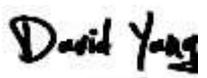


TEST REPORT IEC 61029-2-9 Safety of transportable motor-operated electric tools Part 2: Particular requirements for mitre saws	
Report reference No	6074054.50
Tested by (printed name and signature)	David Yang 
Approved by (printed name and signature)	Chris Feng 
Date of issue	2020-03-20
Total number of pages	38 pages
CB Testing Laboratory Name	DEKRA Testing and Certification (Shanghai) Ltd.
Address	3F #250 Jiangchangsan Road, Building 16 Headquarter Economy Park Shibei Hi-Tech Park, Jing'an District, Shanghai 200436, China
Testing location	CBTL <input checked="" type="checkbox"/> SMT <input type="checkbox"/> TMP <input type="checkbox"/>
Address	Same as above
Applicant's Name	LEE YEONG INDUSTRIAL CO., LTD.
Address	No.2, Kejia Rd., Douliu City, Yunlin County 64057, Taiwan
Test specification	
Standard	IEC 61029-2-9:1995 (First Edition), used in conjunction with IEC 61029-1:1990 (First Edition)
Test procedure	CB
Non-standard test method	N/A
Test Report Form No.	IEC61029_2_9A / 2001-05
TRF originator	TÜV PRODUCT SERVICE GmbH
Master TRF	Dated 2001-04
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Test item description	Mitre Saw
Trademark	AGP
Manufacturer.....	LEE YEONG INDUSTRIAL CO., LTD. No.2, Kejia Rd., Douliu City, Yunlin County 64057, Taiwan
Model and/or type reference	GP255; GP255S; LY255; LY255S; CW GP255; CW GP255S; GP255 Mod.350; GP255S Mod.355
Rating(s)	220-240 V; 50-60 Hz; 1200 W; S2 10 min; n ₀ =3000 min ⁻¹ (50 Hz); n ₀ =3600 min ⁻¹ (60 Hz); Ø254 mm; Saw blade bore diameter: Ø30 mm; Class I

Test items particulars (see also clause 5):

Classification of installation and use: See IEC 61029- transportable

1. TRF, General Information..... :

Supply connection: See also IEC 61029-1. TRF, non-detachable cord

General Information :

Accessories and detachable parts included in the -

evaluation: See IEC 61029-1. TRF, General

Information :

Options included : -

Test case verdicts

Test case does not apply to the test object : N/A

Test item does meet the requirement : P(ass)

Test item does not meet the requirement : F(ail)

Testing

Date of receipt of test item : 2020-02-16

Date(s) of performance of test : 2020-02-16 to 2020-03-20

Abbreviations used in the report: P

- operational insulation..... : OP - supplementary insulation : SI

- double insulation..... : DI - reinforced insulation : RI

General remarks

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by a NCB in accordance with IEC 61029-2-9:1995.

This report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item(s) tested.

Throughout this report a comma is used as the decimal separator.

The tool also complies with:

IEC 61029-1:1990 and IEC 61029-2-9:1995

Factory:

LEE YEONG INDUSTRIAL CO., LTD.

No.2, Kejia Rd., Douliu City, Yunlin County 64057, Taiwan

Copy of marking plate



The marking labels of all types are identical with GP255S only except models' names.



List of Attachments (including a total number of pages in each attachment):

Test report constituents:

-6074054.50 refers to the requirements of IEC 61029-1, IEC 61029-2-9 and pictures (total 38 pages)

Summary of testing

The tool tested passed all examinations of the applied standards mentioned on page 1 "Test specification" and on page 2 "General remarks".

All appl. clauses of the standard have been done at CBTL.

General product information

All types are identical, they share the same construction and components except the model name of them are different.

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
7	MARKING		
7.1	Rated voltage(s) (V).....:	220-240 V	P
	Nature of supply	ac	P
	Rated frequency (Hz).....:	50 - 60	P
	Input (W or kW).....:	1200 W	P
	Rated current (A) if greater than 10A.....:		N/A
	Manufacturer's name or trade mark	AGP	P
	Model or type reference	GP255; GP255S; LY255; LY255S; CW GP255; CW GP255S; GP255 Mod.350; GP255S Mod.355	P
	Rated operating/resting time	S2 10 min	P
	Symbol for Class II		N/A
	Symbol for protection against moisture		N/A
	Rated saw blade diameter	Ø 254 mm	P
	Rated no-load speed	50 Hz: 3000 min ⁻¹ 60 Hz: 3600 min ⁻¹	P
	Indication of direction of rotation of the saw blade		P
	Indication of different no-load speeds clearly marked		N/A
7.2	Operating time/resting time corresponding to normal use		P
	Marking of operation	S2 10 min	P
7.3	Heating elements: marking according to IEC 60335-1		N/A
7.4	Adjustable voltage or input easily and clearly discernible		N/A
7.5	Marked input for each rated voltage or voltage range		N/A
7.6	Correct symbols used		P
	Symbol for nature of rated supply next to rated voltage		P
	Correct dimensions for Class II symbol and no confusion with any other marking		N/A
	Direction of rotation of the blade clearly indicated on the fixed part and visible when changing the blade		P
7.7	Letter N used exclusively for neutral conductor		N/A
	Marking for earthing terminal		P

