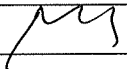
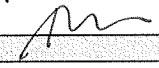


TEST REPORT IEC 60335-2-2 Household and similar electrical appliances – Safety – Part 2-2: Particular requirements for vacuum cleaners and water- suction cleaning appliances	
Report Number	140700052SHA-001
Date of issue	2014-09-29, Amendment 4: 2016-08-15
Total number of pages	35 pages(including 11 pages photos)
Applicant's name Address	
Test specification: Standard IEC 60335-2-2:2009 (Sixth Edition) + A1:2012 in conjunction with IEC 60335-1:2010 (Fifth Edition) (incl. Corrigendum 1:2010 and Corrigendum 2:2011) EN 60335-2-2:2010+A11:2012+A1:2013 used in conjunction with EN 60335-1:2012+A11:2014+AC:2014 EN 62233:2008 Test procedure CE-LVD Non-standard test method.....: N/A	
Test Report Form No.....	IEC60335_2_2F
Test Report Form(s) Originator.....	LCIE
Master TRF	Dated 2013-04
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Test item description	Ash vacuum cleaner for household use
Trade Mark	--
Manufacturer.....	
Model/Type reference	MWA301G-*-, MWA301BG-*-, MWA301DG-*-, MWA301DBG-*-, MWA301C-*-, MWA301BC-*-# *= 15L, 18L,20L or 25L; #= 800W,1000W or 1200W; MWA302-*-, MWA302B-*-, MWA302K-*-, MWA302KB-*-#; *= 15L, 18L,20L or 25L; #= 700W or 800W; MWA401G-*-, MWA401BG-*-, MWA401C-*-, MWA401BC-*-# *= 12L,15L, 18L, 20L or 23L; #= 700W, 800W, 800WB, 1000WA, 1000WB, 1200WA, 1200WB; MWA601G-*-, MWA601BG-*-, MWA601C-*-, MWA601BC-*-# *= 12L,15L, 18L, 20L or 23L; #=800WB, 1000WA
Ratings	220-240V~, 50/60Hz, Class II # = 700W: 700W, # = 800W: 800W, # = 1000W: 1000W, # = 1200W: 1200W, # = 800WB: 800W, # = 1000WA: 1000W, # = 1000WB: 1000W, # = 1200WA: 1200W, # = 1200WB: 1200W,

Testing procedure and testing location:		
☒	Testing Laboratory:	Intertek Testing Services Shanghai
Testing location/ address		Building No. 86, 1198 Qinzhou Road (North) 200233 Shanghai CHINA
☐	Associated CB Testing Laboratory:	
Testing location/ address		
Tested by (name + signature)		Michael Shi 
Approved by (name + signature)		Bright Zhou 
☐	Testing procedure: TMP	
Testing location/ address		N/A
Tested by (name + signature)		N/A
Approved by (name + signature)		N/A
☐	Testing procedure: WMT	
Testing location/ address		N/A
Tested by (name + signature)		N/A
Witnessed by (name + signature)		N/A
Approved by (name + signature)		N/A
☐	Testing procedure: SMT	
Testing location/ address		N/A
Tested by (name + signature)		N/A
Approved by (name + signature)		N/A
Supervised by (name + signature)		N/A

List of Attachments (including a total number of pages in each attachment): Appendix: none	
Summary of testing: Determination of the test result includes consideration of measurement uncertainty from the test equipment and methods. From the result of our inspection and tests on the submitted samples, we conclude that they comply with the requirements of the standards.	
Tests performed (name of test and test clause): The tests of cl.10, 11, 13, 15, 16, 19, 21, 22, 29, 30, Annex N and Annex EMF were conducted.	Testing location: Same as previous page
Summary of compliance with National Differences List of countries addressed: Germany and United Kingdom.	
Copy of marking plate(representative): The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks. 	

Test item particulars :
Classification of installation and use : Portable and household indoor use
Supply Connection : Type Y attachment :
Possible test case verdicts: - test case does not apply to the test object..... : N/A - test object does meet the requirement : P (Pass) - test object does not meet the requirement..... : F (Fail)
Testing : Date of receipt of test item : 2016-06-16 Date (s) of performance of tests..... : 2016-06-16 to 2016-08-15
General remarks: The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☒ comma / ☐ point is used as the decimal separator.
Manufacturer's Declaration per sub-clause 4.2.5 of IEC60335-1: The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... : ☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the General product information section.
Name and address of factory (ies)..... :

General product information:

The products covered in this report are single phase, cord connected, dry pickup vacuum cleaners intended for household and indoor use only and those appliances are intended to vacuum cord ash only which is ash cooled down for a sufficient time without any pockets of embers inside. This can be confirmed by scouring the ash for pockets of embers by using metal tools before using the ash vacuum cleaner. Cold ash does not emit any recognizable heat.

