIBP	ND			
(54)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(55)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(56)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(57)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	ND
	BBP			ND
	DBP			ND
DIBP	ND			
(58)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(59)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(60)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			
(61)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(62)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(63)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(64)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(65)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(66)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	166 mg/kg
	BBP			ND
	DBP			ND
DIBP	ND			



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(67)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	170 mg/kg
	BBP			ND
	DBP			ND
DIBP	151 mg/kg			
(68)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(69)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(70)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(71)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	178 mg/kg
	BBP			ND
	DBP			ND
DIBP	ND			
(72)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	196 mg/kg
	BBP			ND
	DBP			271 mg/kg
DIBP	ND			
(73)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(74)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP			
	DBP			
DIBP				



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(75)	Cd	ND	NA	Cr <sup>6+</sup> : Negative
	Pb	ND		
	Hg	ND		
	Cr	Inconclusive		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(76)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			
(77)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(78)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(79)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(80)	Cd	ND	NA	Cr <sup>6+</sup> : Negative
	Pb	ND		
	Hg	ND		
	Cr	Inconclusive		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(81)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			
(82)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(83)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			
(84)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			
(85)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			
(86)	Cd	ND	NA	Cr <sup>6+</sup> : Negative
	Pb	ND		
	Hg	ND		
	Cr	Inconclusive		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(87)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(88)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			
(89)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(90)	Cd	ND	NA	PBBs : ND PBDEs : ND
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	Inconclusive		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			



## XRF Screening And Chemical Confirmation Test Report

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(91)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	134 mg/kg
	BBP			ND
	DBP			ND
DIBP	ND			
(92)	Cd	ND	NA	Cr <sup>6+</sup> : Negative
	Pb	ND		
	Hg	ND		
	Cr	Inconclusive		
	Br	NT		
	DEHP	NA	NA	NA
	BBP			
	DBP			
DIBP				
(93)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			
(94)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	NT	ND
	BBP			ND
	DBP			ND
DIBP	ND			



**XRF Screening And Chemical Confirmation Test Report**

Screened Components	Items	XRF Results	Screened Results(phthalates)	Chemical Confirmation Result
(95)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			
(96)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	ND		
	DEHP	NA	BL	NT
	BBP		BL	
	DBP		BL	
DIBP	BL			
(97)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP		NA	
	DBP		NA	
DIBP	NA			
(98)	Cd	ND	NA	NT
	Pb	ND		
	Hg	ND		
	Cr	ND		
	Br	NT		
	DEHP	NA	NA	NA
	BBP		NA	
	DBP		NA	
DIBP	NA			

ND = Not detected

NT = Not tested

Negative = The Cr (VI) concentration is less than 0.10  $\mu\text{g}/\text{cm}^2$ . The sample is negative for Cr (VI).



## XRF Screening And Chemical Confirmation Test Report

Remark:

(# ) = As claimed by the declaration submitted from the applicant, the Lead content of the component comes from Copper alloy only. According to EU RoHS Directive (2011/65/EU), Lead in Copper alloy containing up to 4% (40,000 mg/kg) Lead by weight can be exempted.

(B) Screening Limits

(B1). XRF Screening Limits in mg/kg for Regulated Elements in Various Matrices

Element	Polymer Materials	Metallic Materials	Composite Materials
Cd	$P \leq 70 < X < 130 \leq F$	$P \leq 70 < X < 130 \leq F$	$P \leq 70 < X < 150 \leq F$
Pb	$P \leq 700 < X < 1300 \leq F$	$P \leq 700 < X < 1300 \leq F$	$P \leq 500 < X < 1500 \leq F$
Hg	$P \leq 700 < X < 1300 \leq F$	$P \leq 700 < X < 1300 \leq F$	$P \leq 500 < X < 1500 \leq F$
Cr	$P \leq 700 < X$	$P \leq 700 < X$	$P \leq 500 < X$
Br	$P \leq 300 < X$	Not applicable	$P \leq 250 < X$

P = Pass

X = Inconclusive result

**F = Fail**

mg/kg = milligram per kilogram = ppm

(B2). Preliminary screening test will be used for phthalates, if the results exceed the warning area in the following table, further chemical methods will be conducted to confirm the exact content by GC/MS.