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
	Marking not on screws, removable washers or other removable parts		N/A
7.8	Use of red push-button (only to open the circuit)		N/A
	Figure 0 indicates only OFF position		N/A
	Figure I indicates ON position		N/A
	Correct symbols used for greater output, input, speed etc.		N/A
	Manual reset buttons of thermal cut-outs cannot be mistaken for main controls		N/A
7.9	Marking easily legible and durable		P
	Marking placed on a main part clearly discernible		P
	Marking and indications related to any component placed in the vicinity of the component involved		P
	Marking not placed on removable parts, if confusion possible		P
	Rubbing test		P
7.10	Regulation devices marked with		N/A
7.11	Switches so marked or placed as to indicate clearly which part of the tool they control	Trigger type	P
7.12	Wiring diagram if more than 2 supply conductors		N/A
7.13	Language of safety markings/instructions	English manual	P
	Installation instructions:		P
	- setting-up or fixing tool in a stable position as appropriate		P
	- unpacking and assembly		P
	- connection to power supply, cabling, fusing, socket-type and earthing requirements		P
	- illustrated description of functions		P
	- limitations on ambient conditions		P
	- list of contents		P
	Operating instructions:		P
	- setting and testing		P
	- tool changing		P
	- clamping of work		P
	- limits on size of work piece		P
	- general instructions for use		P
	Safety precautions:		P
	- precautions and use of clothing (where necessary)		P
	- special safety precautions		P

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
	- dust extraction		P
	- guards; security and adjustment		P
	Maintenance and servicing:		P
	- regular cleaning, maintenance and lubrication		P
	- servicing by manufacturer or agent; list of addresses		P
	- list of user replaceable parts		P
	- special tools which may be required		N/A
	- do not use saw blades which are damaged or deformed		P
	- do not use the saw without guards in position		P
	- replace table insert when worn		P
	- do not use the saw to cut other than aluminium, wood or similar materials		P
	- use only saw blades recommended by the manufacturer		P
	- connect mitre saws to a dust collecting device when sawing		P
	- select saw blades in relation to the material to be cut		P
	- take care when slotting		P
	- maximum depth of cut		P
	- how to support long pieces		P
	- additional safety instruction if double bevel-cutting is possible		N/A

8	PROTECTION AGAINST ACCESSIBILITY TO LIVE PARTS		
8.1	Adequate protection against accidental contact with:		P
	- live parts, even after removal of detachable parts		P
	- basic insulation of metal parts separated from live parts by basic insulation only (Class II)		N/A
	Lacquer, enamel etc. not relied upon		P
	Uninsulated parts at safety extra-low voltage considered to be live parts		P
	Apertures in Class II and Class I tools: 10 N force test with test pin		P
	Openings in enclosure: 50 N force test with standard test finger		P

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
8.2	Adequate strength of parts providing protection (do not work loose and are only removable with tools)		P
8.3	Shafts of operation knobs and the like not live		P
8.4	Metal handles or knobs of switch-operating means (tools other than Class III) covered by insulating material		N/A
	Separation by supplementary insulation		N/A
8.5	Capacitors not connected to accessible metal parts in Class II tools		N/A
	Separation by supplementary insulation (in case of metal casing)		N/A
8.6	Risk of electric shock from the pins of a plug		P
	Measured voltage (V) one second after disconnection	2,6 V	P

9	STARTING		
9.1	Start under normal voltage conditions		P
	Starting three times at 0,85 times rated voltage without load or lower limit of the voltage range	187 V	P
	With centrifugal or other automatic starting switch: three times at 1.06 times rated voltage or upper limit of the voltage range		N/A
9.2	Overload protection devices not operating during normal starting conditions		N/A

10	POWER INPUT AND CURRENT		
10.1	Input deviations at rated voltage and under normal load	(see appended table)	P
10.2	Current deviations at rated voltage and under normal load conditions	(see appended table)	P

11	HEATING		
11.1	No excessive temperatures in normal use	(see appended table)	P
11.2	Tool loading conditions during temperature test:		P
11.3	Temperature rises of windings and core laminations	(see appended table)	P
11.4	Tool operating time	S2 10 min	P
11.5	Operations of thermal cut-outs		N/A
11.6	Additional tests if temperature rise of the windings and core laminations exceeds the value of 11.5		N/A
	Heat treatment for 240 h		N/A

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
	Heating cabinet temperature (EC)		N/A
	Insulation resistance after heat treatment		N/A
	Electric strength after heat treatment		N/A
	Humidity treatment		N/A
	Insulation resistance after humidity treatment		N/A
	Electric strength after humidity treatment		N/A