MWA301 series:

For model similarity, please see the following table:

Model	Pre-filter	Filter bag	HEPA filter	Base	Motor
MWA301G-*_#	Type A	Yes	No	No	ZG5822 for #=800W or 1000W; ZG5824 for #=1200W.
MWA301BG-*_#				Yes	
MWA301DG-*_#	Type B			No	
MWA301DBG-*_#				Yes	
MWA301C-*_#	No	Optional	Yes	No	
MWA301BC-*_#				Yes	

Besides that shown in the above table, they are marked with different model name and rated power input and employ different capacity of dust container.

MWA302 series:

For model similarity, please see the following table:

Model	Micro-switch	Pre-filter	HEPA filter	Base	Motor
MWA302-*_#	No	Yes	Yes	No	ZG5226
MWA302B-*_#				Yes	
MWA302K-*_#	Yes			No	
MWA302KB-*_#				Yes	

Besides that shown in the above table, they are marked with different model name and rated power input and employ different capacity of dust container

MWA401 series:

For model similarity, please see the following table:

Model	Pre-filter	Filter bag	HEPA filter	Base	Motor
MWA401G-*_#	Yes	Yes	No	No	ZG5226 for #= 700W or 800W;
MWA401BG-*_#				Yes	
MWA401C-*_#	No	Optional	Yes	No	ZG-YJ-800 for #=800WB or 1000WA; ZG-XDS- 1000 for #=1000WB or 1200WA; ZG-YJ-1200 for #=1200WB
MWA401BC-*_#				Yes	

MWA601 series:

For model similarity, please see the following table:

Model	Pre-filter	Filter bag	HEPA filter	Base	Motor
MWA601G-*_#	Yes	Yes	No	No	ZG-YJ-800
MWA601BG-*_#				Yes	
MWA601C-*_#	Yes(together with HEPA filter)	Optional	Yes	No	
MWA601BC-*_#				Yes	

Besides that shown in the above table, they are marked with different model name and rated power input and employ different capacity of dust container.

Amendment 4:

The original test report ref. no. 140700052SHA-001 dated 2014-09-29, its Amendment 1 dated 2015-06-18, its Amendment 2 dated 2015-12-02 and its Amendment 3 dated 2015-12-24 were modified on 2016-08-15 to include the following changes and/or additions:

1. Add new models MWA401G-*_#, MWA401BG-*_#, MWA401C-*_#, MWA401BC-*_#
*= 12L,15L, 18L, 20L or 23L; #=1000WB, 1200WA;

2. Add new models MWA601G-*_#, MWA601BG-*_#, MWA601C-*_#, MWA601BC-*_#
*= 12L,15L, 18L, 20L or 23L; #=800WB, 1000WA

Construction checked and after review, The tests of cl.10, 11, 13, 15, 16, 19, 21, 22, 29, 30, Annex N and Annex EMF were conducted.

Clauses concerned: cl15.3, 19.10, 21.1, 22.5, Annex N and Annex EMF;

Table concerned: Table 10.1, 11.8, 13.2, 13.3, 16.2, 16.3, 24.1, 29 and 30.

IEC 60335-2-2			
Clause	Requirement - Test	Result - Remark	Verdict

15	MOISTURE RESISTANCE		
15.3	Appliances proof against humid conditions		P
	Checked by test Cab: Damp heat steady state in IEC 60068-2-78		P
	Detachable parts removed and subjected, if necessary, to the humidity test with the main part		P
	Humidity test for 48 h in a humidity cabinet		P
	Reassembly of those parts that may have been removed		P
	The appliance withstands the tests of clause 16		P

19	ABNORMAL OPERATION		
19.10	Series motors operated at 1,3 times rated voltage for 30 s with the air inlet blocked, rotating brushes and similar devices being removed..... (IEC 60335-2-2)	312V	P
	Safety not impaired, windings and connections have not worked loose (IEC 60335-2-2)		P

22	CONSTRUCTION		
22.5	No risk of electric shock when touching the pins of the plug, for appliances having a capacitor with rated capacitance exceeding 0,1 μ F, the appliance being disconnected from the supply at the instant of voltage peak		P
	Voltage not exceeding 34 V (V).....:	Max. <5V	P

N	ANNEX N (NORMATIVE) PROOF TRACKING TEST		
	The proof tracking test is carried out in accordance with IEC 60112 with the following modifications:		
7	Test apparatus		
7.3	Test solutions		
	Test solution A is used		P
10	Determination of proof tracking index (PTI)		