Phthalates	Polymer
Bis(2-ethylhexyl)phthalate(DEHP)	$BL \leq 600 < X$
Butyl benzyl phthalate(BBP)	$BL \leq 600 < X$
Dibutyl phthalate(DBP)	$BL \leq 600 < X$
Diisobutyl phthalate(DIBP)	$BL \leq 600 < X$

(C) Estimated Detection Limits in mg/kg for Regulated Elements in Various Matrices

Element	Polymer Materials	Metallic Materials	Composite Materials
Cd	50	70	70
Pb	100	200	200
Hg	100	200	200
Cr	100	200	200
Br	200	Not applicable	200



**XRF Screening And Chemical Confirmation Test Report**

**Disclaimers:**

This XRF Screening and Chemical Confirmation Test Report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF Screening and Chemical Confirmation Test Report is sufficient for its/his/her purposes.

The results shown in this XRF Screening and Chemical Confirmation Test Report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis is required to obtain quantitative data.

(D) Chemical Test Methods:

Testing Item	Testing Method	Reporting Limit
Lead (Pb) Content	With reference to IEC 62321-5 Edition 1.0: 2013, by acid digestion and determined by ICP - OES	2 mg/kg
Chromium (VI)(Cr <sup>6+</sup> ) Content	With reference to IEC 62321-7-2 Edition 1.0:2017, Hexavalent chromium – Determination of hexavalent chromium (Cr(VI) in polymers and electronics by the colorimetric method	10 mg/kg
Chromium (VI) (Cr <sup>6+</sup> ) Content	With reference to IEC 62321-7-1 edition 1.0:2015, by boiling water extraction and determined by UV-VIS spectrophotometer	0.10 µg/cm <sup>2</sup>
Polybrominated Biphenyls (PBBs) & Polybrominated Diphenyl Ethers (PBDEs) Content	With reference to IEC 62321-6 edition 1.0:2015, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary	5 mg/kg
Phthalates(DEHP,BBP,D BP,DIBP) Content	With reference to IEC 62321-8 Edition 1.0:2017,by solvent extraction and determined by GC/MS	100mg/kg

(E) 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 <sup>6+</sup> )	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)
Phthalates(DEHP, BBP, DBP, DIBP)	0.1% (1000 mg/kg)

The above limits were quoted from 2011/65/EU and (EU) 2015/863 for homogeneous material.



## XRF Screening And Chemical Confirmation Test Report

No. : 180703038GZU-001

Date: Jul 27, 2018

Screened components:

- (1) Black plastic
- (2) Silvery metal
- (3) Silvery metal
- (4) Purple textile
- (5) Silvery metal(spring)
- (6) Silvery metal
- (7) Silvery metal
- (8) Silvery metal(spring)
- (9) Silvery metal
- (10) Solder
- (11) Silvery metal coating on plastic
- (12) Black plastic excluding coating
- (13) Silvery metal
- (14) Silvery/copper color metal(point)
- (15) Solder
- (16) Silvery metal
- (17) Silvery metal(spring)
- (18) Black plastic
- (19) White plastic
- (20) Silvery metal(spring)
- (21) White plastic
- (22) White grease
- (23) White plastic
- (24) White plastic
- (25) Black treated metal
- (26) Silvery grey metal
- (27) Silvery grey metal
- (28) Beige plastic
- (29) Golden metal
- (30) White plastic
- (31) Silvery metal
- (32) Silvery metal
- (33) Silvery metal
- (34) Black treated metal
- (35) Capacitor
- (35a) Brown body
- (35b) Silvery metal(pin)
- (36) Black soft plastic
- (37) Capacitor
- (37a) Brown body
- (37b) Silvery metal(pin)
- (38) Beige plastic