12	LEAKAGE CURRENT		
12.1	Test voltage (V) (1,06 times rated voltage)	(see appended table)	P
12.2	Leakage current test	(see appended table)	P
	Tools with heating element tested according to IEC 60335-1; 13.2		N/A

13	RADIO INTERFERENCE SUPPRESSION		
13.1	Safety of the tool not affected by components for radio and television interference suppression		P

14	MOISTURE RESISTANCE		
14.1	Tools marked with degree of protection against ingress of foreign bodies fulfill this requirement under working conditions		N/A
14.2	Tools with a higher degree than IPX0 comply with IEC 60529 under working condition IP		N/A
14.3	Humidity test		P
	Relative humidity 91 - 95%	93%	P
	Temperature 20 - 30°C	25 °C	P
	Duration of treatment (h)	48 h	P
	Electric strength test after humidity treatment		P
14.4	Spillage of liquid in normal use for tools with liquid container		N/A
	Electric strength test after spillage of liquid		N/A
	No appreciable quantity of water has entered the appliance and no trace of water on insulating parts		N/A

15	INSULATION RESISTANCE AND ELECTRIC STRENGTH		
15.2	Insulation resistance	(see appended table)	P
15.3	Electric strength test (50 or 60 Hz)	(see appended table)	P

16	ENDURANCE		
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IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
16.1	Extended normal use		P
	No electrical or mechanical failure		P
	Insulation not damaged		P
	Contacts and connections do not work loos		P
	Tests of 16.2 and 16.3		P
	Electric strength test after extended use (75% of values specified in 15.3 (V)	938 V, 1875 V, 2813 V	P
16.2	Intermittent operation with no load for 2 x 24 h		P
	Operating period for short-time or intermittent operation tools	100 s “ON” and 20 s “OFF”	P
	Test voltage(s) (V)	264 V / 198 V	P
	Test positions	On horizontal	P
	Operation of overload protection devices during extended normal use		N/A
	Safety of tools not impaired after extended normal use		P
16.3	Tools with a centrifugal or other automatic starting switch		N/A
	Number of starting operations		N/A
	Test voltage(s) (V)		N/A
	After extended use, the safety of tools in normal use not impaired		N/A

17	ABNORMAL OPERATION		
17.1	Prevention against hazards as a result of abnormal or careless operation		P
	Tools incorporating commutator motors		N/A
	Test voltage (V) (1,3 times rated voltage)		N/A
	Tools incorporating induction motors		P
	- moving parts are liable to be jammed or stopped by hand		P
	- operated by hand look for 30 s max. winding temperature:°C:	Main winding: 110,8 °C Aux. winding: 72,0 °C Class H	P
	- attend during use look for 5 min max. winding temperature: °C:		N/A
	Three phase motors with one phase disconnected and under the torque producing normal load max. winding temperature: °C:		N/A
17.2	Tools incorporating electronic devices		N/A
	Operating with electronic device short-circuited		N/A

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
	Operating with electronic device open circuited		N/A
	No damage within the meaning of this standard		N/A
17.3	Tools with switches or other devices for reversing the motor		N/A
	Reversing the direction of rotation under running conditions		N/A
	Test voltage(s) (V)		N/A
	No electrical or mechanical failure of the device		N/A
	No damage within the meaning of this standard		N/A

18	MECHANICAL HAZARDS		
18.1	Protection against injury by parts moving in normal use		P
	Adequate mechanical strength of protective enclosures and guards		P
	Protective enclosures, covers, guards etc. not removable without the aid of a tool		P
	Guard for more frequent access does not create danger in case of:		P
	- used as protection of working element		P
	- during use and adjustment		P
	All working elements are secured so that they cannot create dangers		P
	Compliance with tests of Cl. 19		P
	Guarding system cannot be removed without aid of a tool		P
18.1.101	Blade guards:		P
	A blade guard is provided as a part of the mitre saw		P
	The portion of the blade not performing cutting action is completely enclosed by a fixed guard in full cut position		P
	The remaining part of the blade is fitted with a moveable guard		P
	The guard complies with the above at any mitre and bevel position in which the saw can be used		P
	Moveable guard:		P
	U shaped construction		P
	open construction		N/A
	Moveable guards have a blocking mechanism		P
18.1.102	Saw table:		P

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
18.1.102.1	The slot is as small as possible	c=12,1 mm < 20 mm d=9,6 mm < 10 mm	P
	The table is made of soft material (plastic, wood or aluminium)	Plastic	P
18.1.102.2	Saw tables are so designed that the workpiece is supported in the area immediately near the slot		P
18.1.103	Mitre saws are provided with a table fence 0,5 times the maximum depth of cut	Max. cutting depth:90 mm Fence height: 55 mm	P
18.1.104	Flanges		P
	The diameter of blade clamping flanges are at least 0,20 times the blade diameter	52,0 mm	P
18.1.105	Chip ejection opening is constructed in such a way that no injury occurs		P
18.1.106	Blade comes back automatically to the rest position and is automatically locked in this position		P
18.1.107	Mitre saws have positions so that the saw blade cannot be touched from under the table		P
18.2	Adequate stability		P
	Tilting test through an angle of 10° appliance does not overturn		P
18.3	Tools have adequate stability under the most onerous condition		P
18.4	No sharp edges, burrs, flashes and the like		P