IEC 60335-2-2			
Clause	Requirement - Test	Result - Remark	Verdict
10.1	Procedure		
	The proof voltage is 100V, 175V, 400V or 600V ...:	175V	P
	The test is carried out on five specimens		P
	In case of doubt, additional test with proof voltage reduced by 25V, the number of drops increased to 100		N/A
10.2	Report		
	The report states if the PTI value was based on a test using 100 drops with a test voltage of (PTI-25) V		N/A
	However, for printed circuit boards, the duration of burning not exceeding 15 s		N/A

Annex EN 62233:2008			
Clause	Requirement + Test	Result - Remark	Verdict
EMF- ELECTROMAGNETICS FIELDS			
	The tested product also complies with the requirements of EN 62233:2008		
	Limit100%	Measured max. :<10% (Refer to 140700052SHA-EMF01+A2)	P

IEC 60335-2-2			
Clause	Requirement - Test	Result - Remark	Verdict

10.1	TABLE: Power input deviation					P
Input deviation of/at:	P rated (W)	P measured (W)	dP (W, %)	Required dP (W, %)	Remark	
MWA401G-*-, MWA401BG-*-, MWA401C-*-, MWA401BC-*-, *= 12L,15L, 18L,20L or 23L; #= 1000WB	1000	Pf =932 Pi =760 Pm =846	-15,4%	+15%	P	
MWA401G-*-, MWA401BG-*-, MWA401C-*-, MWA401BC-*-, *= 12L,15L, 18L,20L or 23L; #=1200WA	1200		-29,5%			
Supplementary information: tested with motor ZG-XDS-1000 and operated at 230V, 50Hz.						
MWA601G-*-, MWA601BG-*-, MWA601C-*-, MWA601BC-*-, *= 12L,15L, 18L, 20L or 23L; #=800WB	800	Pf =742 Pi =626 Pm =684	-14,5%	+15%	P	
MWA601G-*-, MWA601BG-*-, MWA601C-*-, MWA601BC-*-, *= 12L,15L, 18L, 20L or 23L; #=1000WA	1000		-31,6%			
Supplementary information: tested with motor ZG-YJ-800 and operated at 230V, 50Hz.						

11.8	TABLE: Heating test, thermocouple measurements		P
	Test voltage (V)	254,4V	—
	Ambient (°C)	23	—
Thermocouple locations		Max. temperature rise measured, dT (K)	Max.temperature rise limit, dT (K)
Winding		84	115
Internal wire		59	80(T105)
Brush holder		71	For cl.30.1
Tank cover		46	For cl.30.1

IEC 60335-2-2			
Clause	Requirement - Test	Result - Remark	Verdict
X2 Capacitor	47	60(T85)	
Supply cord	47	50	
Ambient switch	52	60(T85)	
Surface of switch	26	60	
Handle	13	60	
Accessible surface other than air outlet	14	65	
Air outlet	46	70	
Motor cover	49	For cl.30.1	
Test corner	6	65	
Supplementary information: MWA401G-*-1000WB with motor ZG-XDS-1000 as representative was subjected to this test and the most unfavourable values were recorded.			

11.8	TABLE: Heating test, resistance method					P
	Test voltage (V)		254,4V			—
	Ambient, t1 (°C)		23			—
	Ambient, t2 (°C)		23			—
Temperature rise of winding	R1 (Ω)	R2 (Ω)	dT (K)	Max. dT (K)	Insulation class	
Stator of vacuum motor	2,67	3,62	91	115	155	
Rotor(7P) of vacuum motor	3,10	4,36	104	115	155	
Supplementary information: MWA401G-*-1000WB with motor ZG-XDS-1000 as representative was subjected to this test and the most unfavourable values were recorded.						

11.8	TABLE: Heating test, thermocouple measurements					P
	Test voltage (V)		254,4V			—
	Ambient (°C)		20			—
Thermocouple locations	Max. temperature rise measured, dT (K)		Max.temperature rise limit, dT (K)			
Winding	70		115			
Internal wire	38		80(T105)			
Brush holder	84		For cl.30.1			
Tank cover	34		For cl.30.1			
X2 Capacitor	34		60(T85)			

IEC 60335-2-2			
Clause	Requirement - Test	Result - Remark	Verdict
Supply cord	36	50	
Ambient switch	33	60(T85)	
Surface of switch	22	60	
Handle	4	60	
Accessible surface other than air outlet	22	65	
Air outlet	34	70	
Motor cover	43	For cl.30.1	
Test corner	8	65	
Supplementary information: MWA601G-*-800WB with motor ZG-YJ-800 as representative was subjected to this test and the most unfavourable values were recorded.			

