TEST REPORT N°: BAHR-EGZ-P23070170-B

EMC TEST REPORT

Applicant	GUANGDONG XINBAO ELECTRICAL APPLIANCES HOLDINGS CO., LTD.
Address	Zhenghe South Road, Leliu Town, Shunde District, Foshan City, Guangdong Province, P.R. China

Factory1 Name	GUANGDONG XINBAO ELECTRICAL APPLIANCES HOLDINGS CO., LTD.
Address	Zhenghe South Road, Leliu Town, Shunde District, Foshan City, Guangdong Province, P.R. China
Factory2 Name	Foshan City Shunde District Donlim Intelligent Electrical Appliances Technology Co., Ltd.
Address	NO.26 Shunye East Road, Xingtan Town, Shunde District, Foshan City, Guangdong Province, P.R. China
Product	Coffee maker
Brand Name	XIN BAO
Model	CM9002E-GS
Electrical Rating	220-240V~, 50-60Hz or 50Hz or 60Hz, 1350W, Class I
Date of tests	July 18, 2023 ~ August 1, 2023

The submitted sample of the above equipment has been tested according to the requirements of the following standards:

EN IEC 55014-1:2021
EN IEC 55014-2:2021
EN IEC 61000-3-2:2019+A1:2021
EN 61000-3-3:2013+A1:2019+A2:2021

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Tobey YANG Testing Engineer / EMC Department	Approved by Linda CHENG Project Engineer / EMC Department
Tobey Yang Date: September 8, 2023	Linda Cheng Date: September 8, 2023

1 TESTING PROGRAM

Emission standard EN IEC 55014-1:2021

- Measurement of the disturbance voltage levels.
- Measurement of the discontinuous disturbance levels.
- Measurement of the disturbance power levels.
- Measurement of the radiated disturbance levels.

Immunity standard EN IEC 55014-2:2021

- Immunity to electrostatic discharges - publication IEC 61000-4-2.
- Immunity to fast transients/bursts - publication IEC 61000-4-4.
- Immunity to conducted disturbances induced by radio-frequency fields - publication IEC 61000-4-6.
- Immunity to radiated radio-frequency electromagnetic field with amplitude modulation - publication IEC 61000-4-3.
- Immunity to surges - publication IEC 61000-4-5.
- Immunity to voltage dips -publication IEC 61000-4-11.
- Immunity to voltage interruptions - publication IEC 61000-4-11.

Emission standard EN IEC 61000-3-2:2019+A1:2021

- Measurement of the harmonic currents.

Emission standard EN 61000-3-3:2013+A1:2019+A2:2021

- Measurement of the voltage fluctuations and flickers.

Special Comment : /

2 GENERAL PRODUCT INFORMATION

Model list:

CM9002E-GS

General product information:

The appliance is Coffee maker for household and indoor use only.

Based on engineering judgement, full tests were performed on model CM9002E-GS. The worst case's test data was presented in this test report.

The production units are required to conform to the initial sample as received when the units are placed on the market.

3 LABORATORY MEASUREMENTS

3.1 Support Equipment: N/A

3.2 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conduction emission test(9K-150KHz)	3.00 dB
Conduction emission test(150KHz-30MHz)	3.00 dB
Disturbance Power test	3.50dB

3.3 TEST SITES

GUANGDONG XINBAO ELECTRICAL APPLIANCES HOLDINGS CO., LTD.
Zhenghe South Road, Leliu Town, Shunde District, Foshan City, Guangdong Province, P.R. China

4 LIST OF TEST EQUIPMENT

Equipment	Type	Inventory no.	Manufacturer	Last calibration date	Calibration due date
Test stand: Disturbance Voltage					
EMC shield Room	9*5*3.5m	ZS09038	Zhong Sou	2022/10/18	2023/10/17
EMI receiver	ESCI	100998	R&S	2023/2/9	2024/2/9
LISN	ENV216	101074	R&S	2022/10/13	2023/10/13
Cable	2m	17120702	Switzerland	2023/6/30	2024/6/30
Voltage probe	/	/	/	/	/
Test stand: Radiated Electromagnetic Disturbance(9kHz to 30MHz)					
EMC shield Room	9*5*3.5m	ZS09038	Zhong Sou	2022/10/18	2023/10/17
EMI receiver	ESCI	100998	R&S	2023/2/9	2024/2/9
3-dimensional large loop antenna	HXYZ 9170	HXYZ9170-176	Schwarzbeck	2023/6/30	2024/6/30
Cable	10m	10m-2	Switzerland	2023/6/30	2024/6/30
Test stand: Radiated Electromagnetic Disturbance (30 MHz -300 MHz, CDNE Method)					
EMC shield Room	9*5*3.5m	ZS09038	Zhong Sou	2022/10/18	2023/10/17
EMI receiver	ESCI	100998	R&S	2023/2/9	2024/2/9
Coupling & Decoupling Network	/	/	/	/	/
Coupling & Decoupling Network	/	/	/	/	/
Attenuator	/	/	/	/	/
Test stand: Disturbance Power					
EMC shield Room	9*5*3.5m	ZS09038	Zhong Sou	2022/10/18	2023/10/17
EMI receiver	ESCI	100998	R&S	2023/2/9	2024/2/9
Absorb Power Clamp	MDS-21	100363	R&S	2023/8/28	2024/8/28
Absorb Power Clamp	MDS-21B	54813	R&S	2023/3/9	2024/3/8
Test stand: Click					
EMC shield Room	9*5*3.5m	ZS09038	Zhong Sou	2022/10/18	2023/10/17
Click Tester	DIA1512D CISPR kit	28285	schaffner	2023/6/30	2024/6/30
LISN	ENV216	102778	R&S	2023/6/30	2024/6/30
Test stand: Test stand: Harmonic Currents & Flicker					
Harmonic power	5001iX	2147A01958	California Instruments	2023/2/9	2024/2/9
Harmonic analyzer	PACS-1	2147A01948	California Instruments	2023/2/9	2024/2/9
Test stand: Electrostatic Discharge					
ESD simulator	NSG437	1792	TESEQ	2022/12/26	2023/12/26

Test stand: Electrical Fast Transient/Burst					
EFT Generator	EMS61000-4A	P185639CM1391116	Yuan Fang	2023/6/30	2024/6/30
Capacitive Coupling Clamp	EFTC-2	P185875CA/1391116	Yuan Fang	2023/6/30	2024/6/30
Test stand: Surge					
Surge Generator	NSG3060	152	TESEQ	2023/6/30	2024/6/30
Test stand: Inject Currents Immunity (0.15 MHz to 230 MHz)					
Conducted Immunity Testing System	CS-6000A	1059/050ZW00701	OPHIP/PMM	2022/10/13	2023/10/13
Coupling&Decoupling Network	CDN M2/3-16	NY101118CS1401116	Nuo Yi	2022/10/13	2023/10/13
Current Electromagnetic injection clamp	/	/	/	/	/
6dB Attenuator	/	NY101118CS1402117	Nuo Yi	2022/10/13	2023/10/13
Test stand: Voltage Dips and Interruptions					
Voltage dips\interrupt tester	EOS-1	2147A01959	California Instruments	2023/2/9	2024/2/9

5 OPERATING CONDITIONS

The apparatus was placed in a shielded room, and was powered with an alternative current source through filters mounted on the shielded room wall. The apparatus was worked continuously.

Climatic conditions:	Temperature	:	22 °C
	Relative humidity	:	55 %
	Atmospheric pressure	:	101 kPa

6 PERFORMANCE CRITERIA

Criterion A : The apparatus operate as intended during the test. No degradation of performance or loss of function is allowed below the performance level.

Criterion B : The apparatus operate as intended after the test. No change of operating state and the stored data are allowed. During the test, degradation of performance is allowed.

Criterion C : Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

7 TEST RESULTS

7.1 EMISSION STANDARD EN IEC 55014-1:2021

Article	TEST	TEST SPECIFICATION	RESULTS			
			P	F	NA	Rem
4.3 **4.3.3**	**Disturbance Voltage Limit** Frequency range: 0.15 to 30 MHz	Operating conditions : according to the Annex A Port(s) : • AC mains port • Diagram No. <1>	[X]	[ ]	[ ]	[ ]
4.3.4	**Disturbance Power Limit** Frequency range : 30 to 300 MHz	Port(s) : • AC mains port • DC port Diagram No. <2>	[X] [ ]	[ ] [ ]	[ ] [ ]	[1] [1]
4.3.4	**Radiated disturbance limits** Frequency range: 300 to 1000 MHz	Measuring Distance: 3 m Antenna : - horizontal position - vertical position Diagram(s) No. < >	[ ] [ ]	[ ] [ ]	[X] [X]	[2] [2]
4.4.2	**Discontinuous Disturbance Limit** Frequency range: 0.15 to 30 MHz	Operating conditions : according to the Annex A Port(s) : • AC mains port • Table(s) No. <1>	[X]	[ ]	[ ]	[ ]

P : pass – F : Fail – NA : not applicable – Rem : remark

7.2 IMMUNITY STANDARD EN IEC 55014-2:2021

☒ Apparatus category: II

Article	TEST	TEST SPECIFICATION	RESULTS			
			P	F	NA	Rem
5.1	**Electrostatic discharges** Table 1 Enclosure Performance Criterion B	Contact discharges Level : ± 4 kV Application points : • horizontal coupling plane • vertical coupling plane • conductive part	 [X] [X] [X]	 [ ] [ ] [ ]	 [ ] [ ] [ ]	 [3] [3] [3]
		Air discharges Level : ± 8 kV Application points : • switch • gap	 [X] [X]	 [ ] [ ]	 [ ] [ ]	 [3] [3]
5.2	**Fast transients/bursts** Table 4 Alternative current power input and output port(s) Performance Criterion B	Level : ± 1 kV Repetition rate : 5 kHz Testing time : 2 min Port(s) : • AC mains	 [X]	 [ ]	 [ ]	 [3]
5.3	**Injected current 0.15 to 230 MHz** Table 7 Alternative current power input and output port(s) Performance Criterion A	Voltage level : 3V (unmodulated signal) Modulation frequency : 1 kHz Modulation depth : 80 % Frequency Step : 1% Dwell Time: 2 s Application with CDN-M3 Port(s) : • AC mains	 [X]	 [ ]	 [ ]	 [3]

P : pass - F : Fail - NA : not applicable - Rem : remark

Article	TEST	TEST SPECIFICATION	RESULTS P	F	NA	Rem
5.5	**Radio-frequency electromagnetic fields 80 to 1000 MHz** Table 11 Enclosure Performance criteria A	Test field strength : 3 V/m (unmodulated signal) Modulation frequency : 1 kHz Modulation depth : 80 % Frequency Step : 1% Dwell Time : 2 s ☐ Logperiodic antenna ☐ GTEM: - horizontal position - vertical position	[ ] [ ]	[ ] [ ]	[X] [X]	[ ] [ ]
5.6	**Surges** Table 12 Alternative current power input and output port(s) Performance Criterion B	Tr/Th(μs) : 1.2/50 (8/20) Number of surges : 5 positive and 5 negative Phase angles : 90° and 270° Level : ± 1 kV Port(s) : • power input, between lines and neutral	[X]	[ ]	[ ]	[3]
		Level : ± 2 kV Port(s) : • power input, between lines and earth • power input, between neutral and earth	[X] [X]	[ ] [ ]	[ ] [ ]	[3] [3]

Article	TEST	TEST SPECIFICATION	RESULTS P	F	NA	Rem
5.7	**Voltage dips and voltage interruptions** Table 13 Alternative current power input port(s) Performance Criterion C	Voltage interruptions Test level : 0 % Ut Duration : 10 ms Phase angles : 0° and 180° Port(s) : • AC mains	[X]	[ ]	[ ]	[3]
		Voltage dips Test level : 40 % Ut Duration : 200 ms Phase angles : 0° Port(s) : • AC mains	[X]	[ ]	[ ]	[3]
		Voltage dips Test level : 70 % Ut Duration : 500 ms Phase angles : 0° Port(s) : • AC mains	[X]	[ ]	[ ]	[3]

P : pass - F : Fail - NA : not applicable - Rem : remark

7.3 EMISSION STANDARD EN IEC 61000-3-2:2019+A1:2021

TEST	TEST SPECIFICATION	RESULTS			
		P	F	NA	Rem
Limits for harmonic currents emission	Frequency range: 0 to 2 kHz Class of the apparatus : A Table(s) No. <2>	[X]	[ ]	[ ]	[ ]

P : pass - F : Fail - NA : not applicable - Rem : remark

7.4 EMISSION STANDARD EN 61000-3-3:2013+A1:2019+A2:2021

TEST	TEST SPECIFICATION	RESULTS			
		P	F	NA	Rem
Limitation of voltage fluctuations and flicker in low-voltage supply systems	Frequency range: 0 to 2 kHz Table(s) No. <3>	[X]	[ ]	[ ]	[ ]

P : pass - F : Fail - NA : not applicable - Rem : remark

Remark(s) :

1. The manufacturer chooses the disturbance power test method according to clause 4.3.4 in this standard.
2. The EUT does not contain any internal clock frequency or clock generator operating at frequency higher than 30MHz and the margin for the disturbance power test results between 200MHz and 300MHz fulfilled the margin's requirement in Table 8, the EUT is deemed to comply with this requirement without further testing.
3. During and after the test, there are no loss of function and no change of motor speed, power consumption and operating state.

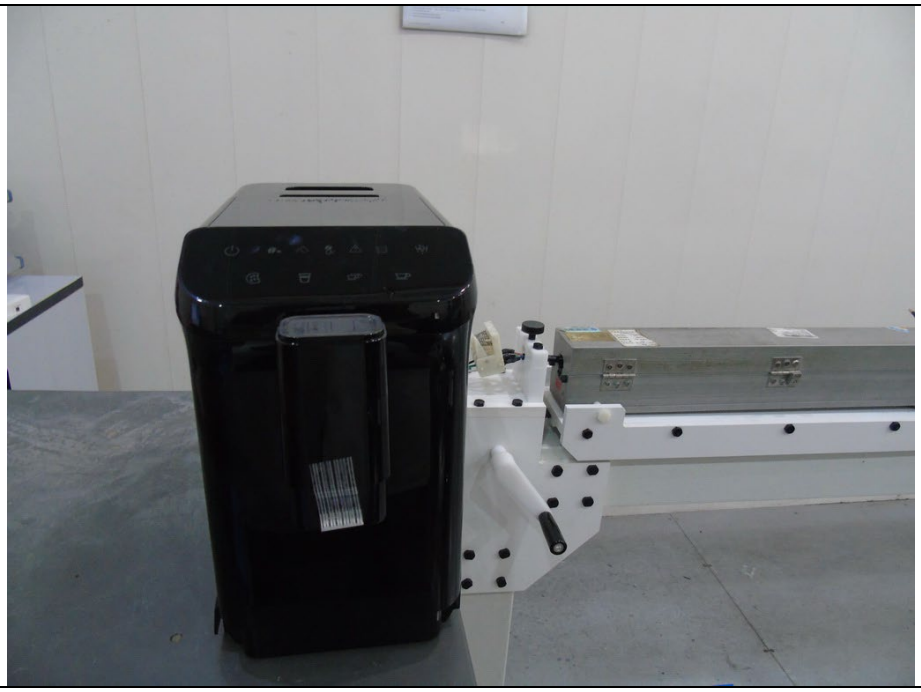
8 CONCLUSION

The apparatus Coffee maker, model listed in page 3 is in compliance with the requirements of the standards EN IEC 55014-1:2021, EN IEC 55014-2:2021, EN IEC 61000-3-2:2019+A1:2021 and EN 61000-3-3:2013+A1:2019+A2:2021.