19	MECHANICAL STRENGTH		
19.1	Adequate mechanical strength tested with the spring operated impact-test apparatus		P
	Tools possess adequate mechanical strength and withstand rough handling		P
19.2	Three blows applied to brush caps		N/A
	Impact energy: 0,5 ± 0,05 Nm	-	N/A
	Compression: 20,0 mm		N/A
	Test voltage (V)		N/A
	Other parts tested	Enclosure, handle, switch knob	P
	Impact energy: 1,0 ± 0,05 Nm	1,0 Nm	P
	Compression: 28,3 mm.....		P
	Test voltage (V)	1250 V / 2500 V / 3750 V	P
19.3	Adequate mechanical strength for brush holders and their caps		N/A
	Removing and replacing the brushes ten times		N/A

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
	Test torque (Nm)		N/A
	Brush-holder shows no damage		N/A

20	CONSTRUCTION		
20.1	Use tools of class I, class II or class III construction only	Class I	P
20.2	Accidental changing of the setting is unlikely to occur in tools with different voltages or different speed setting		N/A
20.3	Accidental changing of the setting of control devices is unlikely to occur		N/A
20.4	Removal of parts which ensure the required degree of protection against moisture without the aid of a tool not possible		P
20.5	The fixing of handles, knobs and the like used to indicate the position of switches or similar components in a wrong position not possible		P
20.6	Replaceable components suitable fitted		P
20.7	Replaceable of a flexible cable or cord requiring the displacement of a switch possible without subjecting internal wiring to undue stress		P
	After repositioning of the switch and before reassembling the tool, construction allows verification whether the internal wiring is correctly positioned		P
20.8	Wood, cotton, silk, ordinary paper and similar fibrous or hygroscopic material not used as insulation, unless impregnated chemically rendered non-fibrous.		P
	Driving belts not relied upon to ensure electrical insulation		N/A
20.9	Reinforced insulation only used if it is manifestly impracticable to provide separate basic insulation and supplementary insulation		P
20.10	Insulating barriers of Class II tools, and parts of Class II tools which serve as supplementary insulation or reinforced insulation		N/A
	– fixed in such a way that they cannot be removed without being seriously damaged		N/A
	– so designed that they cannot be replaced in an incorrect position, and when omitted, the tool inoperable or manifestly incomplete		N/A
20.11	Assembly gap with a width greater than 0,3 mm in supplementary insulation		P
20.12	Hazards from parts such as wire, screw, nut, washer or spring becoming loose for falling out of position.		P

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
	In Class I tools: accessible metal not made live		P
	In Class II tools: clearance and creepage distances not reduced to less than 50 % of values shown in 27.1		N/A
	Class II tools, other than those of the all-insulated type provided with an insulating barrier which encloses the motor and all other live parts		N/A
20.13	Supplementary and reinforced insulation not likely to be impaired by deposition of dirt, or by dust resulting from wear of parts within the tools		P
	Parts of natural or synthetic rubber used as supplementary insulation in Class II tools resistant to ageing		N/A
	Rubber parts so arranged and dimensioned that creepage distances are not reduced below the values specified in 27.1, even if cracks occur		N/A
	Ageing test for rubber parts		N/A
20.14	Internal wiring etc. not exposed to oil, grease and similar substances for constructions which necessitate the exposure, oil or grease used with adequate insulating properties		P
20.15	No access to brushes without the aid of a tool		N/A
	When tightening screw-type brush-caps, two surfaces clamped together		N/A
	Locking device retaining brushes in position not depending upon the brush-spring tension		N/A
	Screw-type brush-caps accessible from the outside of the tool made of insulating material or covered with insulating material of adequate mechanical and electrical strength		N/A
	Compliance with tests of 19.1 and 19.3		N/A
	Compliance with tests for supplementary and/or reinforced insulation		N/A
20.16	Radio and television suppressor adequately protected		P
20.17	Tools are fitted with a mains switch		P
20.18	Accidental operation of switches unlikely to occur		P
	The actuation of the mains switch or control device is not affected by, nor access to the switch or control device is restricted by adjustment of the table or by the workpiece		P
20.19	Tools provided with a switch or control device to stop the machine		P
20.20	No danger after voltage recovery		P
	Mitre saws mains switch interrupts the supply automatically		P

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
	No means for locking in ON position		P
20.101	Integral dust extraction and collection facilities or devices are existing		P