11.8	TABLE: Heating test, resistance method					P
	Test voltage (V)	254,4V				—
	Ambient, t1 (°C)	20				—
	Ambient, t2 (°C)	20				—
Temperature rise of winding		R1 (Ω)	R2 (Ω)	dT (K)	Max. dT (K)	Insulation class
Stator of vacuum motor		3,00	3,95	81	115	155
Rotor(8P) of vacuum motor		3,05	4,16	93	115	155
Supplementary information: MWA601G-*-800WB with motor ZG-YJ-800 as representative was subjected to this test and the most unfavourable values were recorded						

13.2	TABLE: Leakage current			P
	Heating appliances: 1.15 x rated input (W)	N/A		—
	Motor-operated and combined appliances: 1.06 x rated voltage (V)	254,4		—
Leakage current between		I (mA)	Max. allowed I (mA)	
L/N and enclosure		0,001(peak value)	0,35(peak value)	
L/N and switch/knob/handle		0,001(peak value)	0,35(peak value)	
Supplementary information: The most unfavourable values were recorded.				

13.3	TABLE: Electric strength					P
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IEC 60335-2-2			
Clause	Requirement - Test	Result - Remark	Verdict

Test voltage applied between:	Voltage (V)	Breakdown (Yes/No)
Basic insulation	1000	No
Supplementary insulation	1750	No
Reinforced insulation	3000	No
Supplementary information:		

16.2	TABLE: Leakage current		P
	Single phase appliances: 1.06 x rated voltage (V)	254,4V	—
	Three phase appliances 1.06 x rated voltage divided by $\sqrt{3}$ (V)	N/A	—
Leakage current between		I (mA)	Max. allowed I (mA)
L/N and enclosure		0,0012(r.m.s value)	0,25(r.m.s value)
L/N and switch/knob/handle		0,0013(r.m.s value)	0,25(r.m.s value)
Supplementary information: The most unfavourable values were recorded.			

16.3	TABLE: Electric strength			P
Test voltage applied between:		Voltage (V)	Breakdown (Yes/No)	
Basic insulation		1250	No	
Supplementary insulation		1750	No	
Reinforced insulation		3000	No	
Supplementary information:				

24.1	TABLE: Components information					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Power plug	Zhenjiang Huayin Instrument and Electrical Equipment Co.,Ltd.	2VTJ2	250V~;16A DIN 49406-R	DIN VDE 0620-1	VDE/125439	
Alternative	Ningbo Qiaopu Electric Co., Ltd.	D02	250V~;16A DIN 49406-R	DIN VDE 0620-1	VDE/400028 75	

IEC 60335-2-2					
Clause	Requirement - Test			Result - Remark	Verdict
Alternative	Yuyao Jingyi Electronics Co., Ltd.	JY-02	250V~;16A DIN 49406-R	DIN VDE 0620-1	VDE/ 40005422
Alternative	Yuyao Haidebao Electrical Appliance Co., Ltd.	HDB-02	250V~;16A	DIN VDE 0620-1	VDE/ 40034743
BS plug	Zhenjiang Huayin Instrument and Electrical Equipment Co.,Ltd.	3B03 3B04	250V~ 13A	BS1363-1	BSI KM70530
Alternative	Ningbo Yunhuan Electronics Group Corporation	Y006A	250V~ 13A	BS1363-1	BSI KM45980
Alternative	Yuyao Jingyi Electronics Co., Ltd.	JY13 JY13A	250V~ 13A	BS1363-1	BSI KM72974
Alternative	Ningbo Yunhuan Electronics Group Corporation	Y006	250V~ 13A	BS1363-1	BSI KM45980
Alternative	Yuyao Haidebao Electrical Appliance Co., Ltd.	HDB-08	250 V~, 13 A	BS 1363-1	ASTA 1109
Power cord	Zhenjiang Huayin Instrument and Electrical Equipment Co.,Ltd	H05VVH2-F H05VV-F	2 x 0,75 mm ² 2 x 1,0 mm ²	DIN EN 50525-2-11	VDE/ 116312
Alternative	Ningbo Liansheng Wire &cable Co., Ltd.	H05VVH2-F H05VV-F	2 x 0,75 mm ² 2 x 1,0 mm ²	DIN VDE 0281-5	VDE/ 40022054
Alternative	Ningbo Yuxin Appliance Co., Ltd.	H05VVH2-F H05VV-F	2 x 0,75 mm ² 2 x 1,0 mm ²	DIN VDE 0281-5	VDE/ 40010786
Alternative	Yuyao Jingyi Electronics Co., Ltd.	H05VVH2-F H05VV-F	2 x 0,75 mm ² 2 x 1,0 mm ²	DIN VDE 0281-5	VDE/ 40025190
Alternative	Ningbo Qiaopu Electric Co., Ltd.	H05VVH2-F H05VV-F	2 x 0,75 mm ² 2 x 1,0 mm ²	DIN EN 50525-2-11	VDE/ 40035976