## XRF Screening And Chemical Confirmation Test Report

- (39) Golden metal
- (40) Solder
- (41) Silvery metal
- (42) Silvery metal
- (43) Copper color metal
- (44) Copper color metal
- (45) Copper color carbon
- (46) Copper color metal
- (47) Silvery metal
- (48) White plastic
- (49) Brown plastic
- (50) Brown plastic
- (51) Dark brown plastic
- (52) Silvery metal
- (53) Green coating on metal
- (54) Copper color metal wire
- (55) Golden metal
- (56) Silvery metal
- (57) Blue glue
- (58) Dark brown plastic
- (59) Copper color metal
- (60) White plastic
- (61) Silvery metal
- (62) Silvery metal
- (63) Black magnet
- (64) Silvery metal
- (65) Copper color metal
- (66) Red plastic with black printing(wire covering)
- (67) Yellow plastic with black printing(wire covering)
- (68) Silvery metal
- (69) Solder
- (70) Silvery metal
- (71) Pink plastic with black printing(wire covering)
- (72) Black plastic with white printing(wire covering)
- (73) Silvery metal wire
- (74) Black plastic
- (75) Black treated metal
- (76) White plastic
- (77) Silvery metal
- (78) Black plastic
- (79) Silvery metal
- (80) Silvery metal
- (81) Black plastic
- (82) White plastic with silvery vacuum plated coating



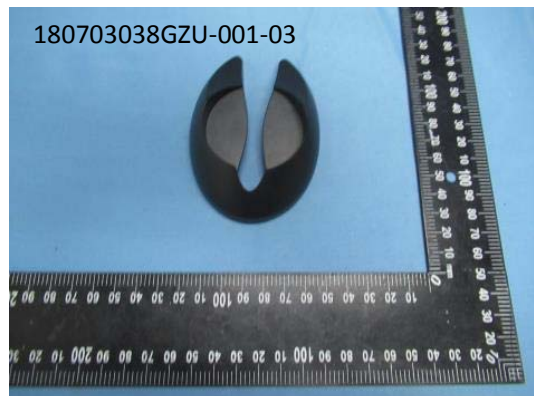
## XRF Screening And Chemical Confirmation Test Report

- (83) Transparent plastic
- (84) Black plastic
- (85) Transparent plastic
- (86) Silvery metal(spring)
- (87) Silvery metal
- (88) Transparent plastic
- (89) Silvery metal
- (90) Green PCB
- (91) Red plastic with black printing(wire covering)
- (92) Silvery metal
- (93) Black plastic
- (94) Black soft plastic
- (95) White plastic with silvery vacuum plated coating
- (96) Black plastic
- (97) Silvery metal
- (98) Silvery metal

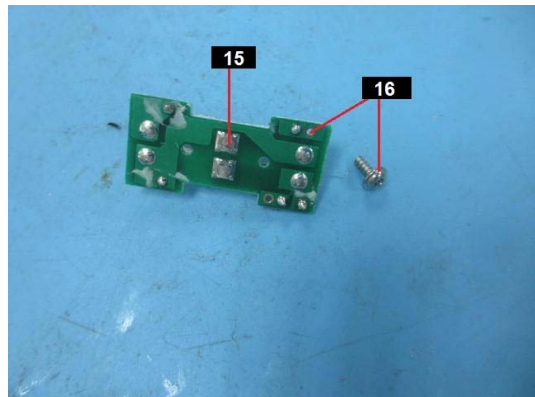
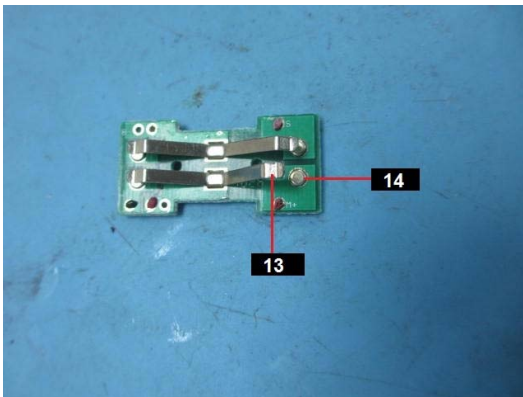
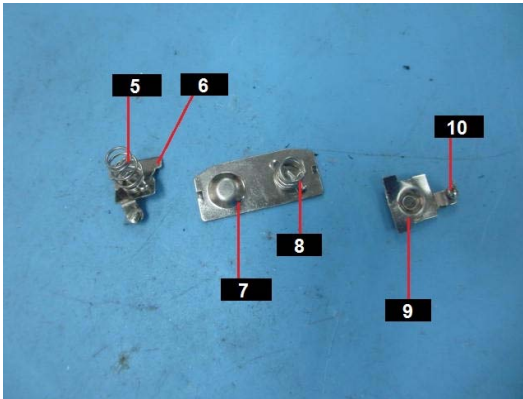
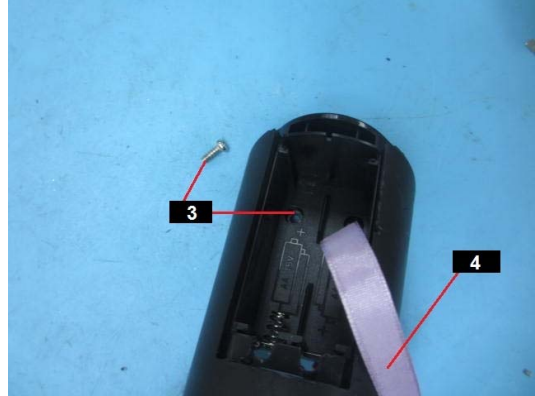
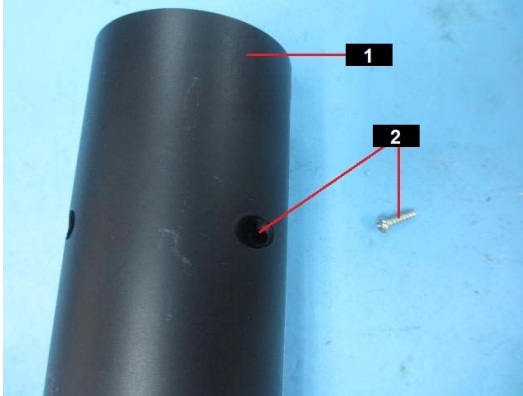