21	INTERNAL WIRING		
21.1	Internal wiring so rigid, so fixed or so insulated that , in normal use, creepage distances and clearances cannot be reduced below values specified in 27.1		P
	The insulation not damaged in normal use		P
21.2	Internal wiring and electrical connections adequately protected		P
21.3	Wireways smooth and free from sharp edges, burrs etc.		P
	Holes in metal through which insulated wires pass provided with bushings of insulating material		P
	Wiring prevented from coming into contact with moving parts		P
21.4	Class II tools need prevention for direct contact of basic insulated wires and accessible metal parts		N/A
21.5	Use of green/yellow conductors for earthing terminals only		P
21.6	Wiring between different parts of tools are not exposed to undue stress		N/A
	No damage of insulation by using flexible metallic tubes		N/A
	Open-coil springs are not used		N/A
	Flexing test		N/A
	Number of flexings		N/A
	Wiring withstands electric strength test		N/A
	Test voltage (V)		N/A
21.7	Minimum distance of 25 mm between moving parts and wiring or additional prevention		N/A
21.8	Aluminium wires not used for internal wiring		P

22	COMPONENTS		
22.1	Components comply with relevant IEC standards	(see appended table)	P
	Components used in accordance with their markings		P
	Capacitors in series with a motor winding marked with rated voltage and rated capacitance		P

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
	Measured voltage across capacitor with tool operating at 1,1 times rated voltage under minimum load not exceeding 1,1 times rated voltage of capacitor		P
22.2	Adequate breaking capacity of mains switches		P
	Mains switches have a contact separation of at least 3 mm		P
	Mains switches rated for frequent operation	50 000 cycle	P
	Switch operated 50 times with motor stalled		P
	Mains switches marked with individual ratings tested in accordance with IEC 60328		N/A
22.3	Mains switches not fitted in the flexible cable or cord		P
22.4	Overload protection devices of the non-self-resetting type		N/A
22.5	Plugs and appliance inlets for safety extra-low voltage circuits or for frequencies other than 50 Hz or 60 Hz not interchangeable with plugs, connectors and appliance inlet complying with IEC 60083 or IEC 60320		N/A
22.6	Capacitors not connected between contacts of thermal cut-outs		P
22.7	Components for basic radio and television interference suppression are not incorporated in plugs		P
22.8	Inductors for radio and television interference suppression inserted in the earthing circuit		N/A
	Inductor test		N/A
22.9	Appliance couplers comply with IEC 60320		N/A

23	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CABLES AND CORDS		
23.1	Tools are provided with		P
	– power supply cord with type X or M attachment	Type X	P
	– appliance inlet		N/A
	Type M attachment not easily replaceable by type X attachment		N/A
	Connector inserted in appliance inlet without difficulties		N/A
	No accidental contact with live parts or pins during insertion or removal of connector		N/A
23.2	Flexible cables or cords not lighter than:		P
	– polyvinyl chloride sheathed (227 IEC 60053)	H05VV-F	P
	– rubber sheathed (245 IEC 60053)	H07RN-F	P

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
	Class I tools: cord provided with green/yellow conductor, connected to earthing terminal of appliances and earthing contact of plug		P
23.3	Tools provided with plug complying with IEC 60083, IEC 60309-1 and IEC 60309-2		N/A
23.4	The nominal cross-sectional area (mm ²) of flexible cables or cords	1,0 mm ²	P
	Rated current (A)	5,97 A	P
23.5	Conductors relieved from strain and twisting and protected against abrasion		P
	Clear method of strain relief and prevention of twisting for type X flexible cords or cables		P
	Cord anchorages of Class II tools		N/A
	No strain on the earthing conductor due to failure of the cord anchorages of Class I tools		N/A
	Cord anchorages of Class II tools made of or lined with insulating material		N/A
	Cord anchorages of type X cords:		P
	- no contact between cable or cord and accessible metal parts through clamping screws		P
	- cable or cord not clamped by a metal screw directly bearing the cord		P
	- components not readily lost during cord replacement		P
	- one part of component securely fixed to an integral part of tool		P
	- replacement of cable or cord without special tool		P
	- suitable for all specified types of cable or cord		P
	- allowing for easy replacement of cable or cord		P
	Cord anchorage part of mains switch		N/A
	Removal of screws fixing other components during replacement of cable or cord		P
	Glands not used as cord anchorages		P
	Pull test for cord anchorage		P
	Pull force (N)	100 N	P
	Torque test for cord anchorage		P
	Torque (Nm)	0,35 Nm	P
	Mass of the tool (kg)	19,5 kg	P
	Cable or cord not damaged		P
	Cable or cord displacement (max. 2 mm)	0 mm	P
	Movement of conductors in the terminals (max. 1 mm)	0 mm	P