IEC 60335-2-2					
Clause	Requirement - Test			Result - Remark	Verdict
Supply cord	Yuyao Haidebao Electrical Appliance Co., Ltd.	H05VVH2-F H05VV-F	2x0,75 mm ²	DIN EN 50525-2-11	VDE/ 40034583
Switch	Shanghai Qijia Electronic Co., Ltd.	R13	AC250V,12(8)A 10E3, T85	EN 61058-1	VDE/ 40022329
Micro switch ²⁾	Shanghai Qijia Electronic Co., Ltd.	MS15	AC 250V;50Hz, 50E3, 16(8)A, T125	EN 61058-1	TUV/ R50165145
X2 capacitor	Zhenjiang Yuanrun Electronics Co., Ltd.	MEX	X2, 300VAC, 0,22μF, 40/100/21/C	IEC 60384-14	TUV HN 69242322
Alternative	Wujiang Taixing Electronic Co., Ltd.	TNS-2TH	X2, AC275V, 0,22μF, 40/100/21/C	IEC 60384-14	VDE/ 117515
Alternative	Yongkang City Huyan Soldering Material Factory	TNS-2TH	X2, AC275V, 0,22μF, 40/085/21/C	IEC 60384-14	VDE/ 40019937
Alternative	Tenta Electric Industrial Co., Ltd.	MEX	X2, 275VAC, 0,22μF, 40/100/21/C	EN 60384-14	VDE/ 119119
Internal wire	SUZHOU DIOUDE ELECTRONICS CO LTD	1015	18AWG 105°C UL Cert.:E336191	EN 60335-1 EN 60335-2-2	Tested with appliance
Alternative	KUNSHAN HUAFENG WIRE & CABLE CO LTD	1015	18AWG 105°C UL Cert.:E219420	EN 60335-1 EN 60335-2-2	Tested with appliance
Alternative	TONGXIANG TIANCHI & CABLE CO LTD	1015	18AWG 105°C UL Cert.:E363020	EN 60335-1 EN 60335-2-	Tested with appliance
Alternative	JIANGSU NAIAN SPECIAL CABLE & WIRE CO LTD	3135	18AWG 200°C UL Cert.:E217633	EN 60335-1 EN 60335-2-2	Tested with appliance
Alternative	XIANGSHAN FAHUA ELECTRIC WIRE & CABLE CO LTD	3135	18AWG 200°C UL Cert.:E222362	EN 60335-1 EN 60335-2-2	Tested with appliance
Alternative	SUZHOU LONG CHANG PLASTIC & CABLE CO LTD	3321	18AWG 150°C UL Cert.: E233980	EN 60335-1 EN 60335-2-2	Tested with appliance

IEC 60335-2-2					
Clause	Requirement - Test		Result - Remark		Verdict
Motor leads	XIANGSHAN FAHUA ELECTRIC WIRE & CABLE CO LTD	3135	18AWG, 600V, 200°C UL Cert.:E222362	EN 60335-1 EN 60335-2-	Tested with appliance
Alternative	WUJIANG SHENJIANG WIRE & CABLE CO LTD	1015	18AWG, 600V, 105°C UL Cert.:E225667	EN 60335-1 EN 60335-2	Tested with appliance
Motor³⁾	Suzhou Yunda Electric Appliance Co.,Ltd.	ZG5822	220-240V~, 50/60Hz class155,	EN 60335-1 EN 60335-2-2	Tested with appliance
Motor⁴⁾	Suzhou Yunda Electric Appliance Co., Ltd.	ZG5824	220-240V~, 50/60Hz, class155,	EN 60335-1 EN 60335-2-2	Tested with appliance
Motor⁵⁾	Suzhou Yunda Electric Appliance Co.,Ltd.	ZG5226	220-240V~, 50/60Hz class155,	EN 60335-1 EN 60335-2-2	Tested with appliance
Thermal Protector (Optional)	Jiangsu Changsheng Electric Appliance Co., Ltd.	17AM-D	AC 250V,105°C, 110°C or 115°C	EN 60730-1	VDE/ 40016509
Alternative	Suzhou Industrial Park Kain Electronic Sci. & Tech Co., Ltd.	17AM-K	AC250V,105°C,110° or 115°C	EN 60730-1	VDE/ 40019609
Alternative	Changzhou Changhong Tongli Electric Appliance Co., Ltd.	KW-A2	AC 250V,105°C, 110°C,115°C	EN 60730-1	VDE/ 40020906
Alternative	Jiangsu Yi Tong Control System Co., Ltd.	17AM	AC 250V,105°C, 110°C,115°C	EN 60730-1	VDE/ 40022710
Wire connector	Heavy Power Co., Ltd	CE2	150°C (UL E113650)	EN 60335-1 EN 60335-2-2	Tested with appliance
Dust Filter⁶⁾	Suzhou Wise Mechanic Electric Appliance Co., Ltd	XS-H13	--	EN 60335-1 EN 60335-2-2	Tested with appliance
Dust filter⁷⁾	Suzhou Wise Mechanic Electric Appliance Co., Ltd	jzzc600	--	EN 60335-1 EN 60335-2-2	Tested with appliance