**XRF Screening And Chemical Confirmation Test Report**

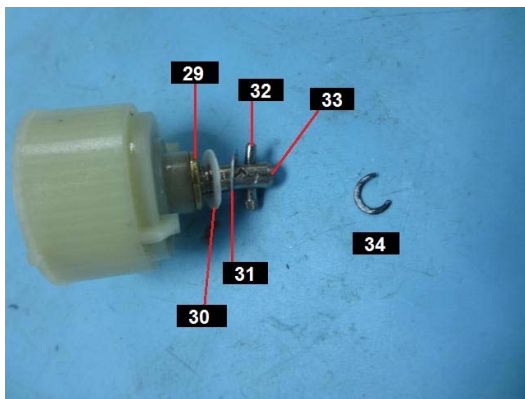
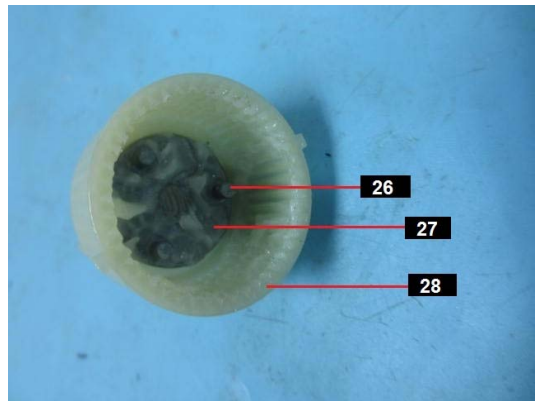
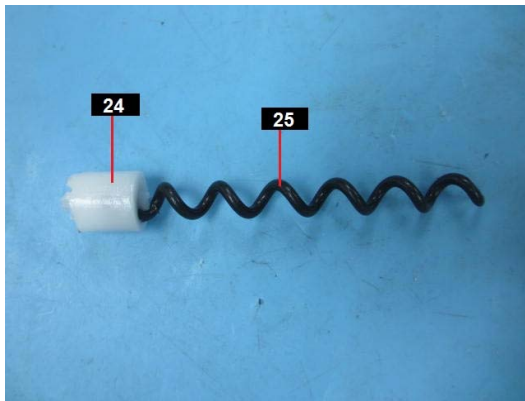
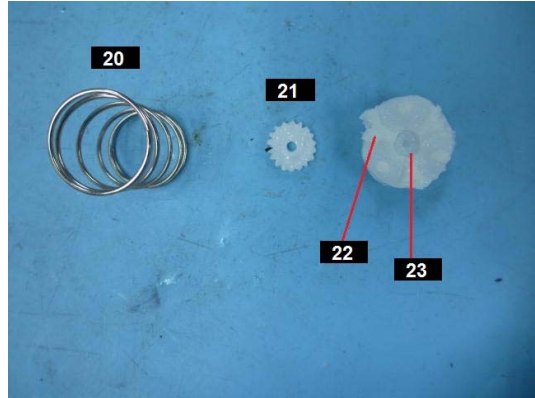
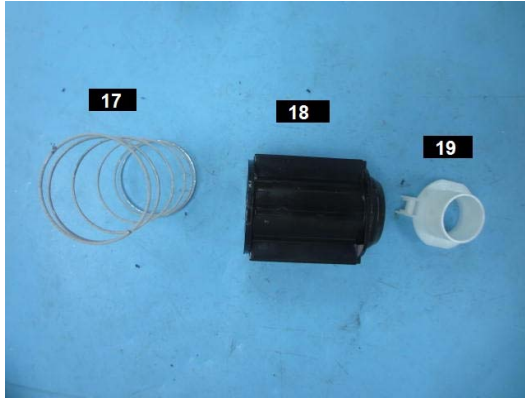
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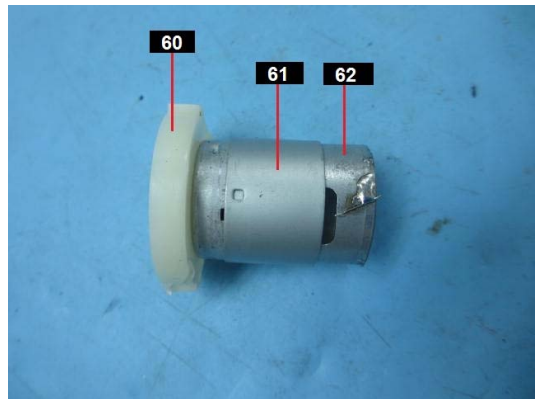