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
	Cord anchorage not damaged		P
	Creepage distances and clearances not reduced		P
23.6	Protection of flexible cords against excessive bending at the inlet opening by means of a cord guard of insulating material	D= 7,2 mm	P
	Protection of cord guard outside the tool		P
	Fixing of cord guard		P
	Curvature of cable or cord min 1,5 D	>25 mm	P
23.7	Cable or cord introduced into inlet openings without risk of damage		P
	Inlet opening for flexible cable or cord in insulating material or bushing of insulating material		P
	Bushing free from ageing effects in normal use		P
	No damage to flexible cable or cord due to shape of openings or bushings		P
	Inlet bushing not removable without aid of a tool		P
	Inlet bushings reliably fixed		N/A
	Bushings in Class II tools with inlet openings in metal (not of rubber nor part of the cord guard)		N/A
	Bushings in other tools with inlet openings in metal (not of rubber nor part of the cord guard)		N/A
23.8	Sufficient space for introduction and connection of supply cable or cord		P
	No damage to conductors when fitting cover		P
	Checking of correct position of conductors possible before fitting cover		P
	Removal of covers possible without a special tool		P
	Uninsulated end of conductor freed from its terminal not touching accessible metal parts		P
	Loosened wire test (with force of 2 N)		P

24.	TERMINALS FOR EXTERNAL CONDUCTORS		
24.1	Tools provided with terminals of screw type or equally effective devices		P
	Use of screws, nuts etc. with metric ISO thread for external conductors		P
	Screws and nuts for fixing external conductors, not used to fix other components		P
	Screws and nuts for fixing external conductors clamping internal conductors		P
	Soldered connections for external conductors in tools with type X or M attachment and rated input not exceeding 100 W		N/A

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
	Conductors maintained in position by additional means and not by soldering alone		N/A
	Use of barriers to maintain at least 50% of required creepage distances and clearances in case of conductor breaking away		N/A
24.2	Terminals for type X attachment suitable for connection of required size conductors:		P
	Rated current (A) of tool	5,97 A	P
	required cross-sectional area (mm ²)	0,75 mm ²	P
24.3	Terminals and terminations for type M attachment		N/A
	Pull test of 5 N		N/A
24.4	Terminals prevented from working loose:		P
	- use of two screws		N/A
	- use of one screw, fixed in a recess		P
	- use of self-hardening resins		N/A
	Internal wiring not subjected to stress		P
	Creepage distances and clearances not reduced below values specified in 27.1		P
	Torque test with torque 2/3 of torque specified in 26.1 (ten fastening and loosening operations)		P
	Torque test (Nm)	0,33 Nm	P
24.5	Conductors clamped between metal surfaces with sufficient pressure		P
	No damage to conductors		P
24.6	For tools rated current 16 A maximum, no special preparation of conductors required		P
	No slipping out of conductor during tightening of clamping screws		P
24.7	Use of pillar terminals:		P
	- rated current (A) of tool	5,97	P
	- measured thread diameter (mm)	2,88	P
	- measured hole diameter (mm)	3,06	P
	- measured length of thread in pillar (mm)	2,26	P
	- measured length of threaded part of screws (mm)	5,08	P
	- differences between diameter of hole and thread diameter (mm)	0,18	P
	Surface against which the conductor is clamped free from sharp edges		P
	Visibility of conductor end inserted into terminal		N/A
	Distance beyond threaded hole (mm)		N/A

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
	Depth of recess (mm) for recessed threaded holes		N/A
	Length of threaded part of (headed) screw mm) ..		N/A
24.8	Screw terminals:		N/A
	- rated current (A) of tool		N/A
	- thread diameter (mm)		N/A
	- length of thread on screw (mm)		N/A
	- length of thread in screw hole or nut (mm)		N/A
	- differences between diameter (mm) of head and shank of screw		N/A
	- height of screw head (mm)		N/A
	Use of extruded terminal screw hole		N/A
	- edge of extrusion smooth		N/A
	- length of thread in screw hole (mm)		N/A
	- length of extrusion (mm)		N/A
	- 80% of original thickness or adequate mechanical strength		N/A
	Use of terminals with intermediate part (pressure plate):		N/A
	- intermediate part locked against rotation		N/A
	- thickness of intermediate part (mm)		N/A
	- length of thread on screw (mm)		N/A
	- differences between diameter of head and shank (mm)		N/A
	Use of intermediate part with more than one screw.		N/A
	- thread diameter of screw (mm)		N/A
	Use of recessed screw hole or nut:		N/A
	- depth of recess (mm)		N/A
	- length of headed screw (mm)		N/A
24.9	Stud terminals:		N/A
	- rated current (A)		N/A
	- rated diameter (mm)		N/A
	- differences between thread diameter (mm) and inner diameter of washers		N/A
	- differences between thread diameter and outer diameter of washers (mm)		N/A
	A negative deviation of 0,15 mm is allowed for the normal thread diameter and for the nominal difference between diameters of head and shank of the screw		N/A
24.10	Use of thread smaller than specified:		N/A

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
	Torque test		N/A
	Torque value (Nm) (1,2 times the torque specified in 26.1)		N/A
	Pull test (24.4)		N/A
	Pull force (N)		N/A
24.11	Terminals for type X and M attachment located in proximity to corresponding terminals		P
24.12	Terminals not accessible without the aid of a tool		P
24.13	Conductor cannot slip out, if soldering or welding breaks		N/A
24.14	Location or shielding of terminals and terminations for type X and M attachments such as to prevent hazards from escaped wire		P
	Test with 8 mm escaped wire of stranded conductor		P