IEC 60335-2-2					
Clause	Requirement - Test		Result - Remark		Verdict
Motor cover/motor base/ deflector /floor suction nozzle	Suzhou Liangfu Electric Appliance Co.,Ltd.	K8003	PP Min. thickness: 2mm	EN 60335-1 EN 60335-2-2	Tested with appliance
Alternative	Suzhou Yifan Plastic Electronics Co.,Ltd	K8003	PP Min. thickness: 2mm	EN 60335-1 EN 60335-2-2	Tested with appliance
Alternative	Suzhou Wanhe Plastic Products Co., Ltd	K8003	PP Min. thickness: 2mm	EN 60335-1 EN 60335-2-2	Tested with appliance
Tank cover⁸⁾	Suzhou Liangfu Electric Appliance Co., Ltd.	K8003	PP, Min. thickness: 2mm	EN 60335-1 EN 60335-2-2	Tested with appliance
Alternative	Suzhou Yifan Plastic Electronics Co.,Ltd	K8003	PP Min. thickness: 2mm	EN 60335-1 EN 60335-2-2	Tested with appliance
Alternative	Suzhou Wanhe Plastic Products Co., Ltd	K8003	PP Min. thickness: 2mm	EN 60335-1 EN 60335-2-2	Tested with appliance
Motor for MWA401G-*, MWA401BG-*, MWA401C-*, MWA401BC-*, MWA601G-*, MWA601BG-*, MWA601C-*, MWA601BC-*, #=800WB or 1000WA	Suzhou Yongjie Motor Co., Ltd.	ZG-YJ-800	220-240V~, 50/60Hz class155, stator winding: Aluminium;	EN 60335-1 EN 60335-2-2	Tested with appliance
Motor for MWA401G-*, MWA401BG-*, MWA401C-*, MWA401BC-*, #=1200WB	Suzhou Yongjie Motor Co., Ltd.	ZG-YJ-1200	220-240V~, 50/60Hz class155, stator winding: Aluminium;	EN 60335-1 EN 60335-2-2	Tested with appliance
Motor for MWA401G-*, MWA401BG-*, MWA401C-*, MWA401BC-*, #=1000WB or 1200WA	Suzhou Industrial Park Cinderson Motor Co Ltd	ZG-XDS-1000	220-240V~, 50/60Hz class155,	EN 60335-1 EN 60335-2-2	Tested with appliance

IEC 60335-2-2			
Clause	Requirement - Test	Result - Remark	Verdict

Supplementary information:

¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.

²⁾ Only for MWA302K-*# and MWA302KB-*#;

³⁾ For MWA301C-*#, MWA301BC-*#, MWA301G-*#, MWA301BG-*#, MWA301DG-*#, MWA301DBG-*#, #=800W or 1000W;

⁴⁾ For MWA301C-*#-1200W, MWA301BC-*#-1200W, MWA301G-*#-1200W, MWA301BG-*#-1200W, MWA301DG-*#-1200W, MWA301DBG-*#-1200W

⁵⁾ For MWA401C-*#, MWA401BC-*#, MWA401G-*#, MWA401BG-*#, MWA302-*#, MWA302B-*#, MWA302K-*# and MWA302KB-*#

⁶⁾ For MWA301C-*#, MWA301BC-*#, MWA401C-*#, MWA401BC-*#, MWA302-*#, MWA302B-*#, MWA302K-*# and MWA302KB-*#

⁷⁾ For MWA301G-*#, MWA301BG-*#, MWA301DG-*#, MWA301DBG-*#, MWA401G-*#, MWA401BG-*#,

⁸⁾ Except for MWA302-*#, MWA302B-*#, MWA302K-*# and MWA302KB-*#, which are with metal tank cover.

IEC 60335-2-2			
Clause	Requirement - Test	Result - Remark	Verdict

29.1	TABLE: Clearances					P
	Overvoltage category	II				—
		Type of insulation:				
Rated impulse voltage (V):	Min. cl (mm)	Basic (mm)	Supplementary (mm)	Reinforced (mm)	Functional (mm)	Verdict / Remark
330	0,2* / 0,5 / 0,8**	—	—	—	—	N/A
500	0,2* / 0,5 / 0,8**	—	—	—	—	N/A
800	0,2* / 0,5 / 0,8**	—	—	—	—	N/A
1 500	0,5 / 0,8** / 1,0***	—	—	—	—	N/A
2 500	1,5 / 2,0***	×	×	—	×	P
4 000	3,0 / 3,5***	—	—	×	—	P
6 000	5,5 / 6,0***	—	—	—	—	N/A
8 000	8,0 / 8,5***	—	—	—	—	N/A
10 000	11,0 / 11,5***	—	—	—	—	N/A
Supplementary information:						
*) For tracks on printed circuit boards if pollution degree 1 and 2						
**) For pollution degree 3						
***) If the construction is affected by wear, distortion, movement of the parts or during assembly						