9 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST

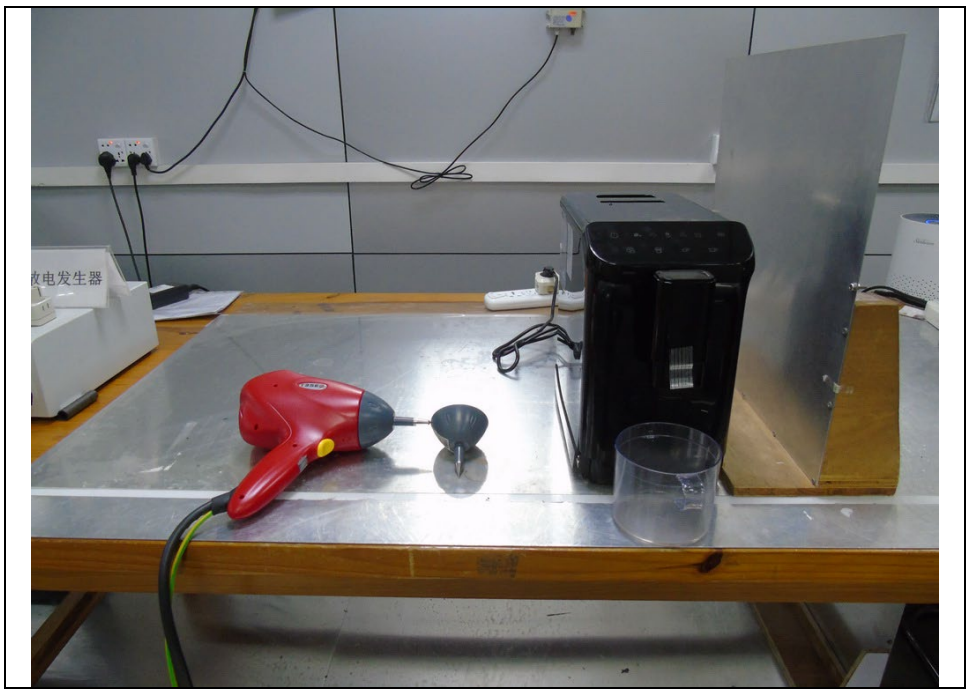
RADIATED DISTURBANCE POWER TEST



CLICKS TEST

HARMONICS EMISSION TEST &
VOLTAGE FLUCTUATIONS AND FLICKER TEST

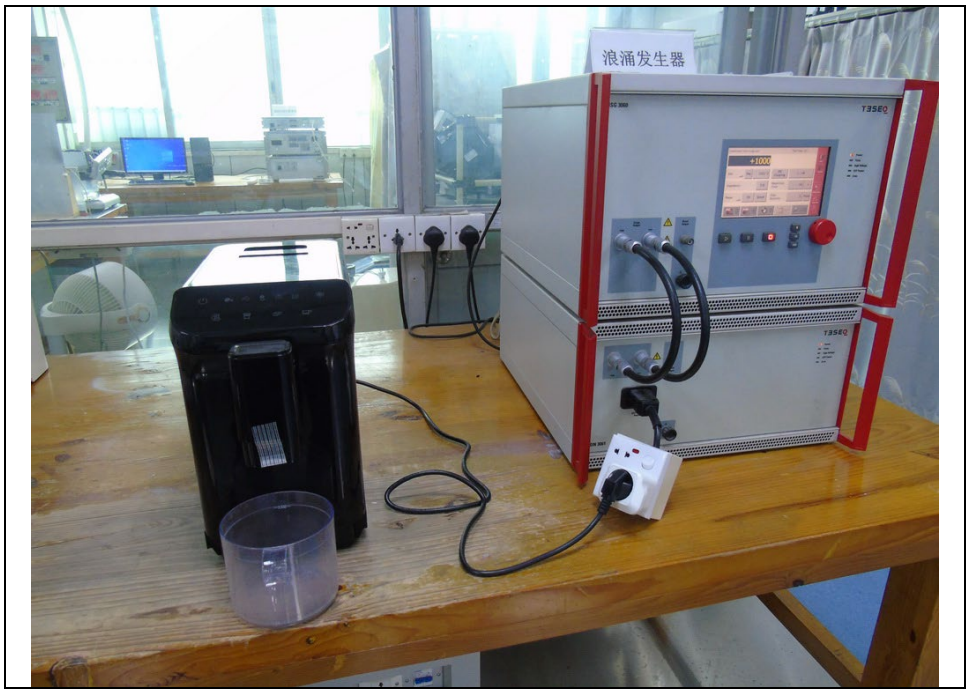
ESD TEST



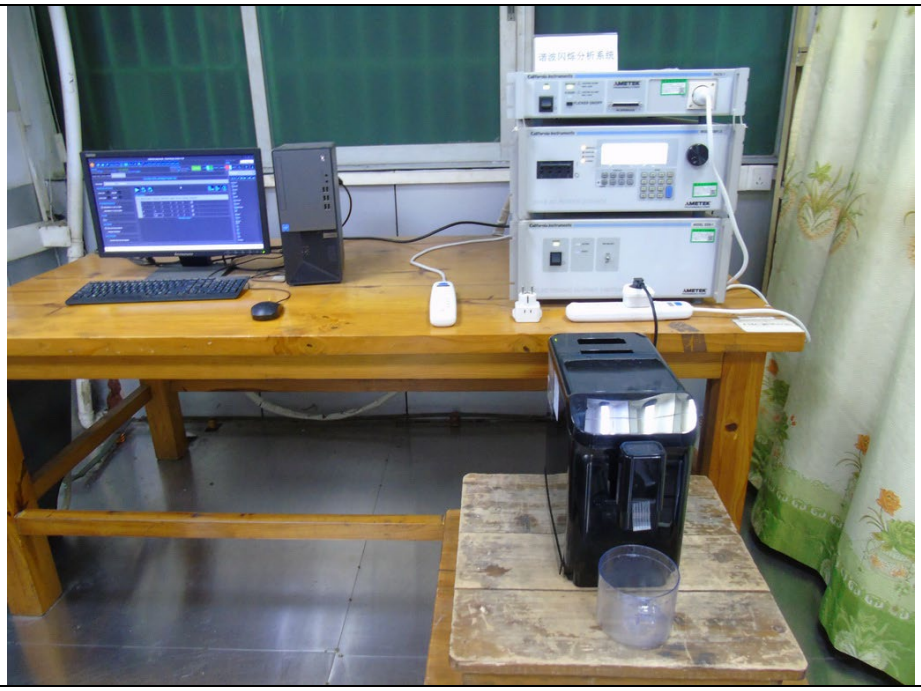
CS TEST

EFT TEST

SURGE TEST



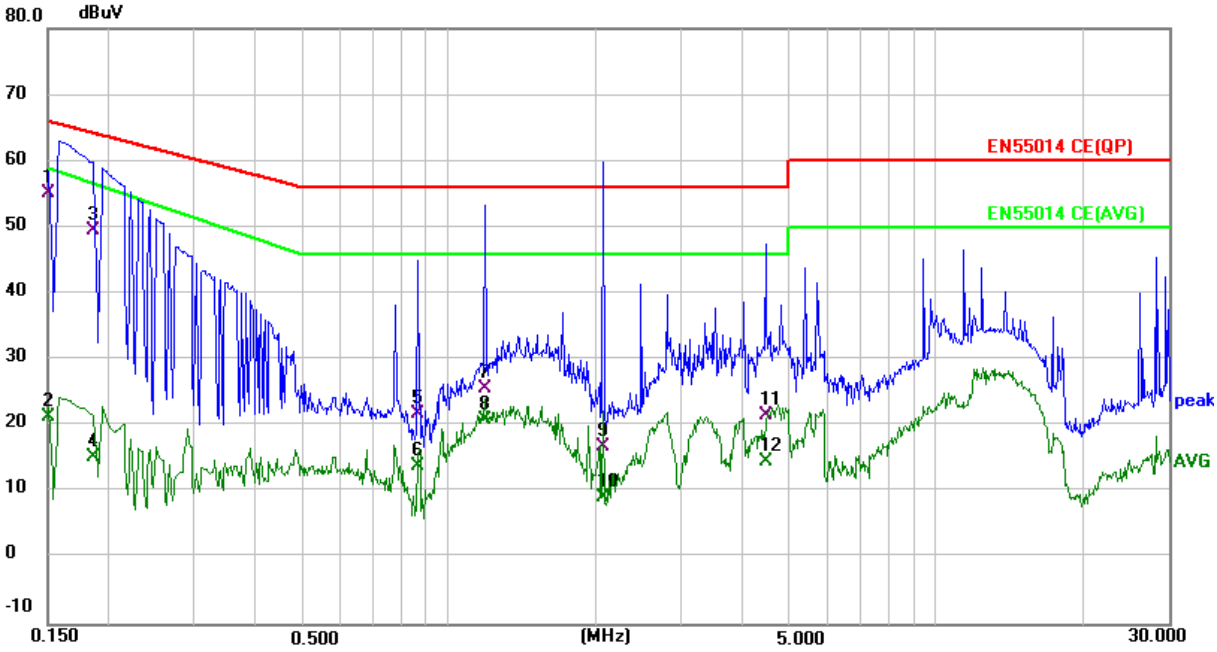
VOLTAGE DIPS AND INTERRUPTIONS TEST



10 APPENDIX A – TEST DATA

Diagram No. 1: Conducted Emission

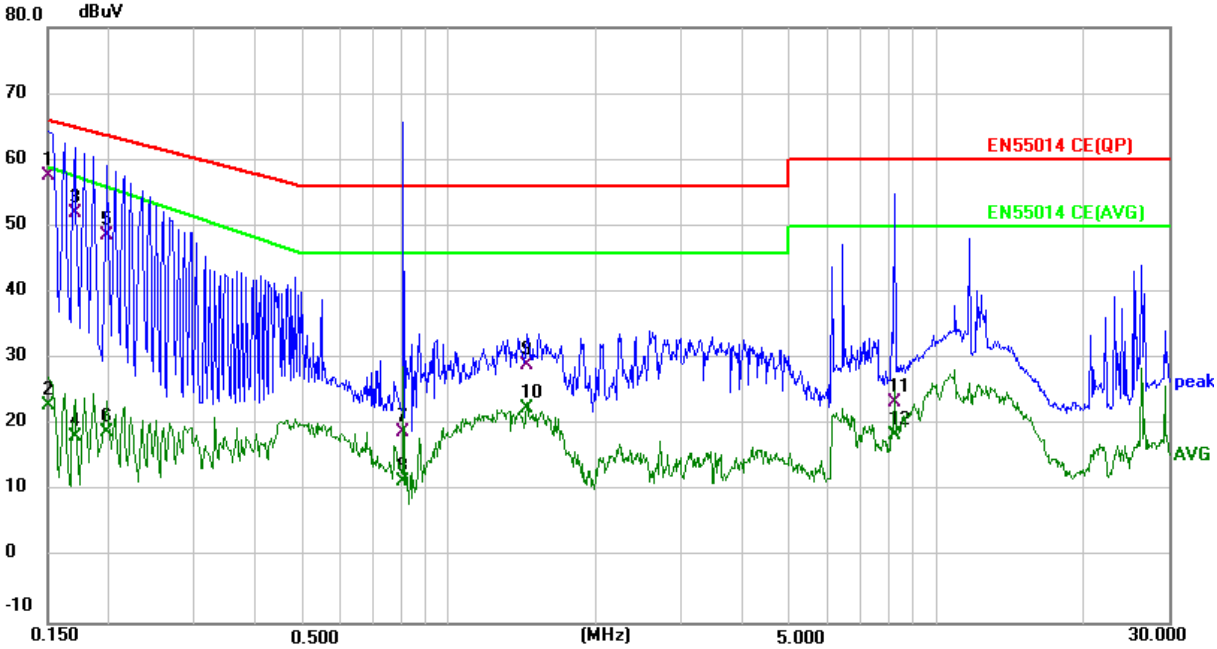
L Line



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1 *	0.1500	45.45	9.67	55.12	66.00	-10.88	QP
2	0.1500	11.81	9.67	21.48	59.00	-37.52	AVG
3	0.1860	39.91	9.66	49.57	64.21	-14.64	QP
4	0.1860	5.70	9.66	15.36	56.68	-41.32	AVG
5	0.8660	12.32	9.59	21.91	56.00	-34.09	QP
6	0.8660	4.47	9.59	14.06	46.00	-31.94	AVG
7	1.1900	16.17	9.60	25.77	56.00	-30.23	QP
8	1.1900	11.25	9.60	20.85	46.00	-25.15	AVG
9	2.0740	7.24	9.63	16.87	56.00	-39.13	QP
10	2.0740	-0.35	9.63	9.28	46.00	-36.72	AVG
11	4.4740	11.88	9.67	21.55	56.00	-34.45	QP
12	4.4740	4.94	9.67	14.61	46.00	-31.39	AVG

Continued

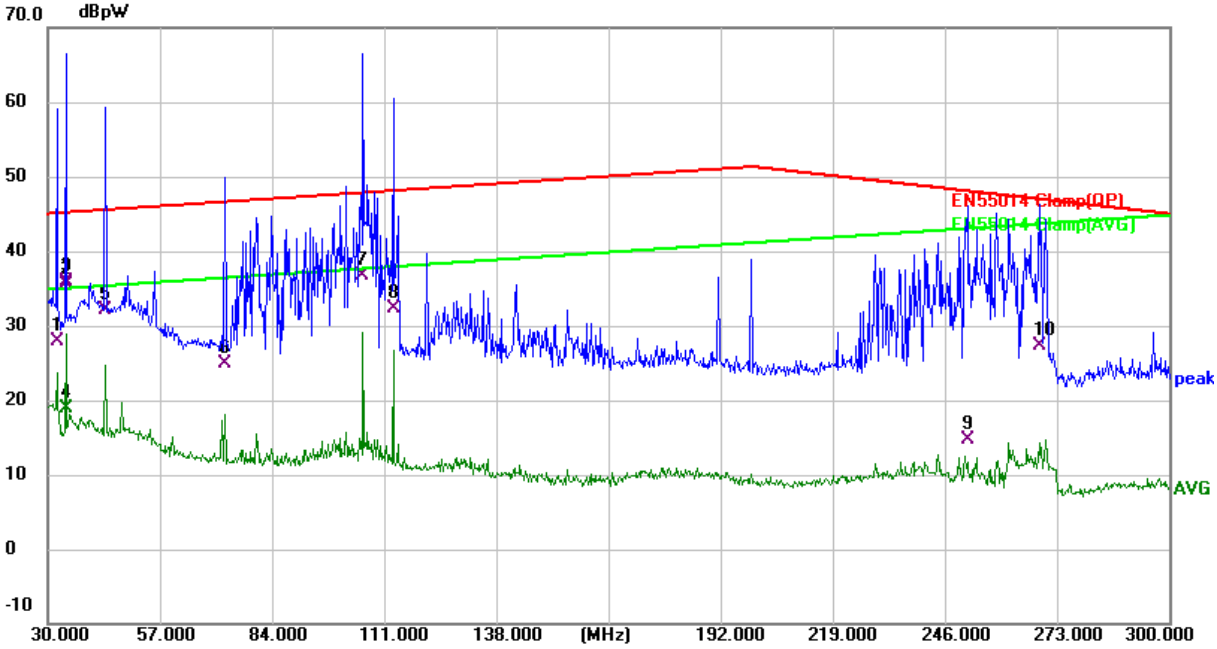
N line



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1 *	0.1500	48.07	9.60	57.67	66.00	-8.33	QP
2	0.1500	13.32	9.60	22.92	59.00	-36.08	AVG
3	0.1700	42.50	9.59	52.09	64.96	-12.87	QP
4	0.1700	8.62	9.59	18.21	57.65	-39.44	AVG
5	0.1980	39.08	9.57	48.65	63.69	-15.04	QP
6	0.1980	9.34	9.57	18.91	56.00	-37.09	AVG
7	0.8060	9.44	9.53	18.97	56.00	-37.03	QP
8	0.8060	1.96	9.53	11.49	46.00	-34.51	AVG
9	1.4460	19.49	9.55	29.04	56.00	-26.96	QP
10	1.4460	13.05	9.55	22.60	46.00	-23.40	AVG
11	8.2100	13.80	9.64	23.44	60.00	-36.56	QP
12	8.2100	8.79	9.64	18.43	50.00	-31.57	AVG

Diagram No. 2: Disturbance Power

AC Port



No.	Frequency (MHz)	Reading (dBpW)	Factor (dB)	Level (dBpW)	Limit (dBpW)	Margin (dB)	Detector
1	32.3600	-2.74	30.65	27.91	45.09	-17.18	QP
2	34.4000	5.34	30.09	35.43	45.16	-9.73	QP
3 *	34.4000	5.72	30.09	35.81	45.16	-9.35	QP
4	34.4000	-11.26	30.09	18.83	35.16	-16.33	AVG
5	43.8400	3.73	28.39	32.12	45.51	-13.39	QP
6	72.8000	-2.53	27.41	24.88	46.59	-21.71	QP
7	106.1200	9.85	26.91	36.76	47.82	-11.06	QP
8	113.3600	5.99	26.36	32.35	48.09	-15.74	QP
9	251.6400	-9.36	24.10	14.74	48.05	-33.31	QP
10	268.6800	4.58	22.79	27.37	46.97	-19.60	QP

Table(s) No. < 1>

First test run:

Frequency (MHz)	0.15	0.50	1.40	30.00
Permitted limit for continuous interference (dBμV)	66	56	56	60
Short Clicks [T<10ms]	37	0	0	0
Mid. Clicks [10ms<T<20ms]	0	0	0	0
Long Clicks [T>20ms]	3	0	0	0
Total clicks (number)	40	40	40	40
Switching operation (number)	--			
Factor	--			
Observation time (min.)	36			
Click rate, N	1.13	0.00	0.00	0.00
Value to be added (dB)	18	--	--	--
Counted clicks allowed to exceed the permitted limit (number)	1	--	--	--

Second test run:

Permitted limit for clicks (dBμV)	84	--	--	--
Counted clicks exceeding the limit (number)	--	--	--	--
Complies with the limit (Pass/Fail)	Pass	Pass	Pass	Pass

Table(s) No. < 2>

Test Result: Pass Source qualification: Normal
THC(A): 0.426 I-THD(%): 7.6 POHC(A): 0.014 POHC Limit(A): 0.251

Highest parameter values during test:

V_RMS (Volts):	230.32	Frequency(Hz):	50.00
I_Peak (Amps):	10.922	I_RMS (Amps):	5.978
I_Fund (Amps):	5.588	Crest Factor:	9.013
Power (Watts):	1286.3	Power Factor:	1.000

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.404	1.080	37.4	1.053	1.620	65.0	Pass
3	0.062	2.300	2.7	0.197	3.450	5.7	Pass
4	0.092	0.430	21.5	0.223	0.645	34.6	Pass
5	0.029	1.140	2.5	0.086	1.710	5.0	Pass
6	0.046	0.300	15.5	0.112	0.450	25.0	Pass
7	0.016	0.770	2.1	0.056	1.155	4.9	Pass
8	0.026	0.230	11.3	0.058	0.345	16.9	Pass
9	0.012	0.400	3.0	0.040	0.600	6.7	Pass
10	0.021	0.184	11.2	0.046	0.276	16.7	Pass
11	0.010	0.330	3.2	0.030	0.495	6.1	Pass
12	0.014	0.153	8.9	0.033	0.230	14.2	Pass
13	0.008	0.210	3.6	0.026	0.315	8.2	Pass
14	0.012	0.131	9.2	0.028	0.197	14.4	Pass
15	0.007	0.150	4.6	0.024	0.225	10.7	Pass
16	0.009	0.115	7.6	0.024	0.173	14.1	Pass
17	0.005	0.132	4.1	0.022	0.198	11.1	Pass
18	0.008	0.102	7.7	0.021	0.153	13.8	Pass
19	0.005	0.118	4.2	0.018	0.178	10.1	Pass
20	0.006	0.092	6.8	0.019	0.138	13.7	Pass
21	0.004	0.107	N/A	0.017	0.161	N/A	Pass
22	0.006	0.084	6.7	0.018	0.125	14.0	Pass
23	0.004	0.098	N/A	0.016	0.147	N/A	Pass
24	0.005	0.077	6.5	0.016	0.115	13.8	Pass
25	0.004	0.090	N/A	0.015	0.135	N/A	Pass
26	0.005	0.071	7.6	0.015	0.107	14.3	Pass
27	0.006	0.083	7.1	0.015	0.125	12.1	Pass
28	0.007	0.066	11.2	0.015	0.099	15.5	Pass
29	0.006	0.078	7.4	0.014	0.116	11.9	Pass
30	0.005	0.061	8.2	0.014	0.092	15.1	Pass
31	0.005	0.073	7.4	0.013	0.109	12.0	Pass
32	0.007	0.058	12.0	0.014	0.086	15.8	Pass
33	0.005	0.068	N/A	0.013	0.102	N/A	Pass
34	0.004	0.054	N/A	0.013	0.081	N/A	Pass
35	0.003	0.064	N/A	0.012	0.096	N/A	Pass
36	0.003	0.051	N/A	0.012	0.077	N/A	Pass
37	0.003	0.061	N/A	0.011	0.091	N/A	Pass
38	0.003	0.048	N/A	0.011	0.073	N/A	Pass
39	0.003	0.058	N/A	0.011	0.087	N/A	Pass
40	0.002	0.046	N/A	0.008	0.069	N/A	Pass