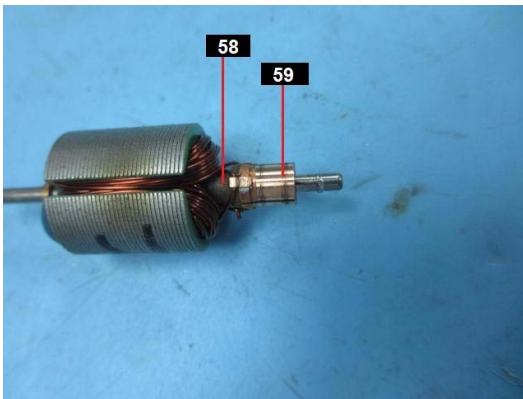
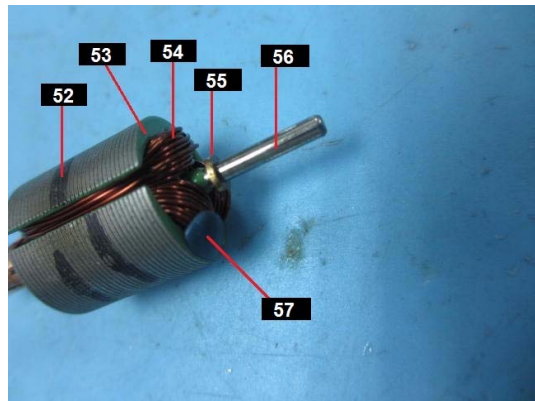
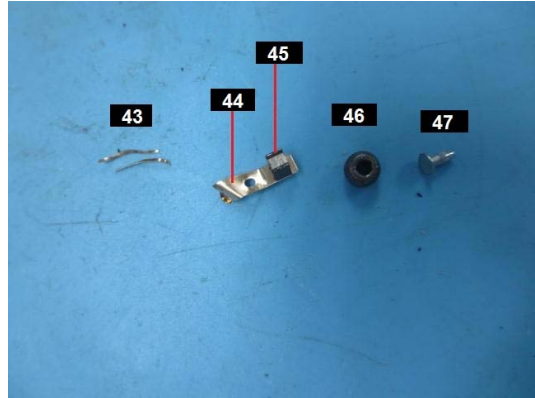
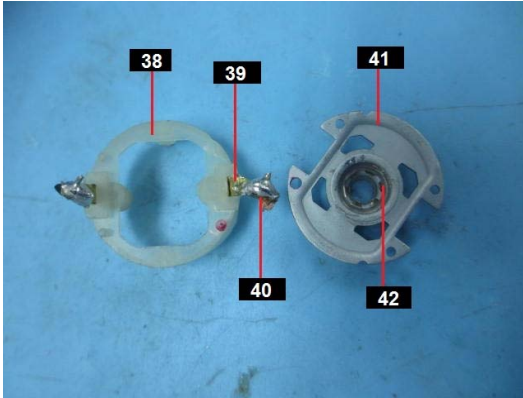
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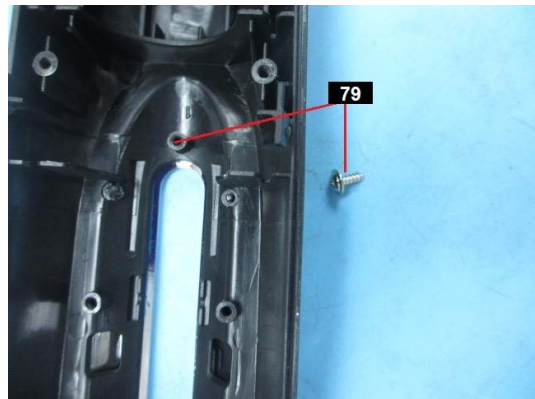