29.2	TABLE: Creepage distances, basic, supplementary and reinforced insulation										P
Working voltage (V)	Creepage distance (mm) Pollution degree										
	1	2			3			Type of insulation			
		Material group			Material group						
		I	II	IIIa/IIIb	I	II	IIIa/IIIb*)	B**)	S**)	R**)	Verdict
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9		—	—	N/A
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9	—		—	N/A
≤50	0,36	1,2	1,7	2,4	3,0	3,4	3,8	—	—		N/A
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4		—	—	N/A
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4	—		—	N/A

IEC 60335-2-2											
Clause	Requirement - Test							Result - Remark			Verdict
125	0,56	1,5	2,1	3,0	3,8	4,2	4,8	—	—		N/A
250	0,56	1,25	1,8	<u>2,5</u>	3,2	3,6	<u>4,0</u>	×	—	—	P
250	0,56	1,25	1,8	<u>2,5</u>	3,2	3,6	<u>4,0</u>	—	×	—	P
250	1,12	2,5	3,6	<u>5,0</u>	6,4	7,2	<u>8,0</u>	—	—	×	P
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3		—	—	N/A
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3	—		—	N/A
400	2,0	4,0	5,6	8,0	10,0	11,2	12,6	—	—		N/A
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0		—	—	N/A
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0	—		—	N/A
500	2,6	5,0	7,2	10,0	12,6	14,2	16,0	—	—		N/A
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0		—	—	N/A
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	—		—	N/A
>630 and ≤800	3,6	6,4	9,0	12,6	16,0	18,0	20,0	—	—		N/A
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5		—	—	N/A
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	—		—	N/A
>800 and ≤1000	4,8	8,0	11,2	16,0	20,0	22,0	25,0	—	—		N/A
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0		—	—	N/A
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	—		—	N/A
>1000 and ≤1250	6,4	10,0	14,2	20,0	25,0	28,0	32,0	—	—		N/A
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0		—	—	N/A
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	—		—	N/A
>1250 and ≤1600	8,4	12,6	18,0	25,0	32,0	36,0	40,0	—	—		N/A
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0		—	—	N/A
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	—		—	N/A
>1600 and ≤2000	11,2	16,0	22,0	32,0	40,0	44,0	50,0	—	—		N/A
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0		—	—	N/A
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	—		—	N/A
>2000 and ≤2500	15,0	20,0	28,0	40,0	50,0	56,0	64,0	—	—		N/A
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0		—	—	N/A

IEC 60335-2-2											
Clause	Requirement - Test							Result - Remark			Verdict
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	—		—	N/A
>2500 and ≤3200	20,0	25,0	36,0	50,0	64,0	72,0	80,0	—	—		N/A
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0		—	—	N/A
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	—		—	N/A
>3200 and ≤4000	25,0	32,0	44,0	64,0	80,0	90,0	100,0	—	—		N/A
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0		—	—	N/A
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	—		—	N/A
>4000 and ≤5000	32,0	40,0	56,0	80,0	100,0	112,0	126,0	—	—		N/A
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0		—	—	N/A
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	—		—	N/A
>5000 and ≤6300	40,0	50,0	72,0	100,0	126,0	142,0	160,0	—	—		N/A
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0		—	—	N/A
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	—		—	N/A
>6300 and ≤8000	50,0	64,0	90,0	126,0	160,0	180,0	200,0	—	—		N/A
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0		—	—	N/A
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	—		—	N/A
>8000 and ≤10000	64,0	80,0	112,0	160,0	200,0	220,0	250,0	—	—		N/A
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0		—	—	N/A
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	—		—	N/A
>10000 and ≤12500	80,0	100,0	142,0	200,0	250,0	280,0	320,0	—	—		N/A
Supplementary information:											
*) Material group IIb is allowed if the working voltage does not exceed 50 V											
**) B = Basic insulation, S = Supplementary insulation, R = Reinforced insulation											