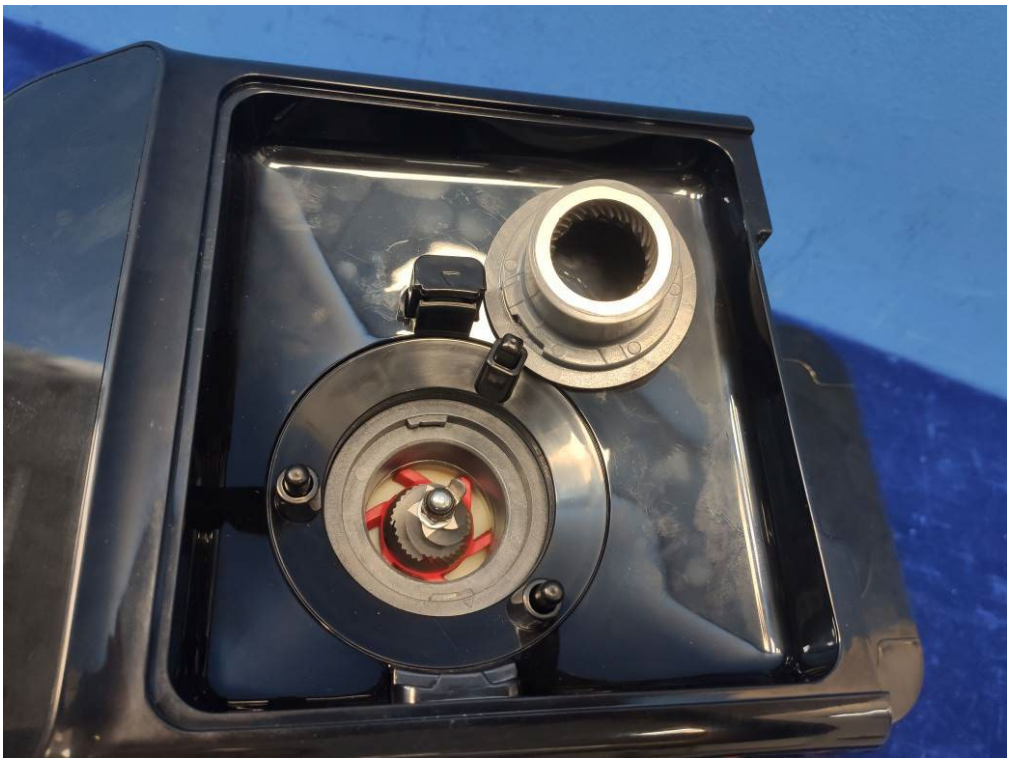
Table(s) No. < 3>

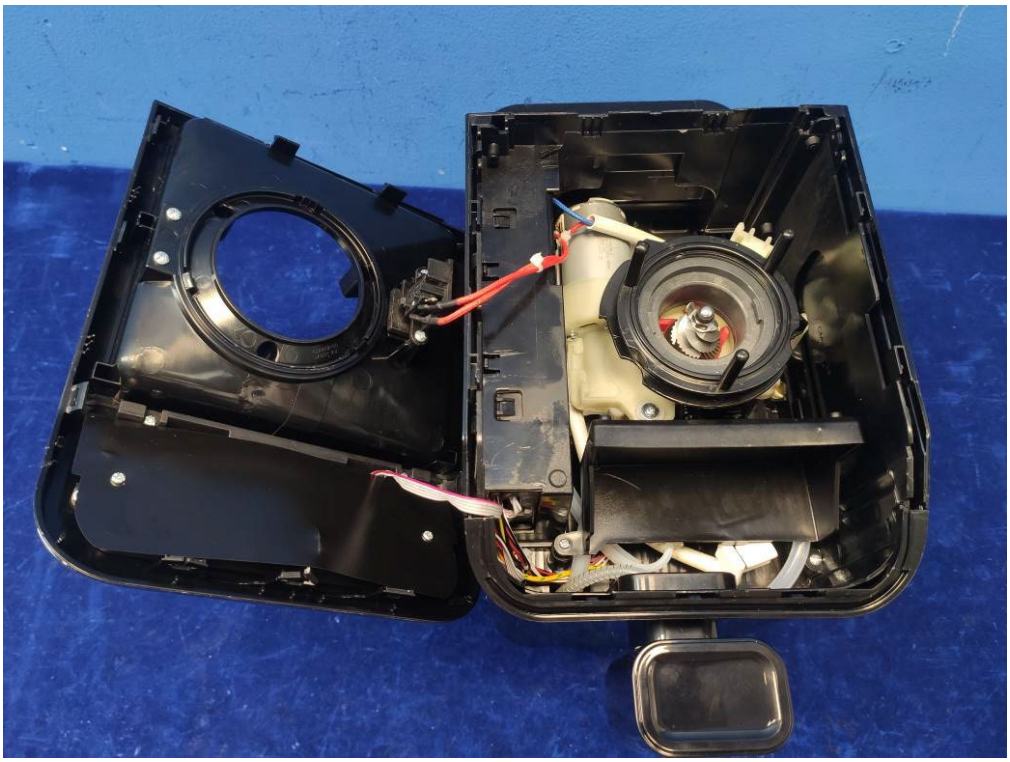
Parameter values recorded during the test:

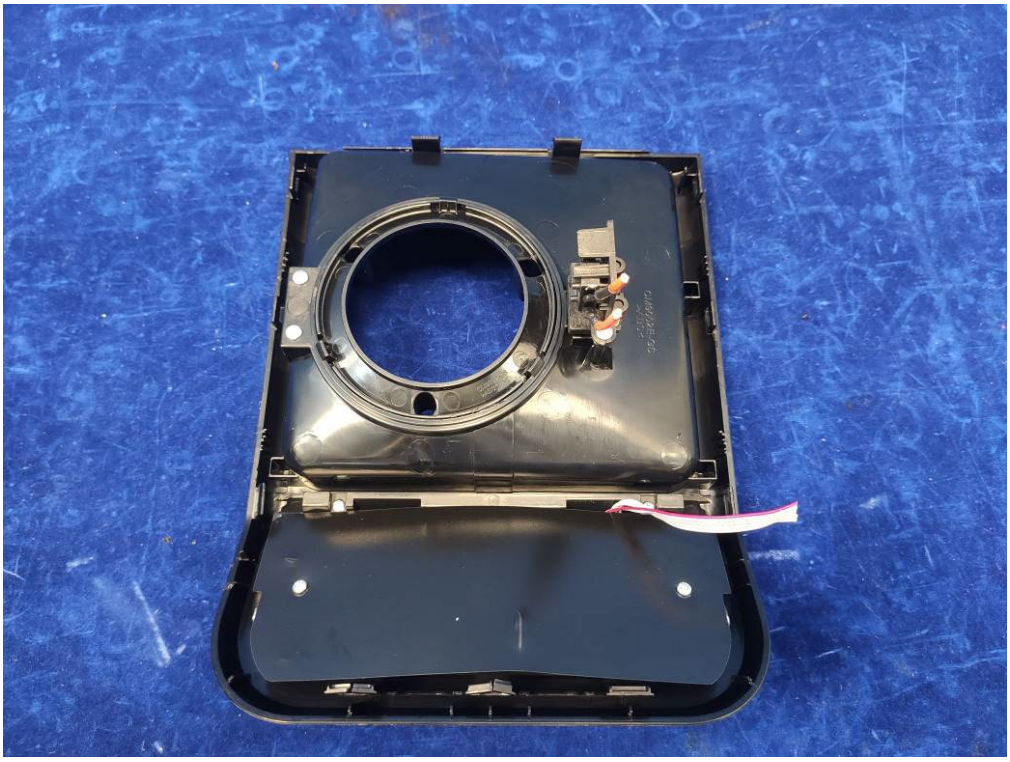
Vrms at the end of test (Volt):	230.02			
Highest dt (%):		Test limit (%):		
T-max (mS):	0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	1.38	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.926	Test limit:	1.000	Pass