25	PROVISION FOR EARTHING		
25.1	Accessible metal parts of Class I tools permanently connected to earthing terminal or earthing contact of appliance inlet		P
	No electrical connection between earthing terminals or contacts and neutral terminal		P
	No provision for earthing in Class II and III		N/A
25.2	Earthing connections not made by screwless terminals		P
	Clamping means adequately locked against loosening		P
	Earthing connections not possible to loosen without the aid of a tool		P
25.3	No risk of corrosion between metal parts of earthing terminal and copper of earthing conductor or other metal in contact with terminal		P
	Body of terminal made of brass or other metal no less resistant to corrosion		P
	Screw or nut of brass or other metal no less resistant to corrosion		P
	No risk of corrosion between copper and aluminium (or aluminium alloy) of enclosure		P
25.4	For tools with power supply cords or cables, current-carrying conductors become taut before the earthing conductor if the cable or cord slips out of anchorage		P
25.5	Resistance of earthing circuit (max. 0,1 Ω).....	0,036	P

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
25.6	Terminal screws for earthing conductors don't serve any other purpose, e.g. mechanical fixing		P

26	SCREWS AND CONNECTIONS		
26.1	All screwed connections withstand the mechanical stresses in normal use		P
	Use of screws diameter < 3 mm transmitting contact pressure or tightened by the user		N/A
	Screws not made of soft metal or liable to creep metal		P
	Diameter of screws of insulation material min. 3 mm		N/A
	Use of screws of insulating material only for non-electrical connections		N/A
	Screws of insulating material removable for cord replacement etc. not used if replacement by metal screws could impair electrical insulation		N/A
	Torque test on screws and nuts transmitting contact pressure or screws tightened by the user		P
	Torque test	1,8 Nm for cord anchorage 0,5 Nm for screw terminal 2,0 Nm for enclosure	P
	Number of operations	10 / 5 / 5 times	P
26.2	Screws in engagement with thread of insulating material		P
	Correct introduction of screw into nut or screw hole ensured		P
26.3	Contact pressure not transmitted through insulating material (unless compensated for shrinkage or distortion)		N/A
26.4	Space-threaded screws not used for connection of current-carrying parts, unless directly clamping and locking means provided		P
	No thread-cutting screws used for connection of current-carrying parts, unless they generate full from standard machine screw thread		P
	Use of space-threaded or thread-cutting in earthing circuit		N/A
26.5	Screws for mechanical connection between parts of tool locked against loosening if connection carries current		N/A
	Rivets for current-carrying connections subject to torsion in normal use, locked against loosening		N/A

IEC 61029-2-9			
Clause	Requirement – Test	Result – Remark	Verdict
27	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH INSULATION		
27.1	Creepage distances	(see appended table)	P
	Clearances	(see appended table)	P
	Distances through insulation	(see appended table)	P
	Use of minimum three layers of thin sheet material for reinforced insulation		N/A
	Electric strength test on two layers of insulation		N/A
	Test voltage (V)		N/A
27.2	Distances between metal parts	(see appended table)	P
27.3	Rated current over 25 A	(see appended table)	N/A
28	RESISTANCE TO HEAT, FIRE AND TRACKING		
28.1	External parts of insulating materials: ball pressure test	(see appended table)	P
28.2	Insulating parts retaining live parts in position: ball pressure test	(see appended table)	P
	Insulating parts retaining live parts in position: conical mandrel test	(see appended table)	N/A
28.3	Resistance to tracking	(see appended table)	P
29	RESISTANCE TO RUSTING		
	Ferrous parts adequately protected against rusting		N/A
	Exposure to a 10% solution of ammonium chloride and moisture treatment		N/A
30	RADIATION		
	No emission of harmful radiation		N/A
B	APPENDIX B		N/A
C	APPENDIX C		N/A

10.1	TABLE: input data (in normal load conditions)					P
rated input (W)	rated voltage U (V)	rated input I (A)	measured input (W) or current (A)	deviation	load conditions/remark	
1200 W	220-240 V	-	1200 W	100 %	Attain rated input	
supplementary information						

11.1	TABLE: temperature rise measurements					P
	test voltage (V)	207/ 220/ 240/ 254 50 Hz				
	ambient temperature °C	20,9/ 20,4/ 21,7/ 20,3 °C				
	operating time	S2 10 min				
	torque load (Nm)	2,84 Nm				
	input current (A) / power (W)	6,12/ 5,79/ 6,28/ 7,12 A 1186/ 1162/ 1250/ 1372 W				
	speed (/min)	2574/ 2676/ 2749/ 2775 /min				
temperature rise dT of part/at:		dT (K)	required dT (K)			
Supply cord		3	50			
Switch ambient		1	30			
Capacitor		5	50			
Internal wire		8	50			
Switch knob		3	50			
Handle		1	50			
Enclosure(metal enclosure of motor)		58	60			
Enclosure(Plastic)		44	60			
supplementary information						