IEC 60335-2-2			
Clause	Requirement - Test	Result - Remark	Verdict

29.2	TABLE: Creepage distances, functional insulation							P
Working voltage (V)	Creepage distance (mm) Pollution degree							
	1	2			3			
		Material group			Material group			
		I	II	IIIa/IIIb	I	II	IIIa/IIIb ^{*)}	Verdict / Remark
≤10	0,08	0,4	0,4	0,4	1,0	1,0	1,0	N/A
50	0,16	0,56	0,8	1,0	1,4	1,6	1,8	N/A
125	0,25	0,71	1,0	1,4	1,8	2,0	2,2	N/A
250	0,42	1,0	1,4	<u>2,0</u>	2,5	2,8	<u>3,2</u>	P
400	0,75	1,6	2,2	3,2	4,0	4,5	5,0	N/A
500	1,0	2,0	2,8	4,0	5,0	5,6	6,3	N/A
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	N/A
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	N/A
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	N/A
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	N/A
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	N/A
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	N/A
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	N/A
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	N/A
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	N/A
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	N/A
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	N/A
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	N/A
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	N/A
Supplementary information:								
*) Material group IIIb is allowed if the working voltage does not exceed 50 V								

30	TABLE: Resistance to heat and fire																					
Object/ part No.	Manufacturer/ trademark	Type/ model	Ball pressure test °C (mm)				Glow wire test (GWT) °C					Glow-wire flammability index (GWFI) °C				Glow- wire ignition temp. (GWIT) °C		N F T	PTI (V)	H B F	Verdict	
			75	125	cl. 11 +40	cl. 19 +25	550	650		750		850	550	650	750	850	675	775				
								te	ti	te	ti											
Motor cover	Suzhou Liangfu	*)			89																	P
Motor cover	Suzhou Yifan	*)			89																	P
Motor cover	Suzhou Wanhe				89																	
Brush holder for motor ZG- XDS-1000	*)	*)		X						NI	NI									175		P
Slot liner of motor ZG- XDS-1000																				175		P
PVC silicone fiberglass sleeving	*)	*)																	X			P
Supplementary information: ¹⁾ Parts of material classified at least HB40 or if relevant HBF; ²⁾ Parts of material classified as V-0 or V-1; ³⁾ Flame persisting longer than 2 s (= te																						

– ti) need only be reported for unattended appliances; ⁴⁾ Surrounding parts subjected to the needle-flame test of annex E; ⁵⁾ Base material classified as V-0 or if relevant VTM-0 ⁶⁾ The GWIT pre-selection option, the 850 °C GWFI pre-selection option, and the 850 °C GWT are not applicable for attended appliances*) Please refer to table 24.1.

Photo 1.

Description: motor ZG-XDS-1000



Photo 2.

Description: internal view of motor ZG-XDS-1000



Photo 3.

Description: front view (MWA601G-*-#, MWA601BG-*-#, MWA601C-*-#, MWA601BC-*-#)



Photo 4.

Description: side view (MWA601G-*-#, MWA601BG-*-#, MWA601C-*-#, MWA601BC-*-#)



Photo 5.

Description: rear view (MWA601G-*-#, MWA601BG-*-#, MWA601C-*-#, MWA601BC-*-#)



Photo 6.

Description: side view (MWA601G-*-#, MWA601BG-*-#, MWA601C-*-#, MWA601BC-*-#)



Photo 7.

Description: top view (MWA601G-*-#, MWA601BG-*-#, MWA601C-*-#, MWA601BC-*-#)



Photo 8.

Description: machine head and dust container (MWA601G-*-#, MWA601BG-*-#, MWA601C-*-#, MWA601BC-*-#)



Photo 9.

Description: wheeled base (MWA601BG-*-#, MWA601BC-*-#)



Photo 10.

Description: internal view of dust container (MWA601C-*-#, MWA601BC-*-# with filter A)



Photo 11.

Description: internal view of dust container with pre-filter (MWA601G-*-#, MWA601BG-*-# with filter B)



Photo 12.

Description: overall view of machine head (MWA601G-*-#, MWA601BG-*-#, MWA601C-*-#, MWA601BC-*-#)



Photo 13.

Description: overall view of machine head (MWA601G-*-#, MWA601BG-*-#, MWA601C-*-#, MWA601BC-*-#)



Photo 14.

Description: overall view of machine head with filter A (MWA601C-*-#, MWA601BC-*-#)



Photo 15.

Description: overall view of machine head with filter A ((MWA601C-*-, MWA601BC-*#)



Photo 16.

Description: overall view of machine head with filter B (MWA601G-*-, MWA601BG-*#)



Photo 17.

Description: machine head and metal bracket (MWA601G-*-#, MWA601BG-*-#)



Photo 18.

Description: internal view of machine head and metal bracket (MWA601G-*-#, MWA601BG-*-#)



Photo 19.

Description: internal view of filter, metal bracket and dust container(MWA601G-*-#, MWA601BG-*-#)



Photo 20.

Description: internal view of machine head with motor ZG-YJ-800 (MWA601G-*-#, MWA601BG-*-#, MWA601C-*-#, MWA601BC-*-#)



Photo 21.

Description: internal view of machine head with motor ZG-YJ-800 (MWA601G-*-#, MWA601BG-*-#, MWA601C-*-#, MWA601BC-*-#)