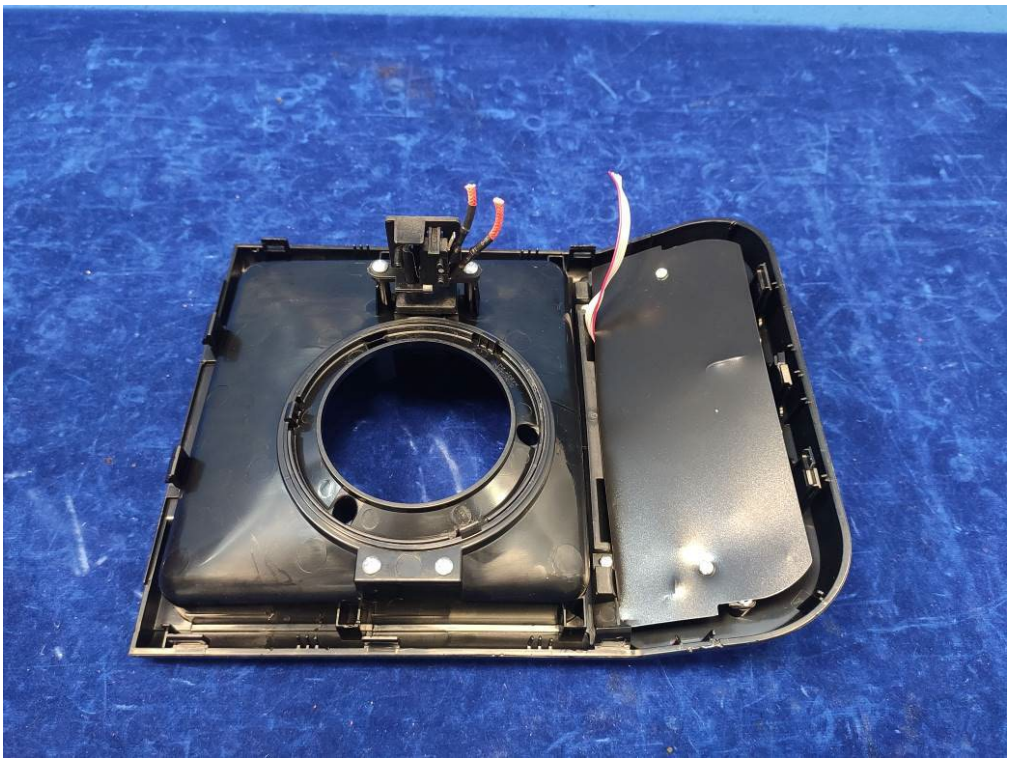
11 APPENDIX B – PHOTOS OF EUT

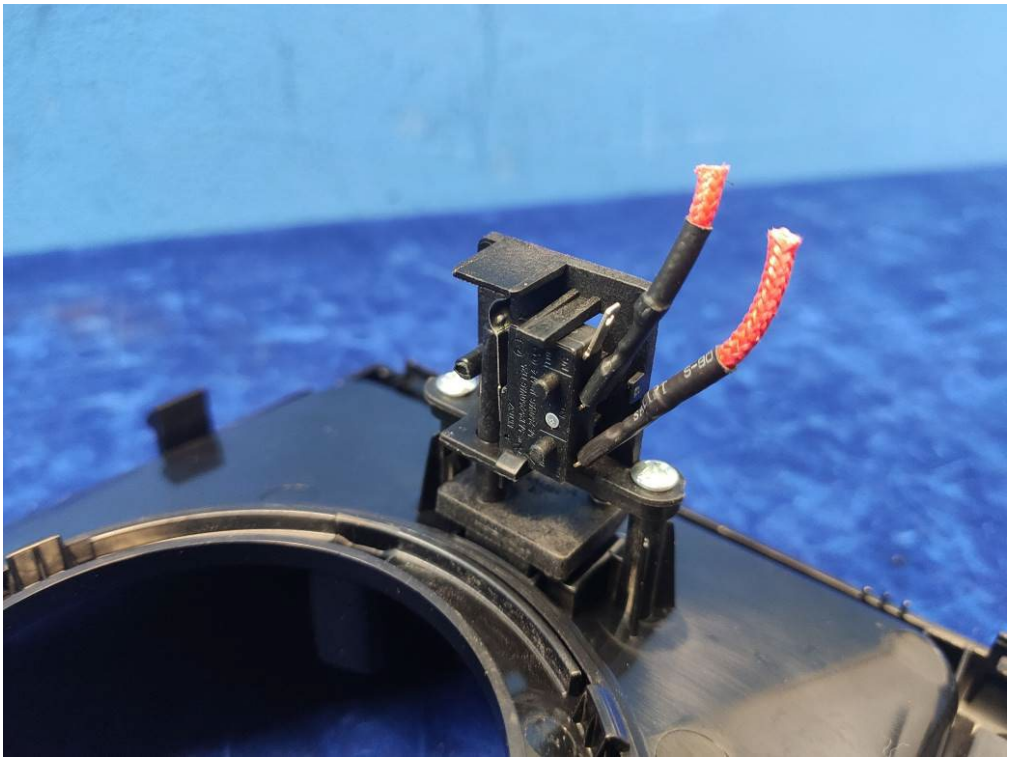

Max

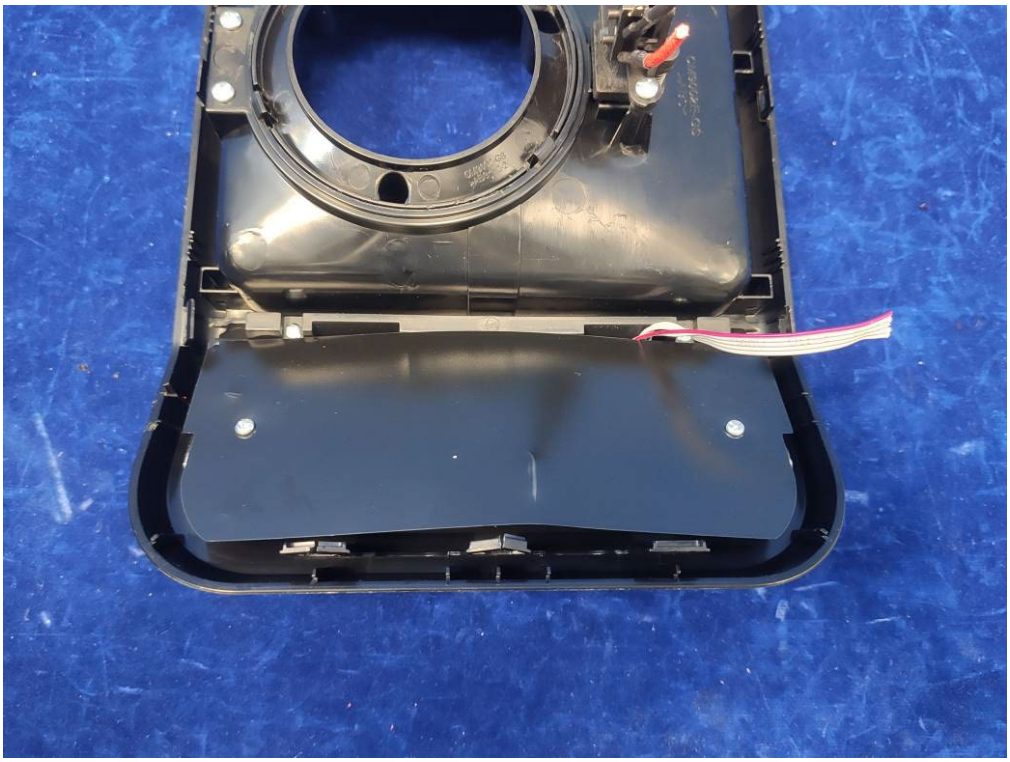


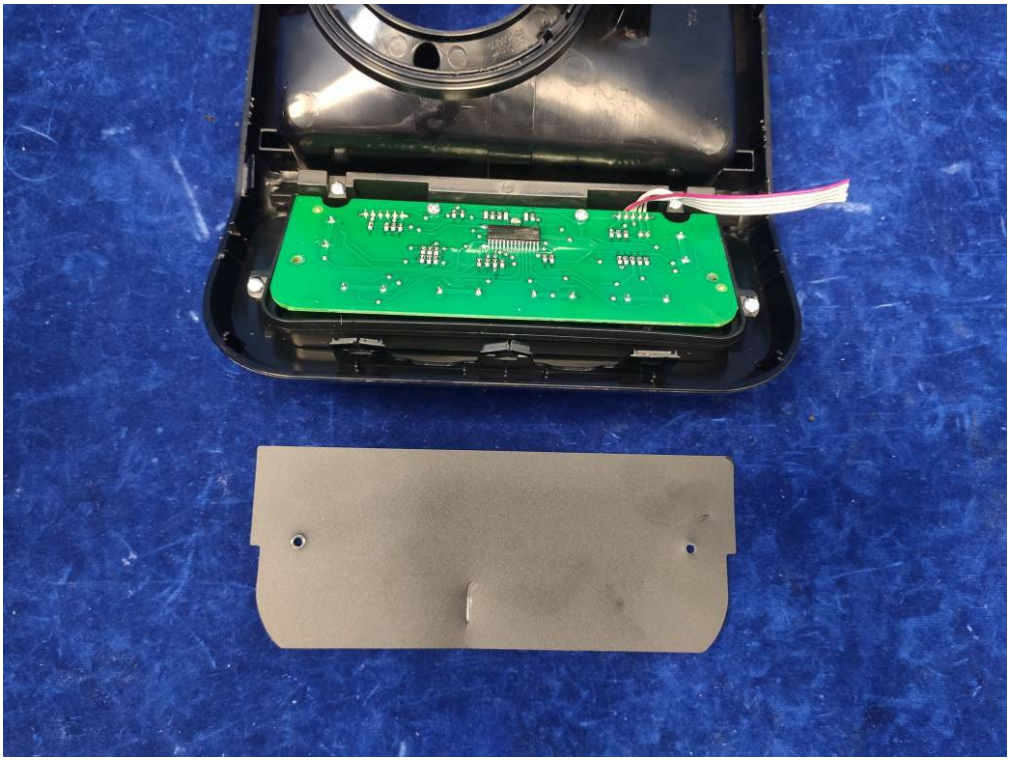


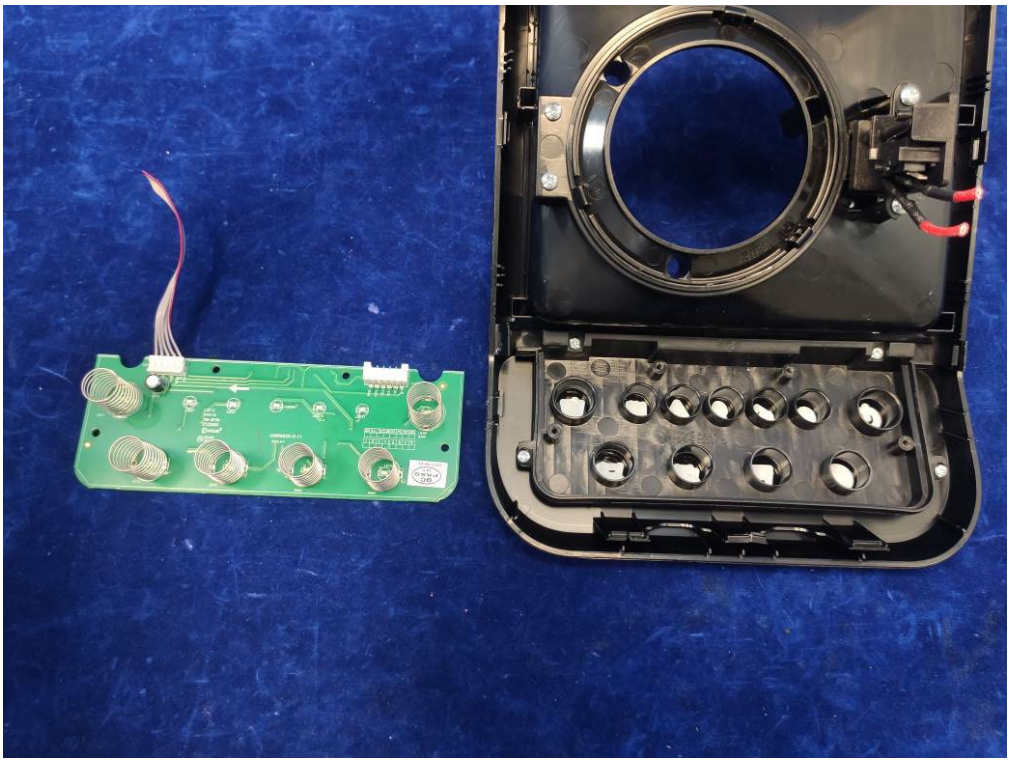


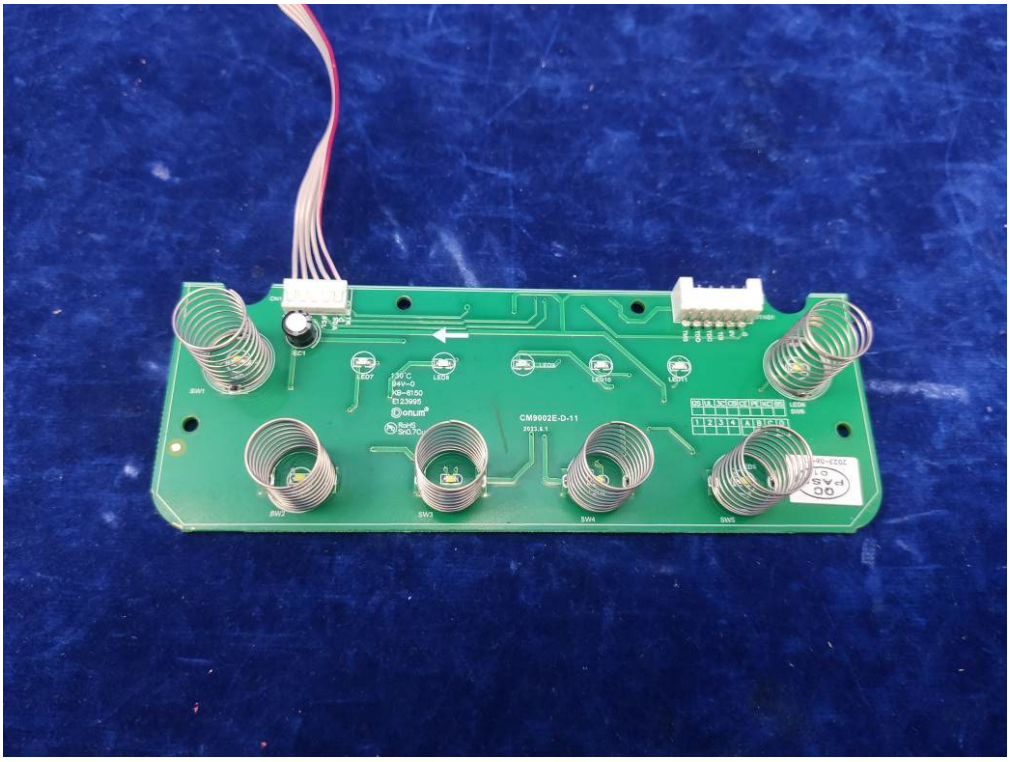








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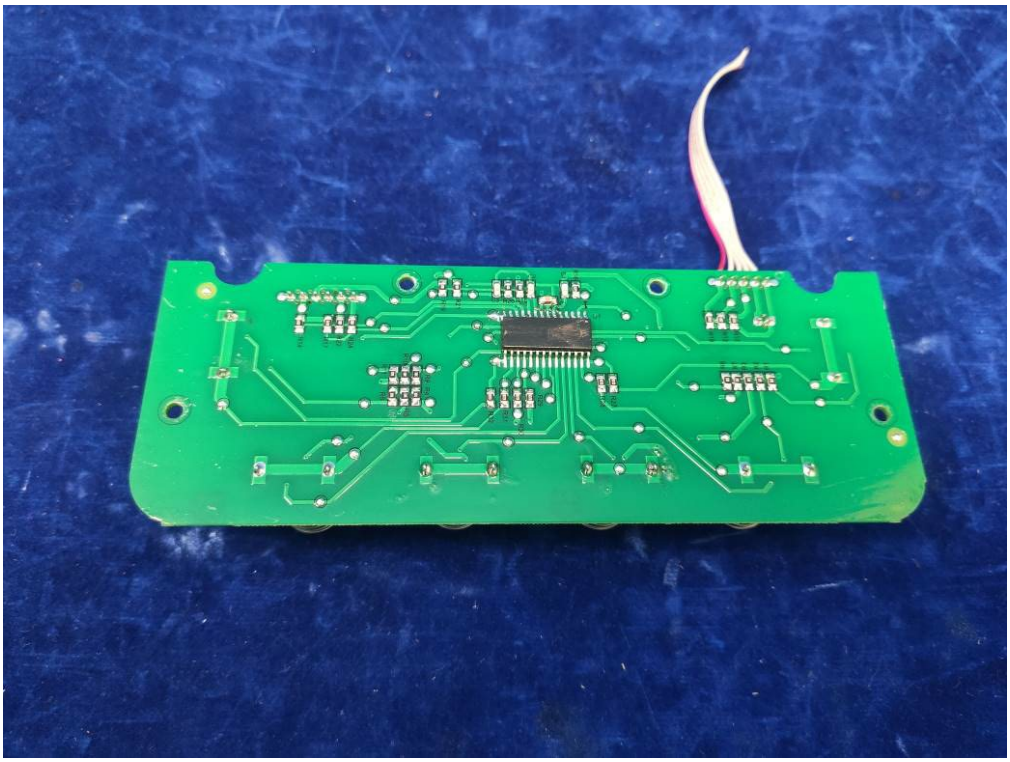
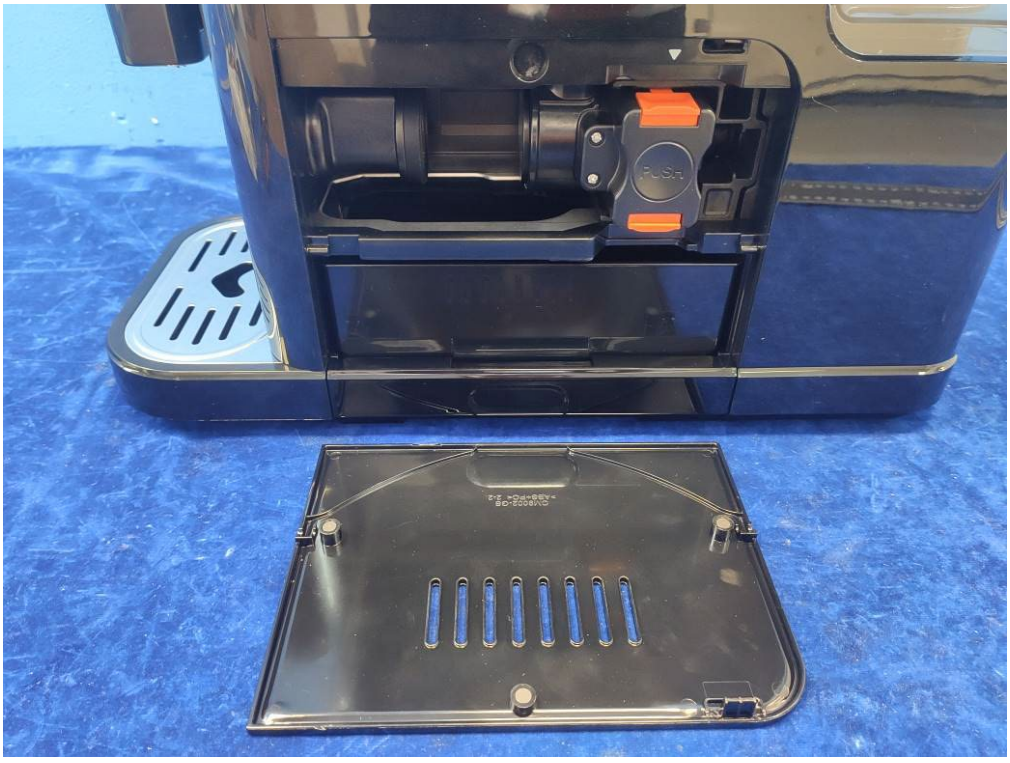
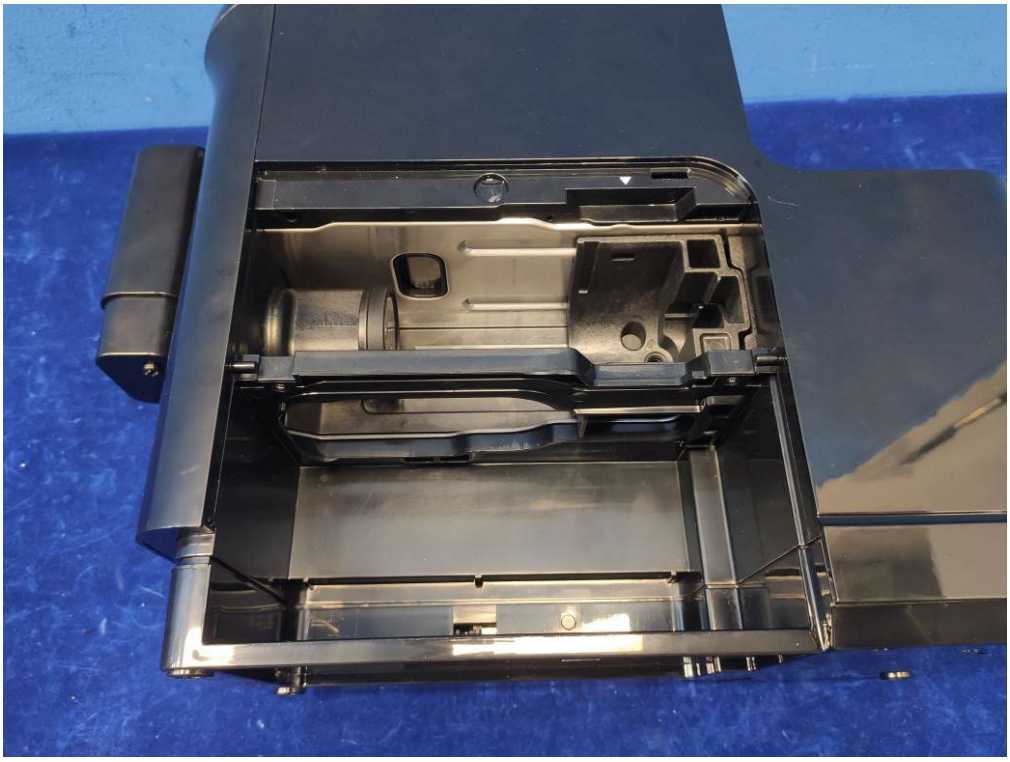
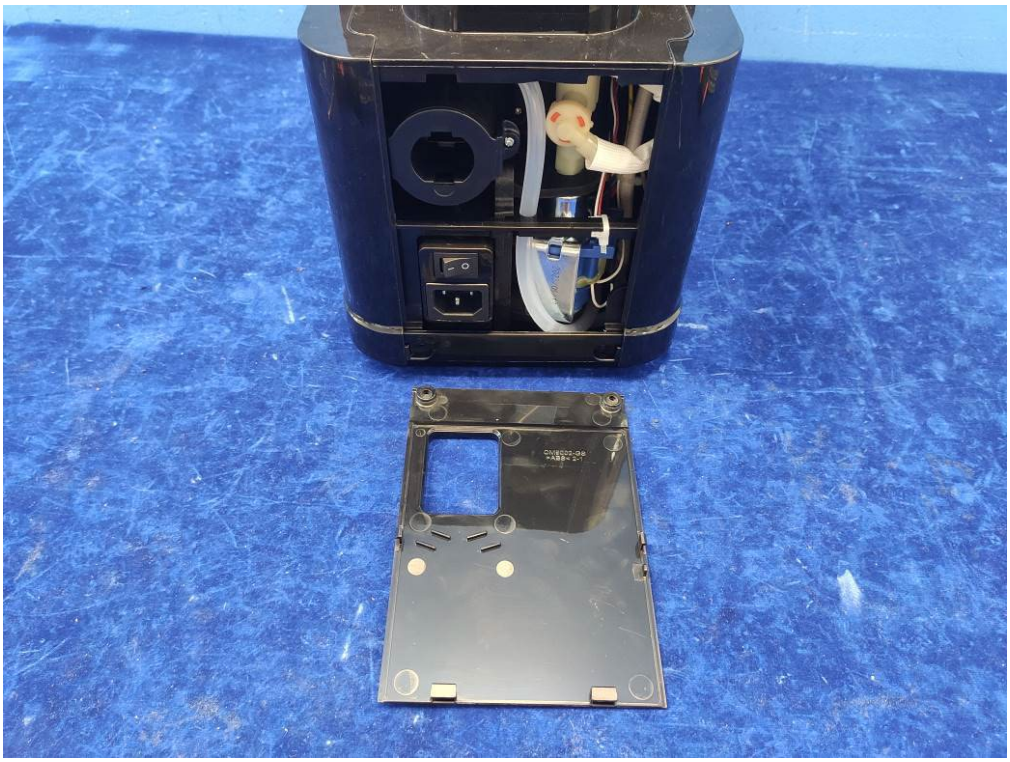
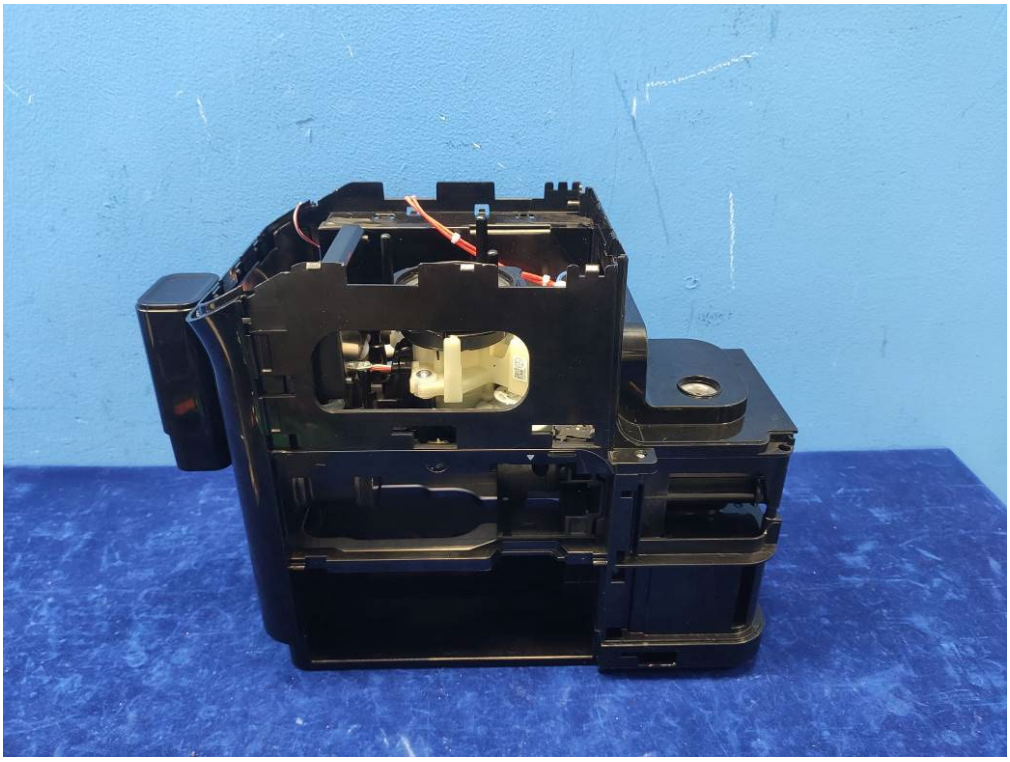
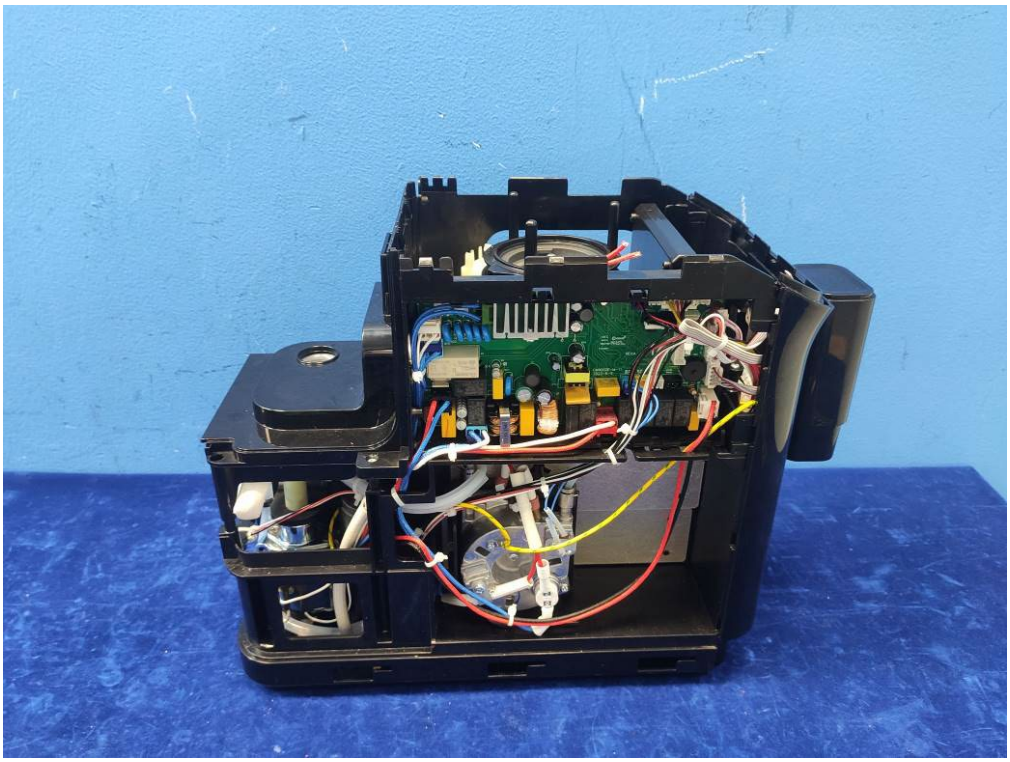