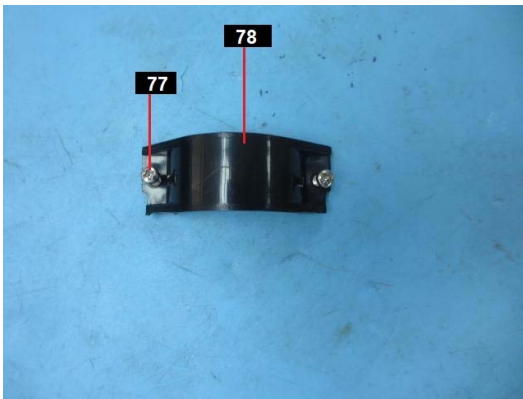
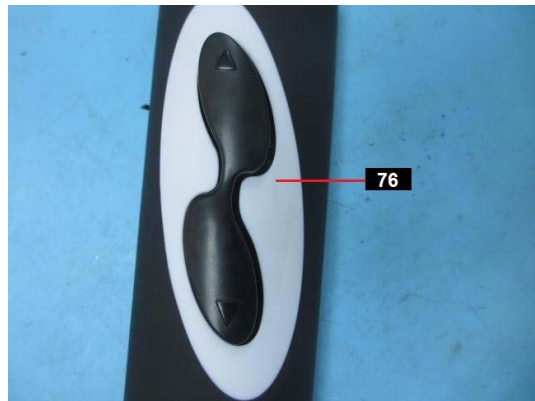
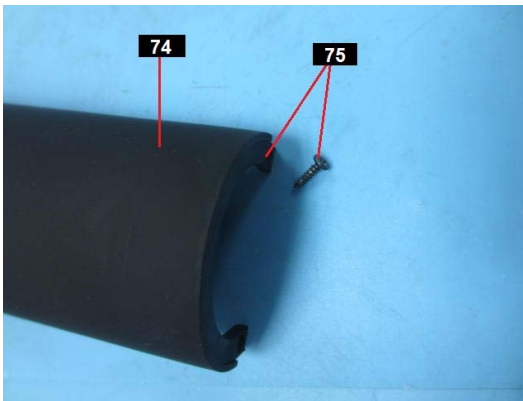
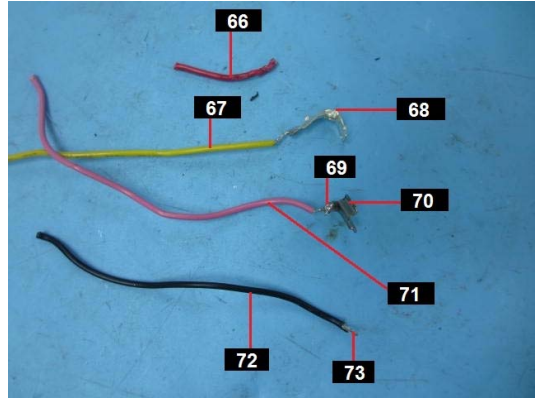
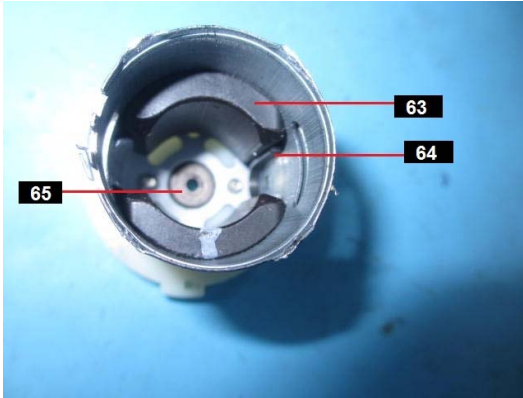
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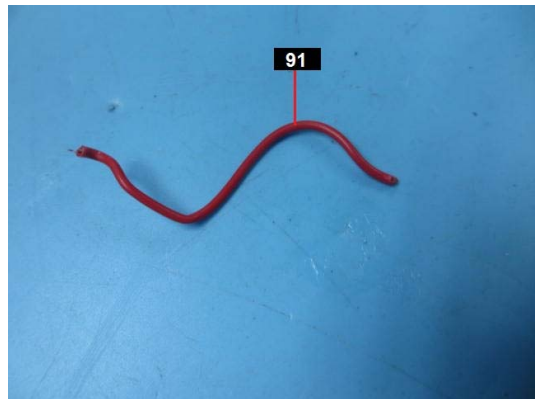
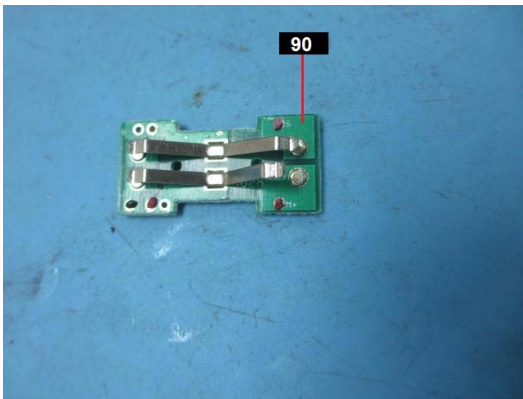