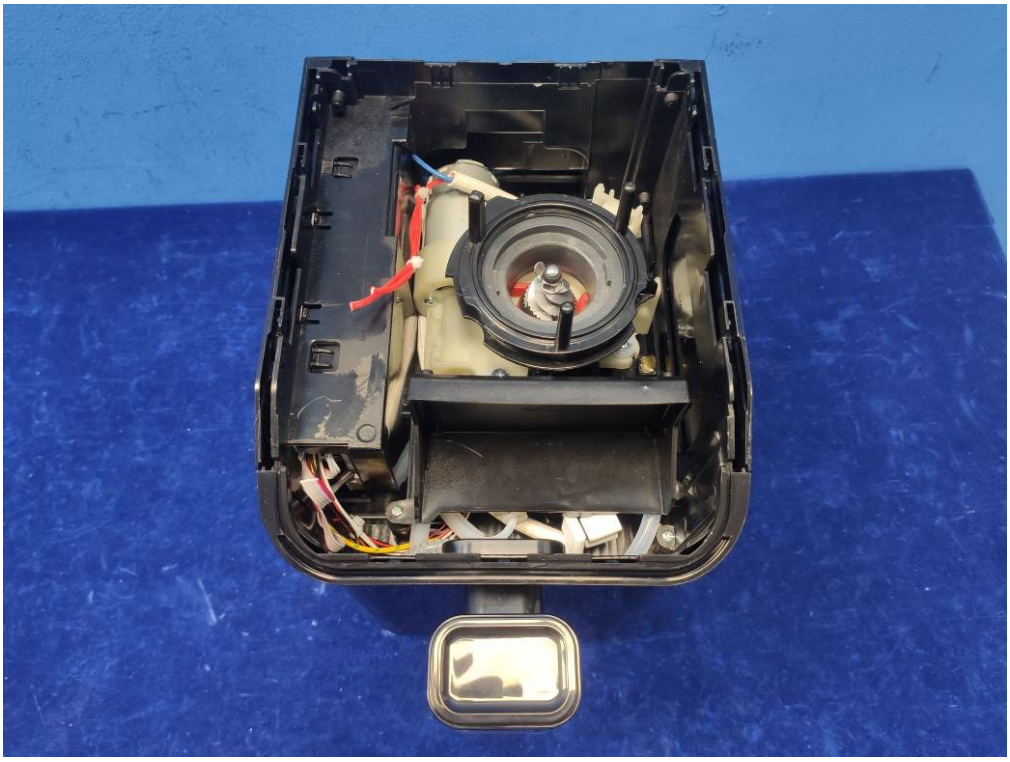

PUSH

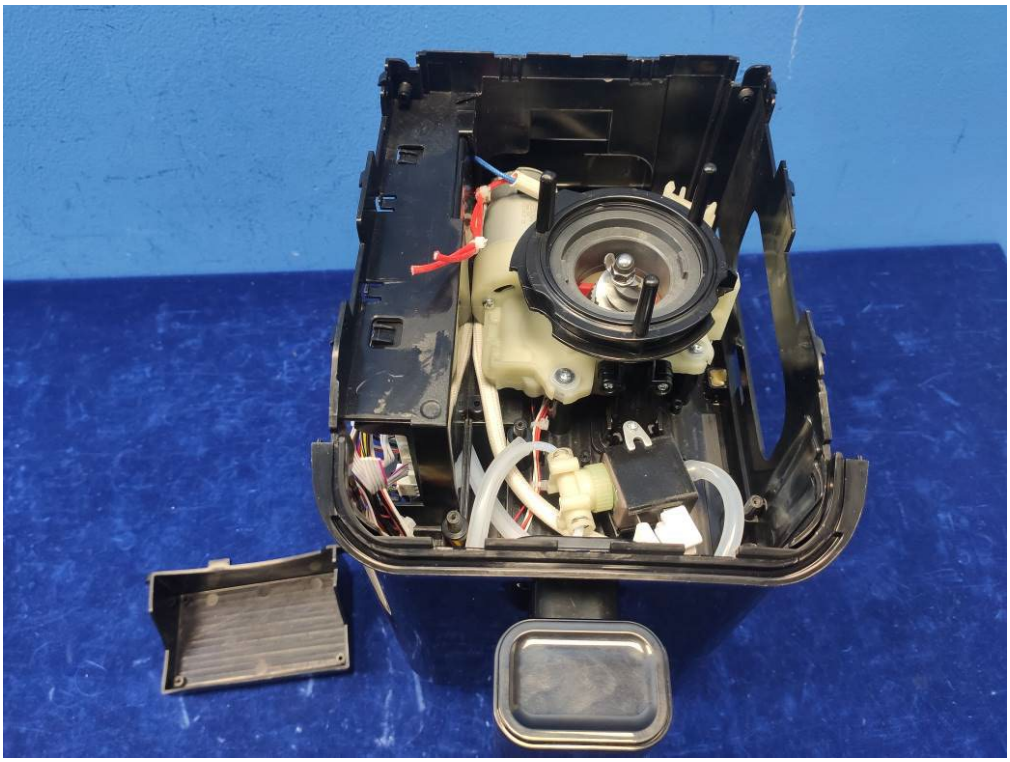


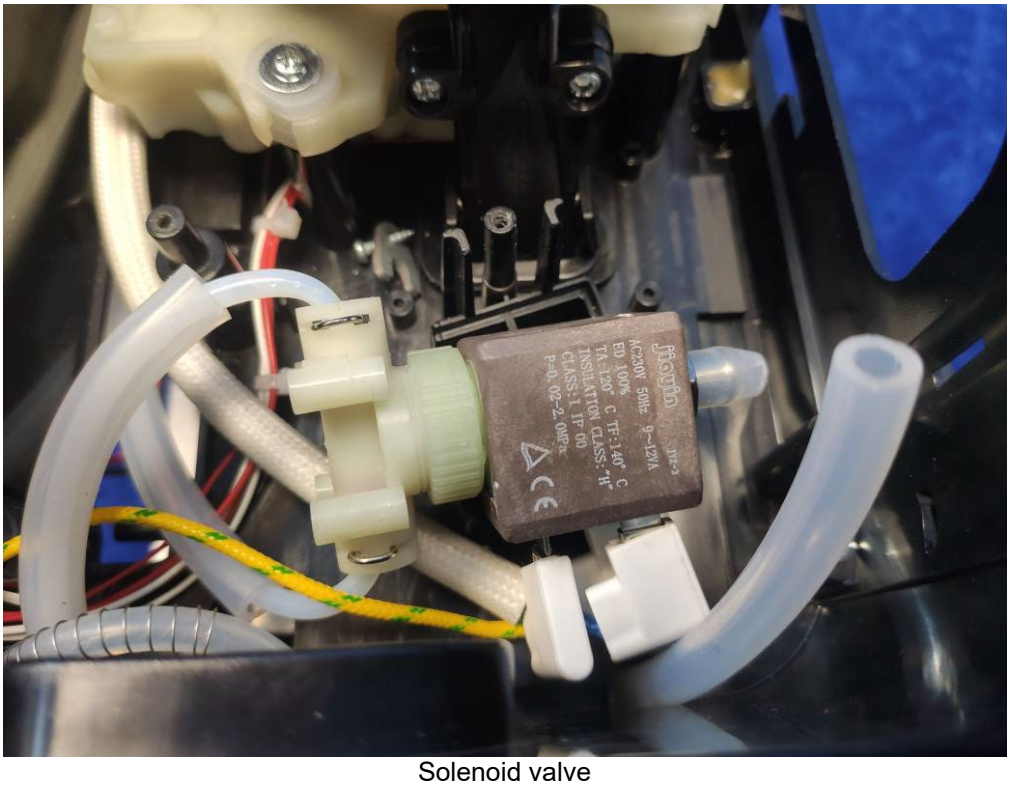




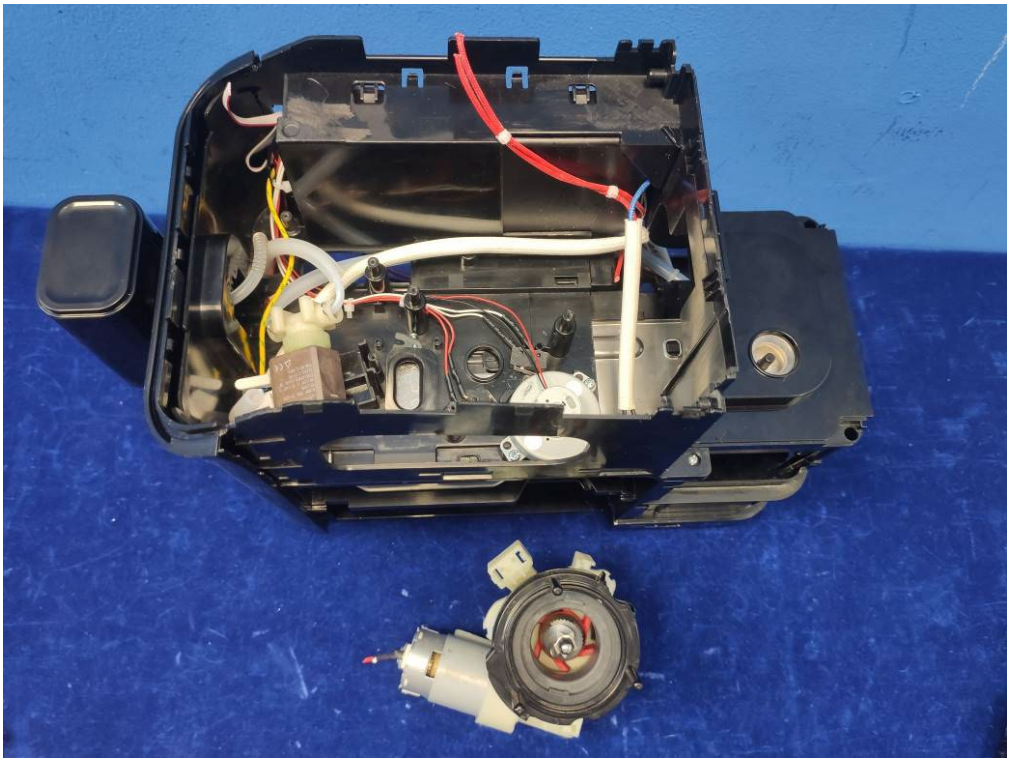


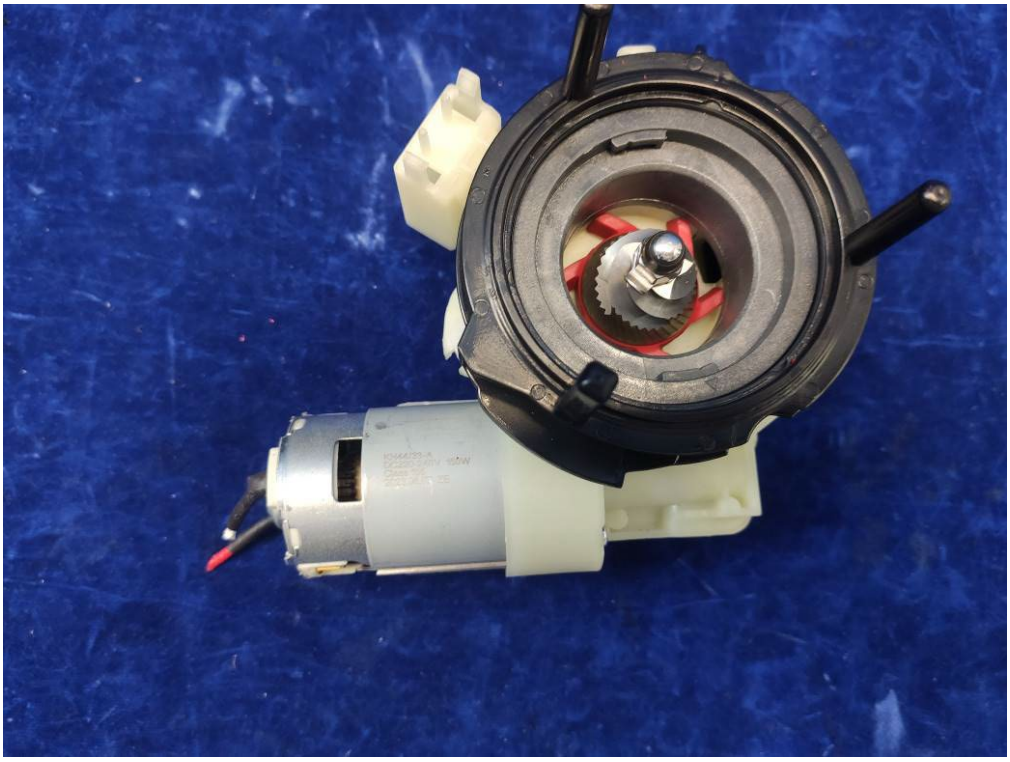




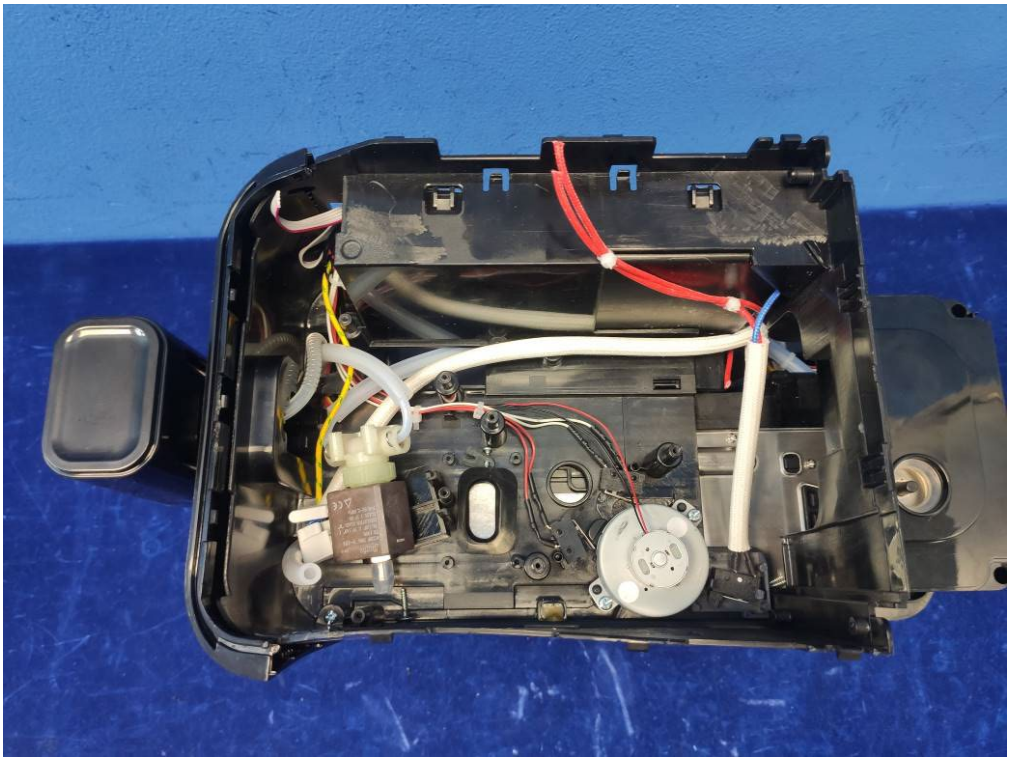


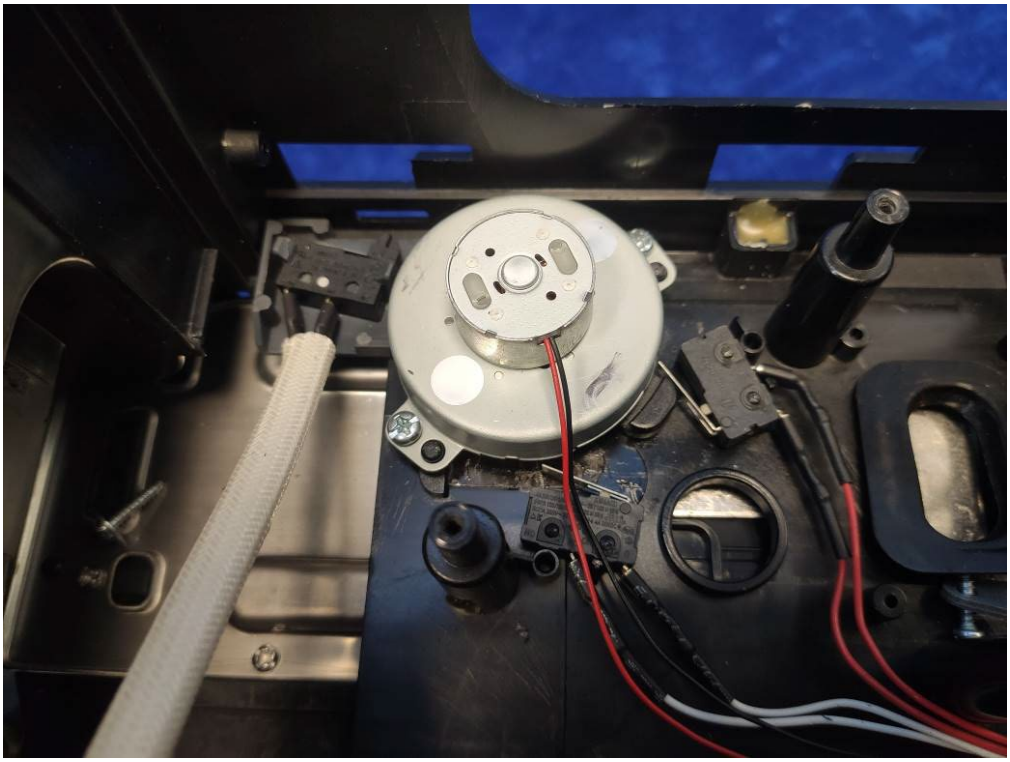
Solenoid valve

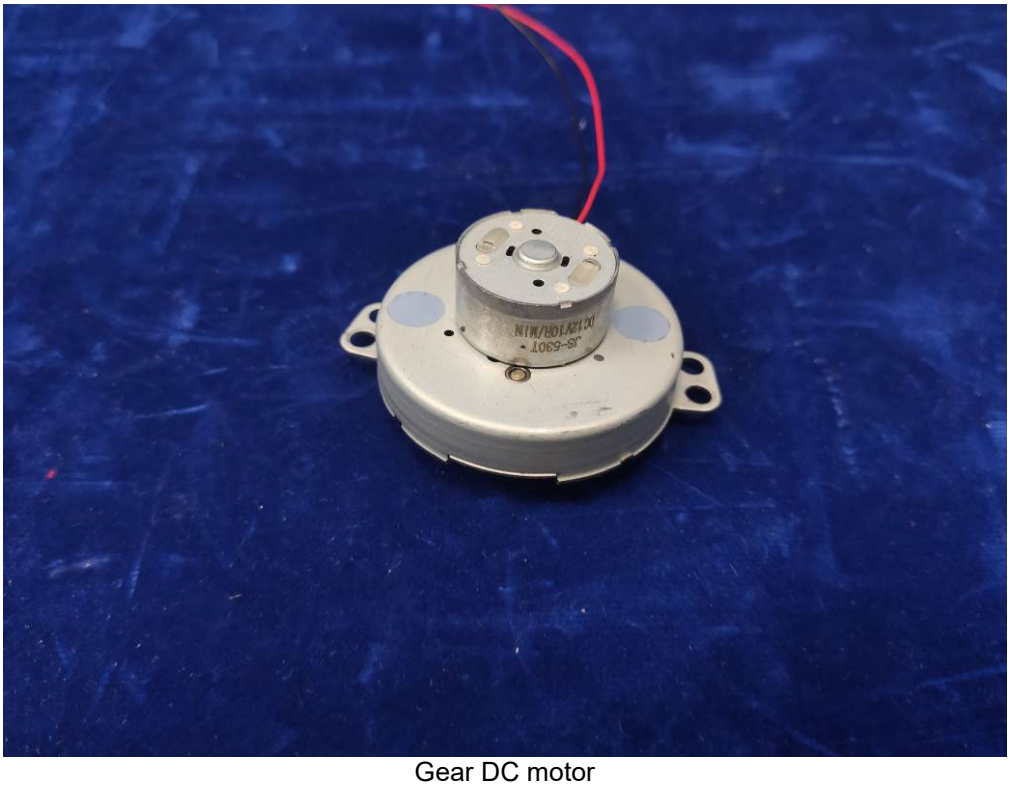




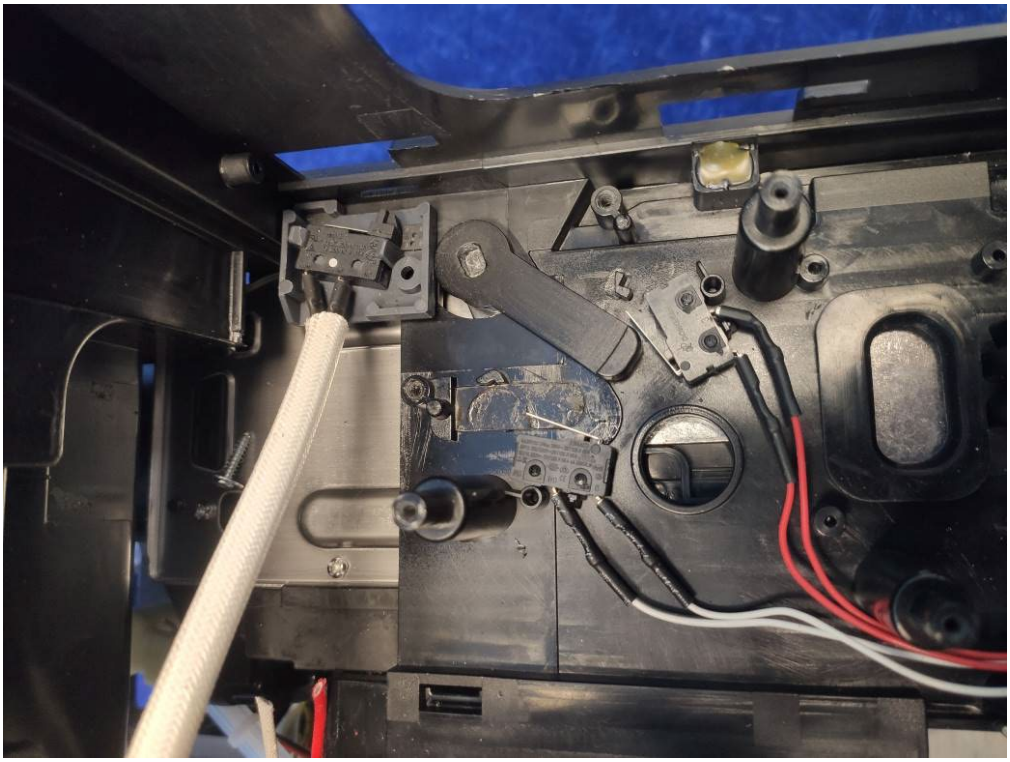
Grinder Motor

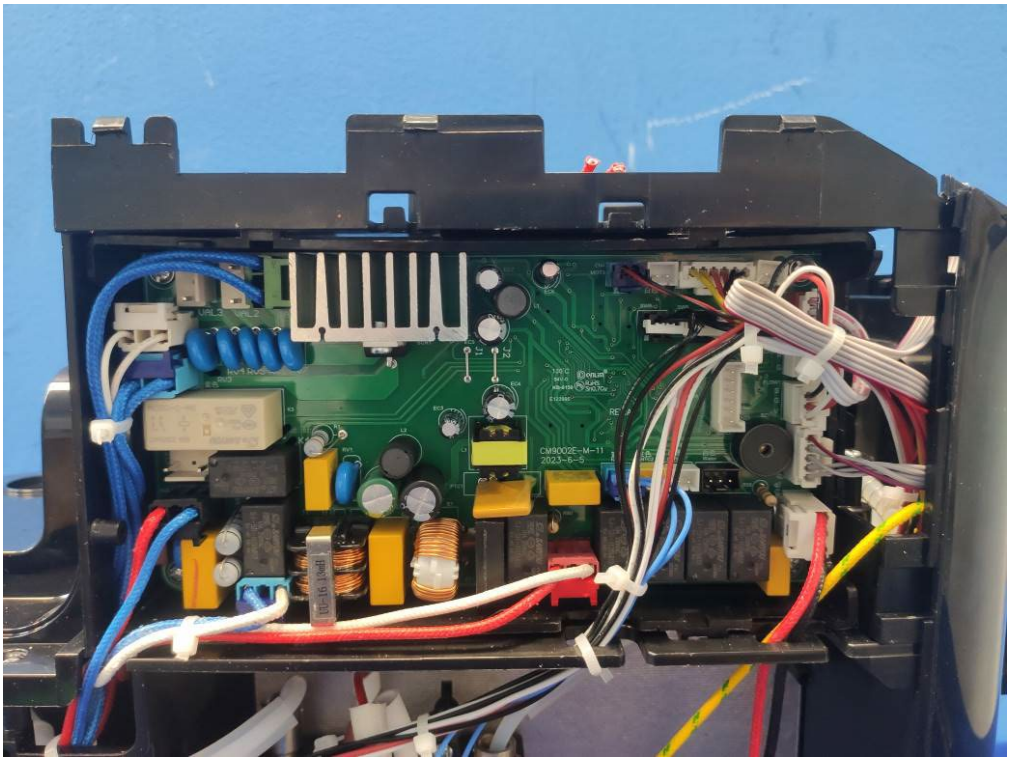


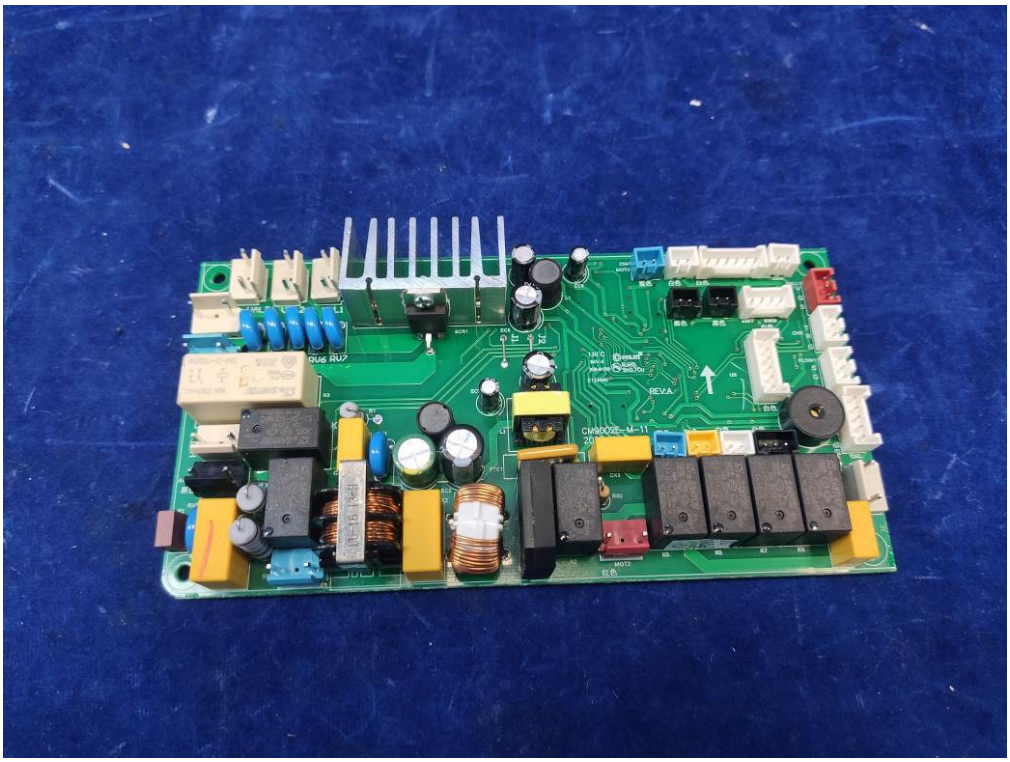




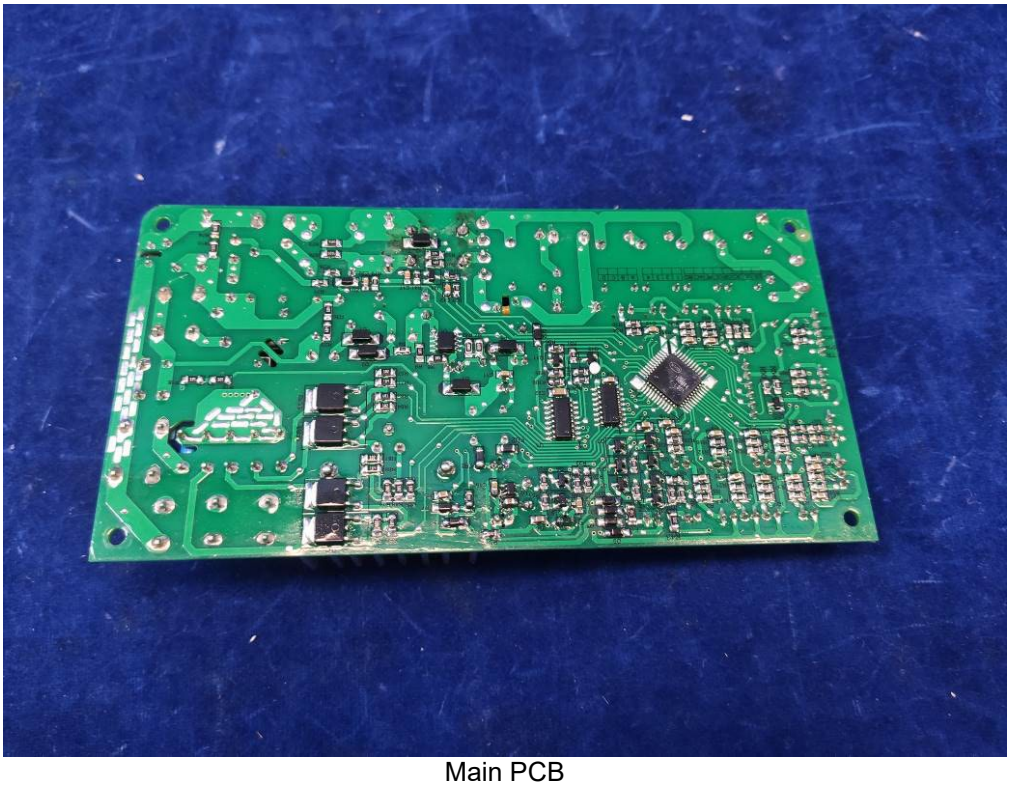
Gear DC motor



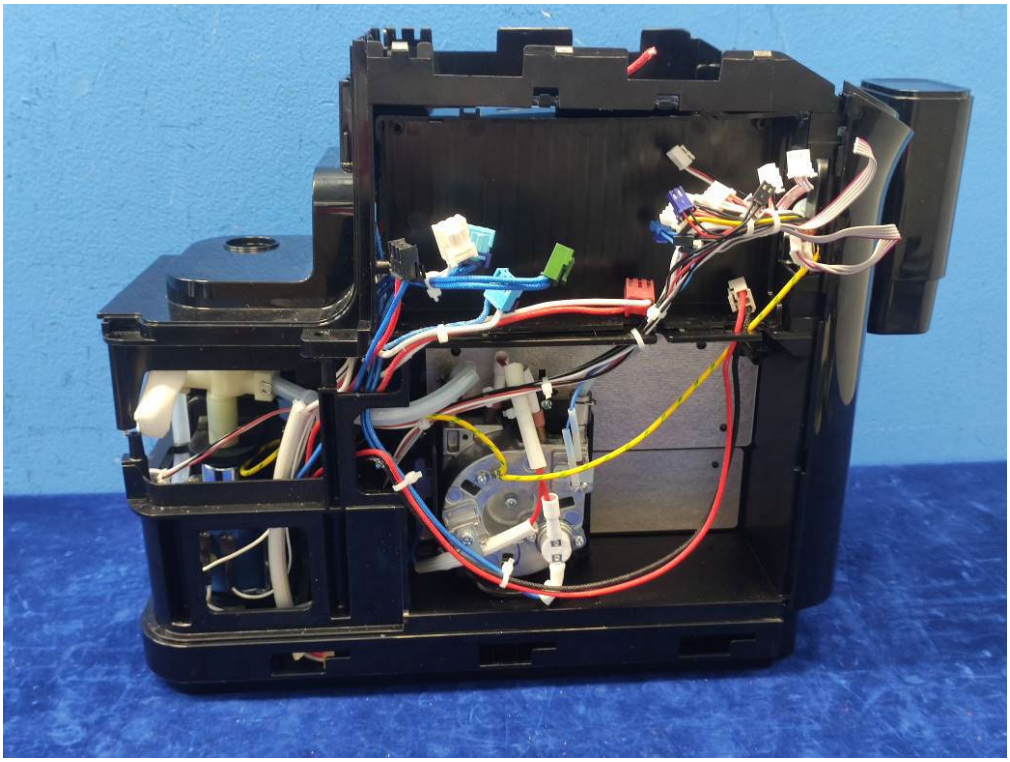


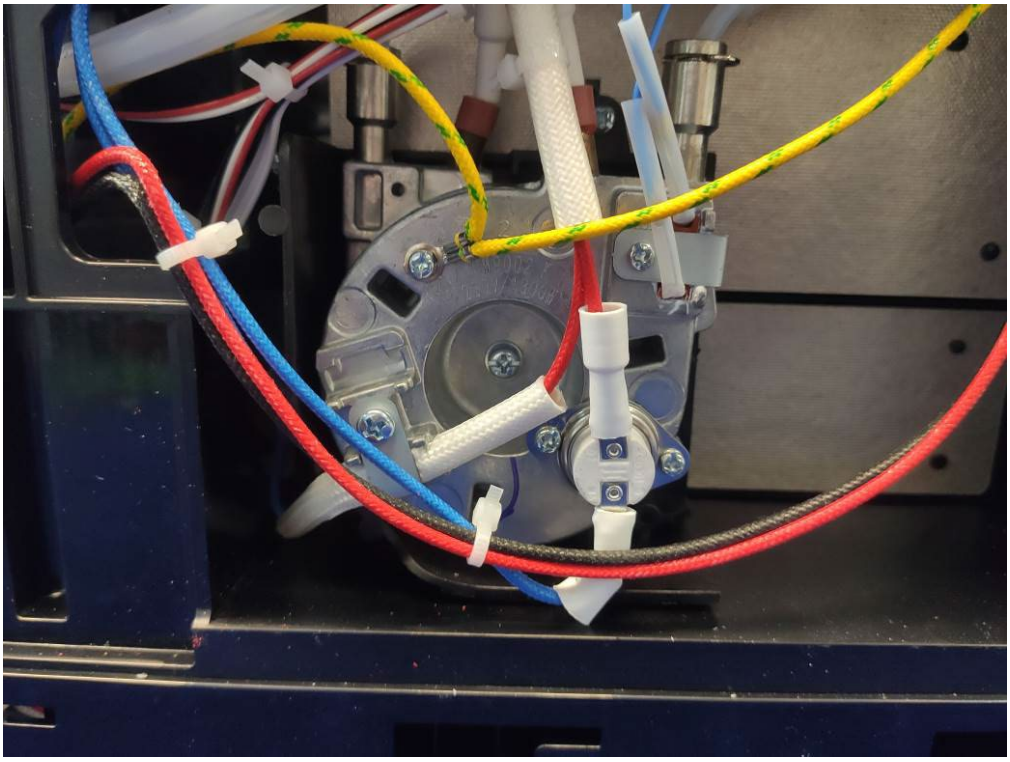


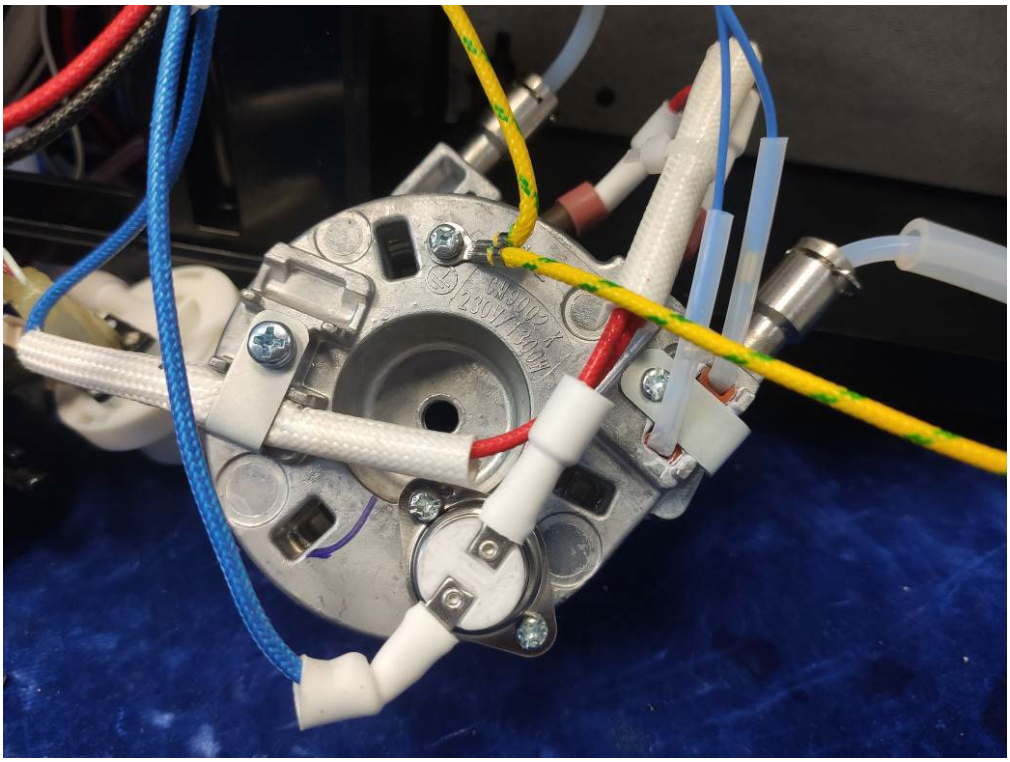
Main PCB

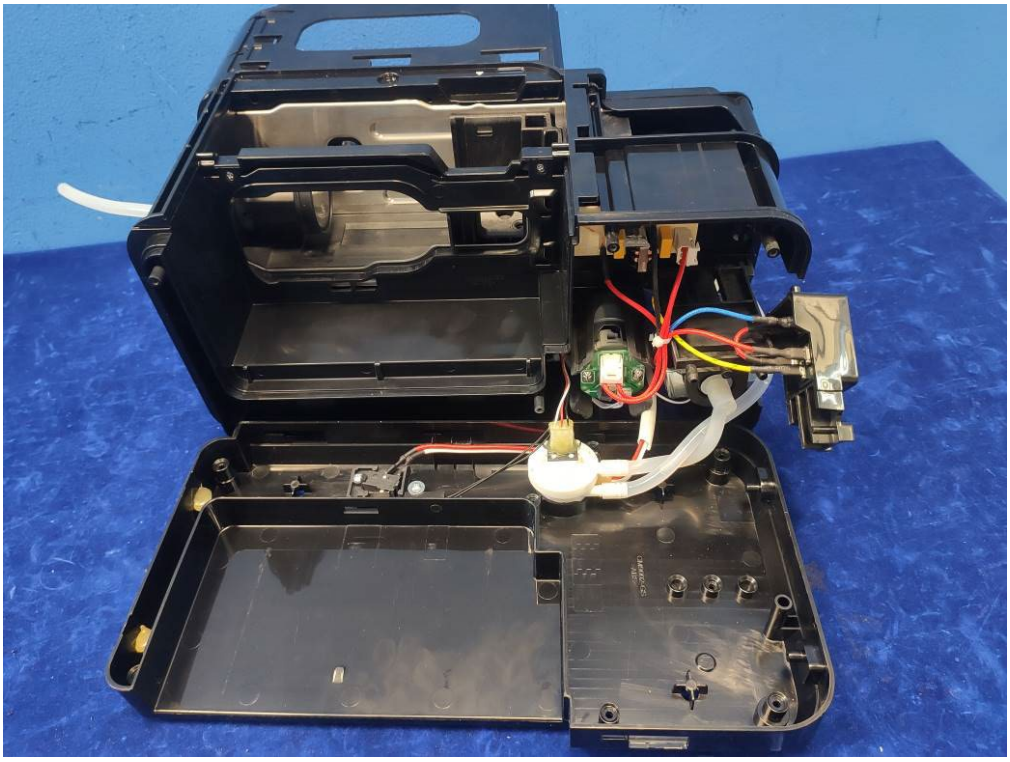