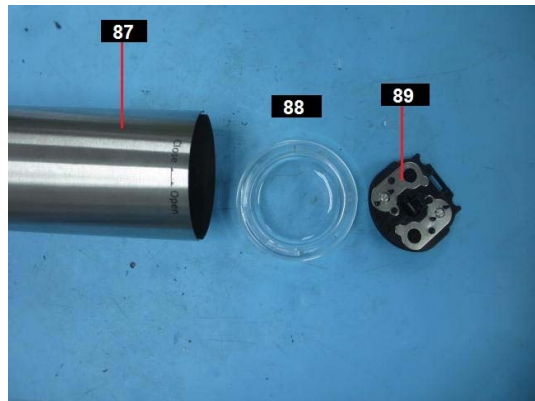
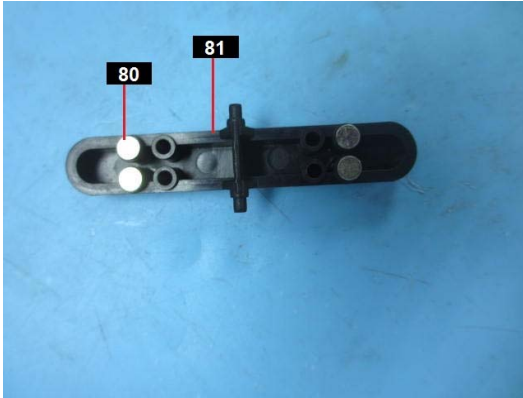
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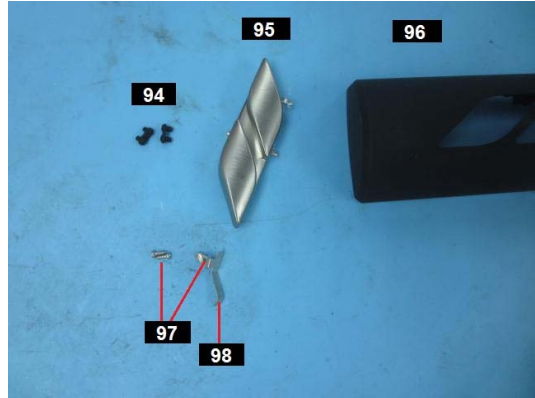
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End of report

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