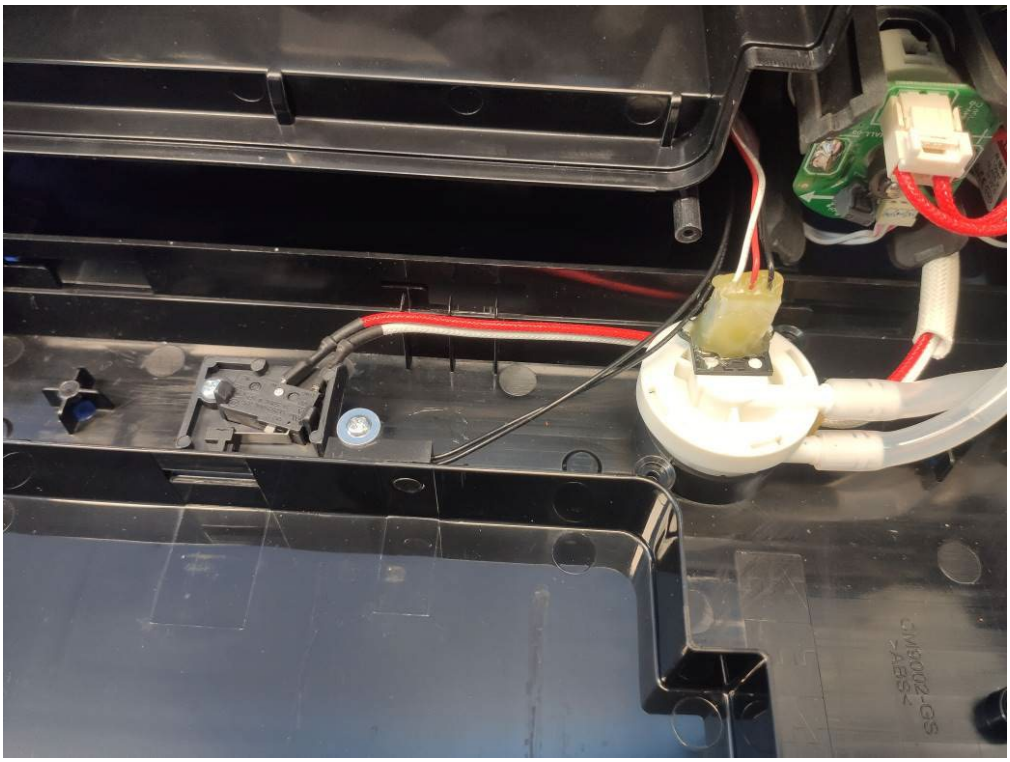
Main PCB

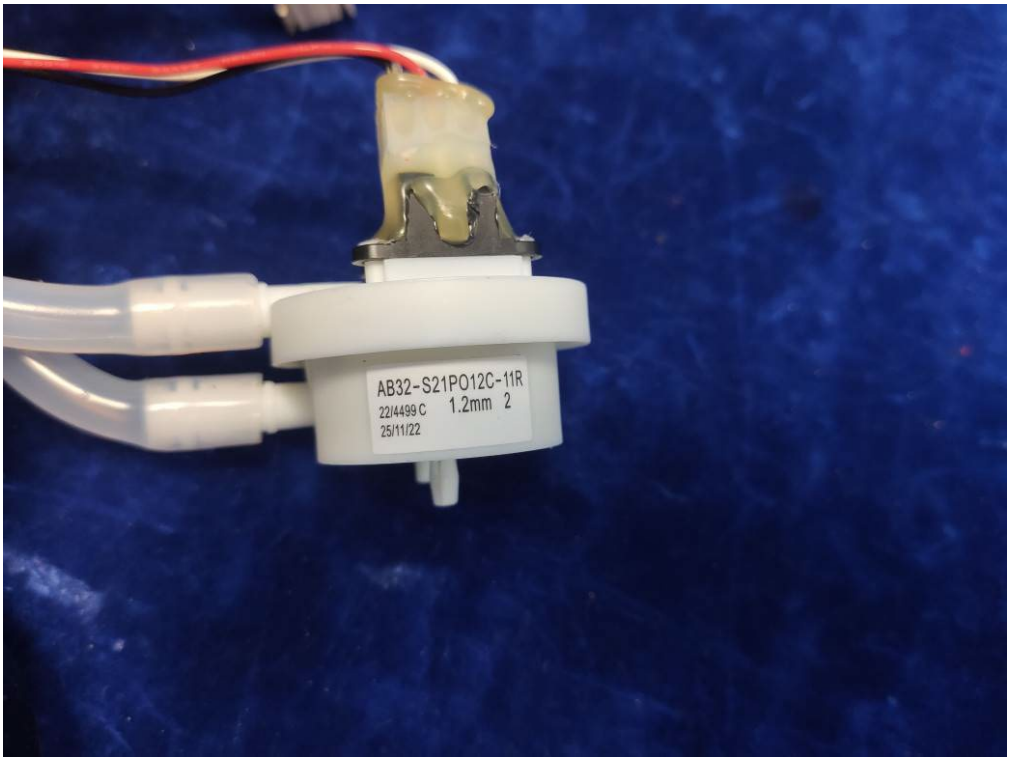


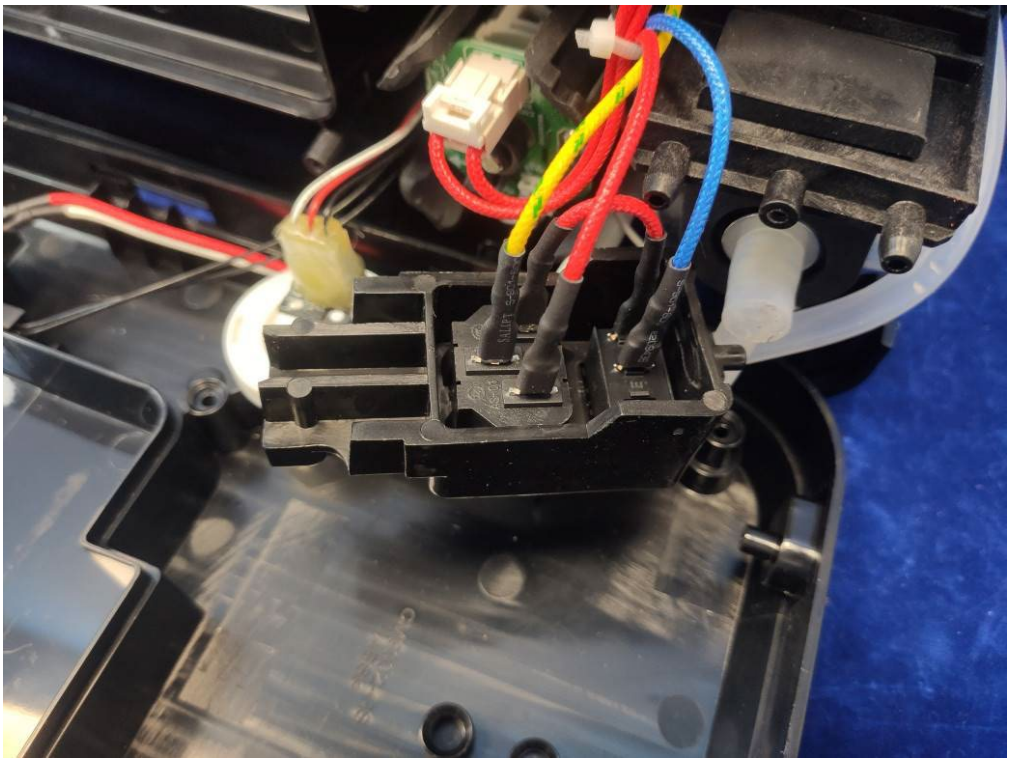


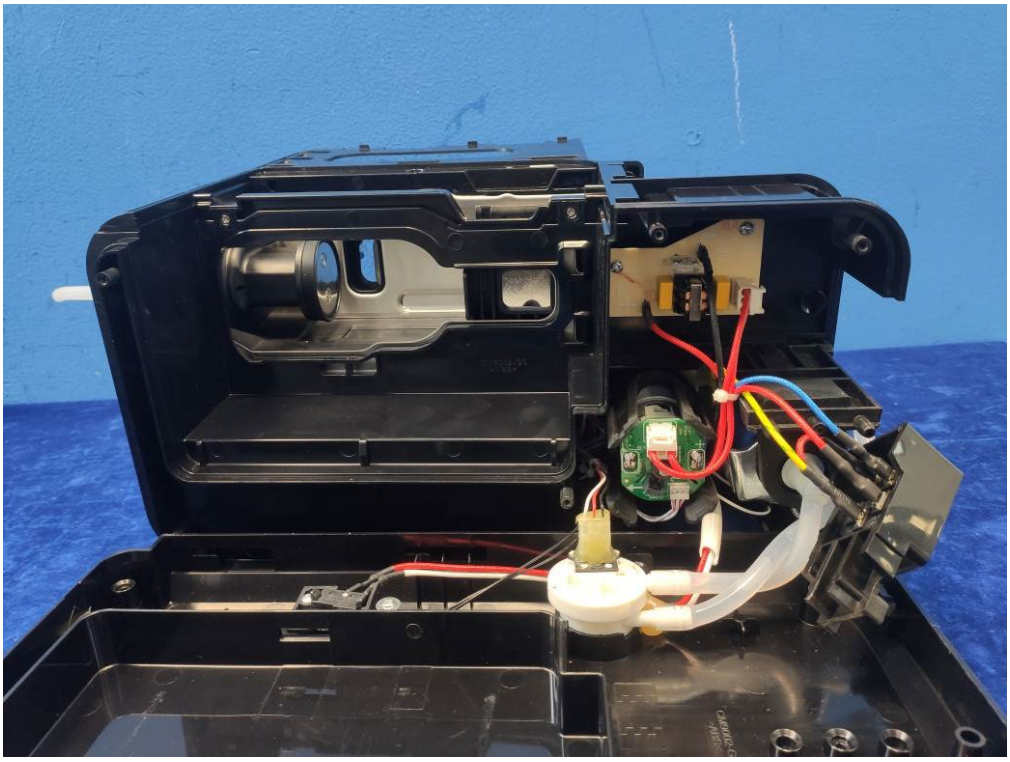


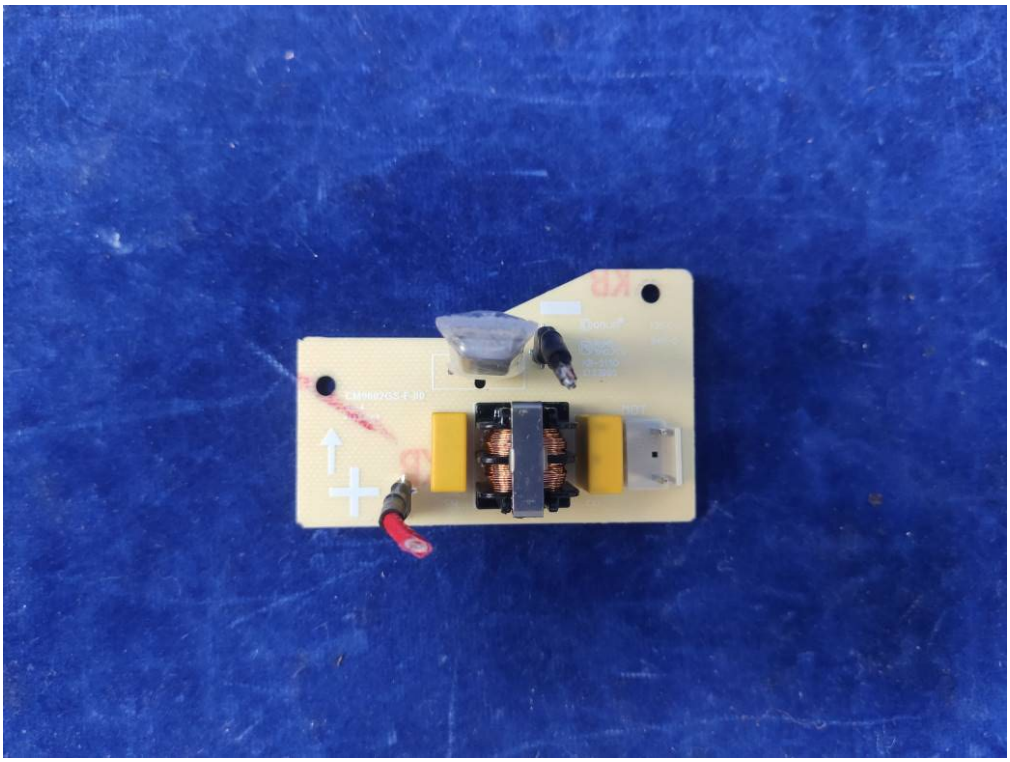




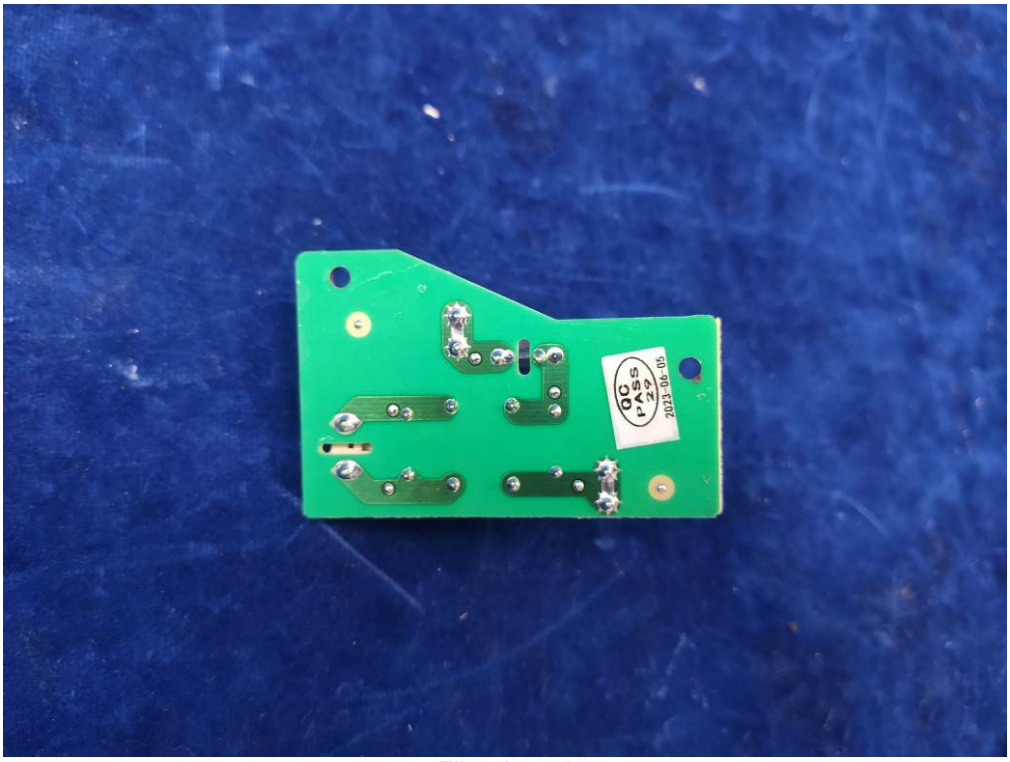

AB32-S21PO12C-11R
22/4499 C 1.2mm 2
25/11/22



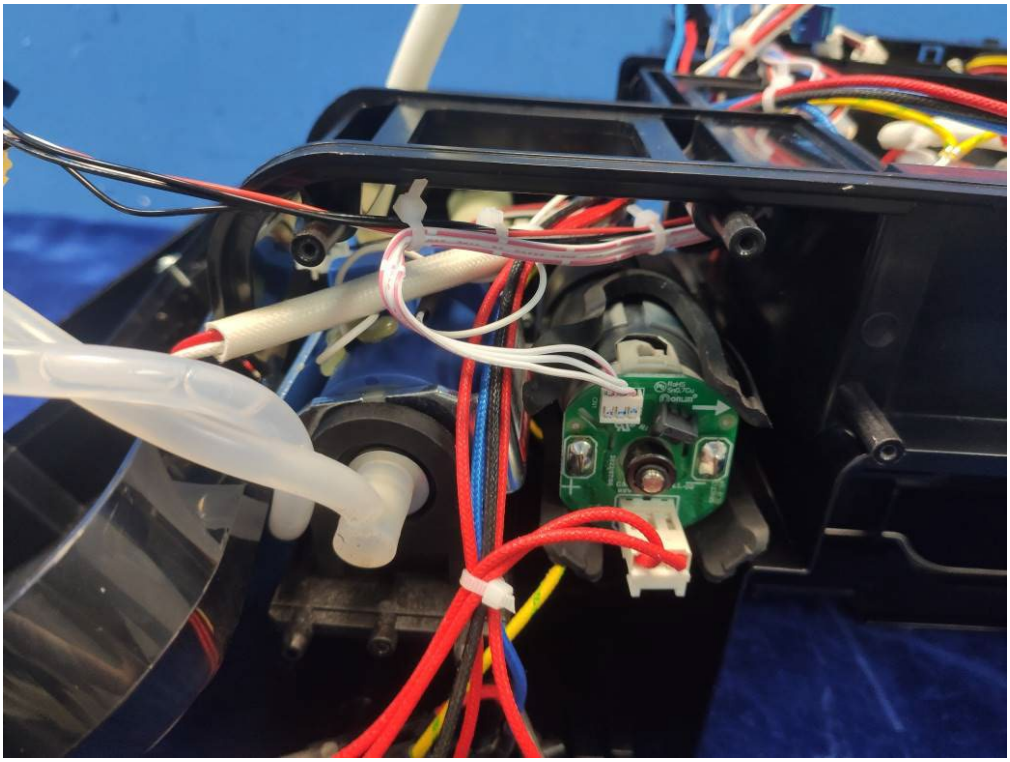


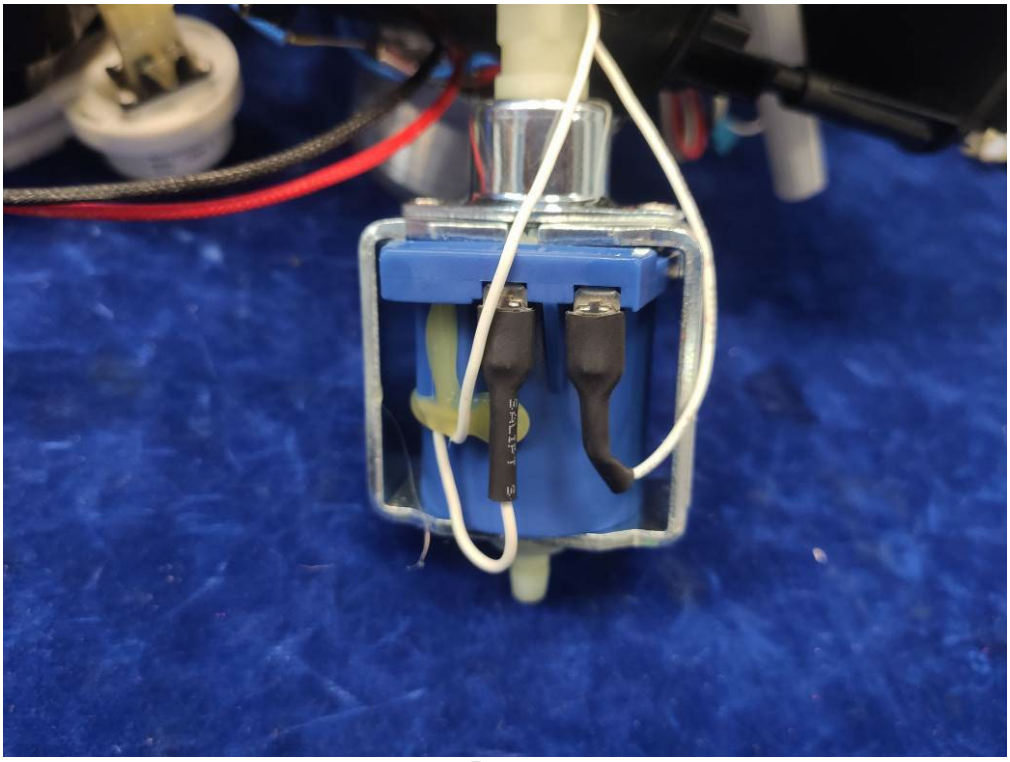


Filter board

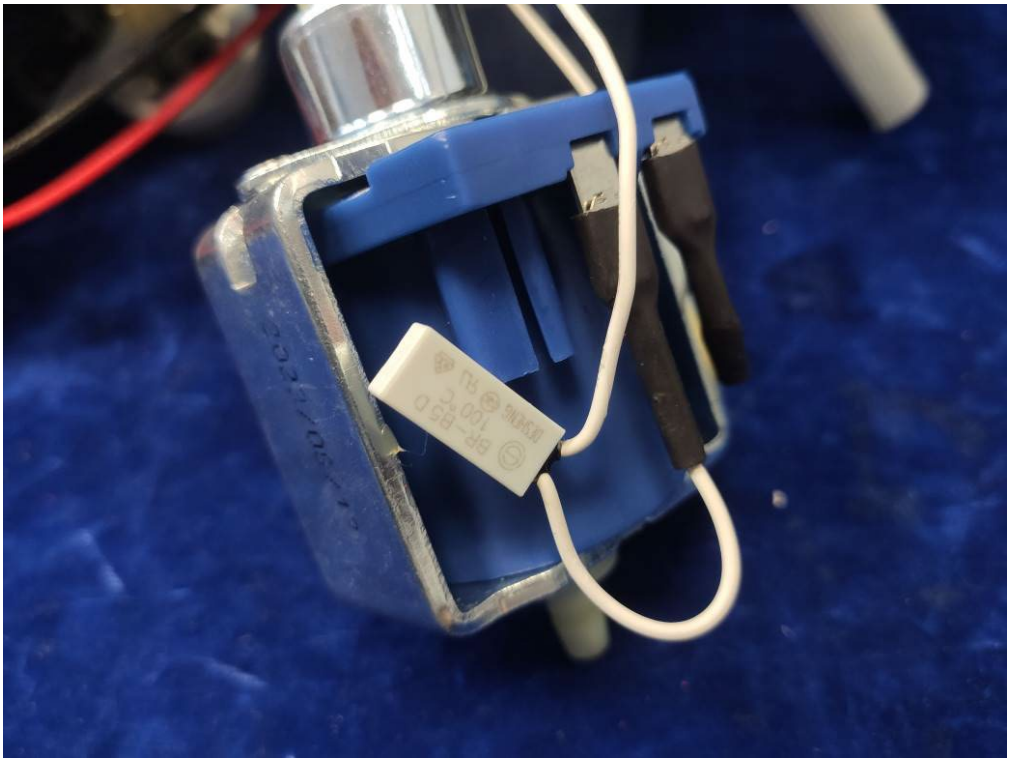


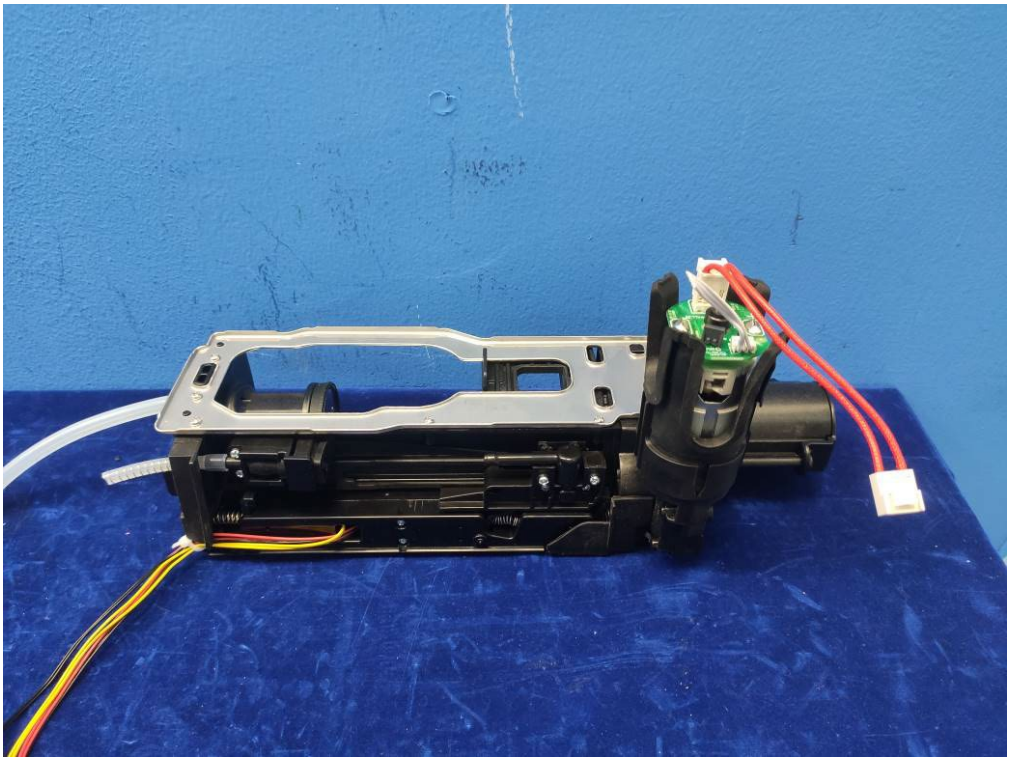
Filter board

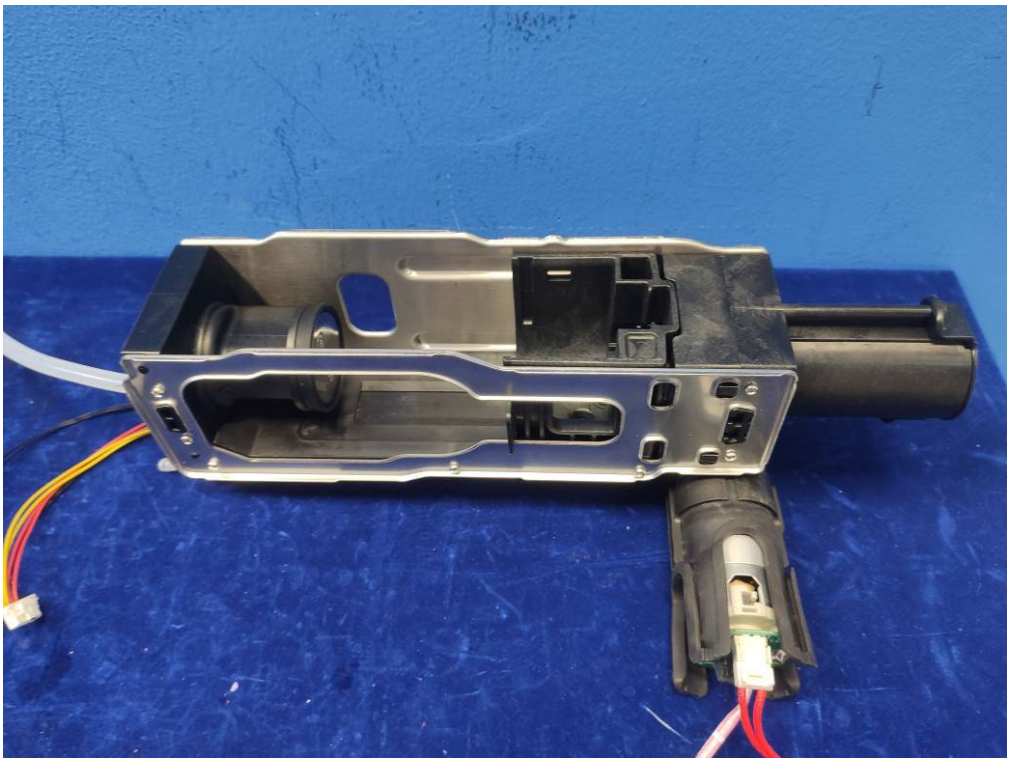


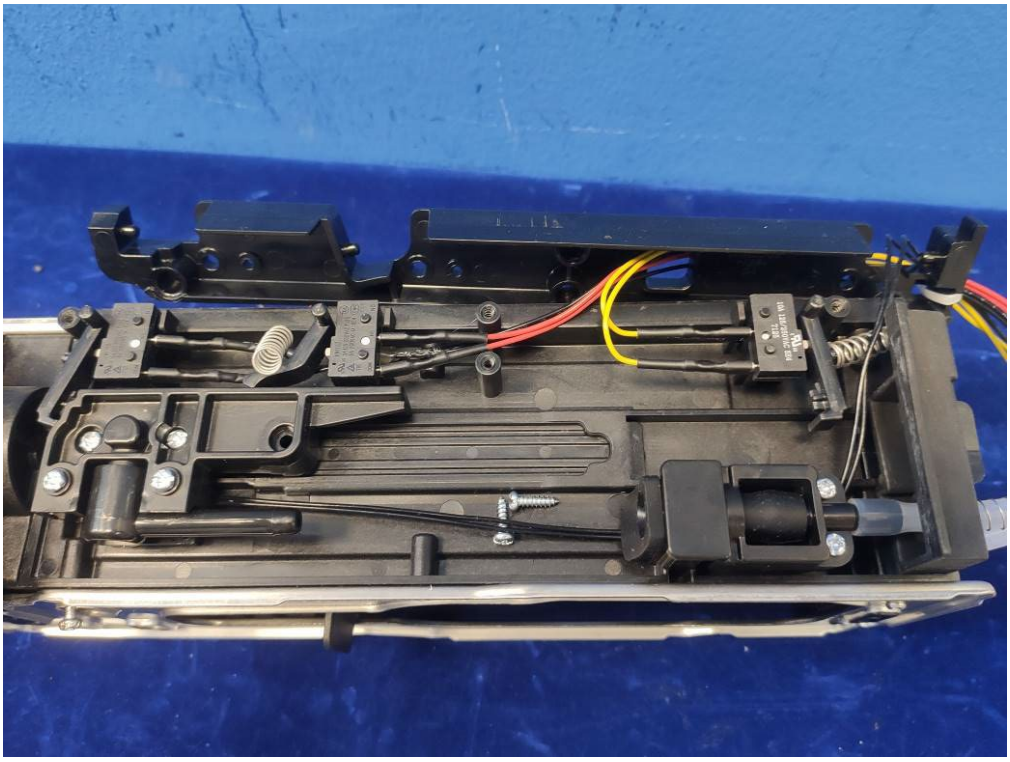


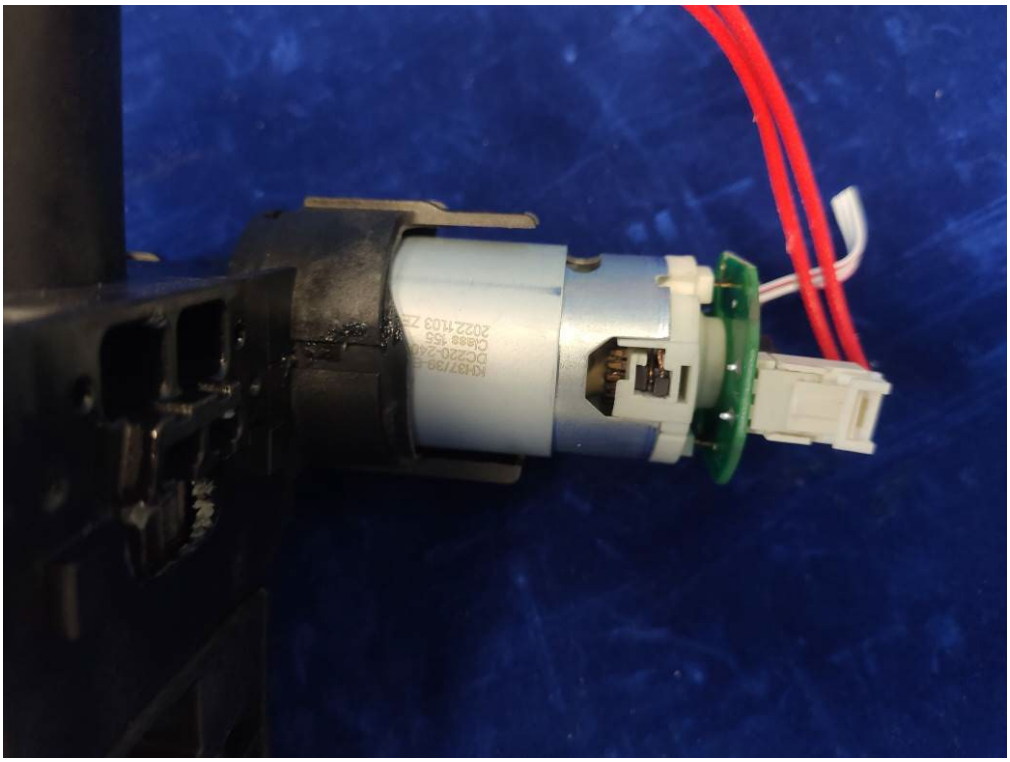
Pump











Brewing motor

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