11.3	TABLE: temperature rise of windings					P
	test voltage (V)	207 V				
	t1 °C	20,0 °C				
	t2 °C	20,9 °C				
temperature rise dT of winding and core laminations (by resistance):		R ₁ (Ω)	R ₂ (Ω)	dT (K)	allowed dT (K)	insulation class
Main winding		3,586	5,028	101	140	Class H
Aux. winding		6,236	8,644	97,4	140	Class H

12.1 + 12.2	TABLE: Leakage current measurements at operating temperature		P
	at 1,06 times rated voltage (V)	254 V	—
Leakage current I between:		I (Ma)	required I (Ma)
L/N and enclosure main switch ON		0,008 / 0,008	0,25
L/N and enclosure main switch OFF		0,005 / 0,005	0,25
L/N and motor core main switch ON		0,02 / 0,02	5,0
L/N and motor core main switch OFF		0,01 / 0,01	5,0

15.2	TABLE: insulation resistance measurements		P
insulation resistance R between:		R MΩ	required R MΩ
live parts and body		>500 MΩ	7 MΩ
live parts and earthed metal parts		>500 MΩ	2 MΩ
live parts and metal parts		>500 MΩ	2 MΩ
metal parts and body		>500 MΩ	5 MΩ

15.3	TABLE: electric strength measurements		P
test voltage applied between:		test voltage (V)	breakdown
L/N and motor earthed metal part		1250 V	No
L/N and motor core		1250 V	No
Motor core and body		2500 V	No
L/N and body		3750 V	No
supplementary information			

22.1	TABLE: list of critical components					P
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾	
Supply cord	Ta An Electric	H05VV-F	3 G 1,0 mm ²	IEC 60227	VDE	
Alternative	Ta An Electric	H05VV-F	3 G 1,5 mm ²	IEC 60227	VDE	
Alternative	Lu Chiang Electric	H05VV-F	3 G 1,0 mm ²	IEC 60227	VDE	
Alternative	Lu Chiang Electric	H05VV-F	3 G 1,5 mm ²	IEC 60227	VDE	
Alternative	I-Sheng Electric	H05VV-F	3 G 1,0 mm ²	IEC 60227	VDE	
Alternative	I-Sheng Electric	H05VV-F	3 G 1,5 mm ²	IEC 60227	VDE	
Alternative	Nexans	H07RN-F	3 G 1,0 mm ²	IEC 60245	LCIE	
Alternative	Nexans	H07RN-F	3 G 1,5 mm ²	IEC 60245	LCIE	

object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾
Alternative	Ta Tun Electric	H07RN-F	3 G 1,0 mm ²	IEC 60245	VDE
Alternative	Ta Tun Electric	H07RN-F	3 G 1,5 mm ²	IEC 60245	VDE
Power plug	Ta An Electrical	TP-66	250 Vac; 13 A fuse included	BS 1363	ASTA
Alternative	Ta An Electrical	TP-52	16 A; 250 Vac	IEC 60884	VDE
Alternative	Ta An Electrical	TP-50	16 A; 250 Vac	IEC 60884	VDE
Alternative	Ta An Electrical	TP-51	16 A; 250 Vac	IEC 60884	VDE
Alternative	Ta An Electrical	TP-22	10 or 15 A; 250 VAC	IEC 60884	NSW 18886
Alternative	Ching Cheng Wire Material	EL-208	16 A; 250 Vac	SANS 164-1 SABS 164-1	SABS
Alternative	Ta An Electrical	TP-34	10 A; 250 Vac	BS 1363	IRAM
Alternative	Ta An Electrical	TP-33	10 A; 250 Vac	CEI 23-50	IMQ
Alternative	Ta An Electrical	TP-32	10 A; 250 Vac	IEC 60884	SEMKO
Alternative	Ta An Electrical	TP-23	10 A; 250 Vac	IEC 60884	DEMKO
Switch	Chily Precision Industrial	8301	250 Vac; 8(8) A; 5E4	IEC 61058-1	VDE
Alternative	Defond Components Ltd.	DGU-1115	250 Vac; 8(8) A; 5E4	IEC 61058-1	UL Demko
Motor capacitor	SEIKA ELECTRIC CO.,LTD	MK2005	400 Vac; 20 µF ; 40/085/21	IEC 60252-1	VDE
Motor Protector	SENSATA Technologies	17AM024A5	250 Vac; 10 A; Tf 85 °C	IEC 60730	KEMA KEUR
Terminal Block	Heavy Power	PA-8	450 Vac; 17,5 A	IEC 60998	VDE

¹⁾ An asterisk indicates a mark which assures the agreed level of surveillance

27.1	TABLE: clearances and creepage distance measurements					P
clearances cl and creepage distance cr between:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required cr (mm)	cr (mm)
live parts of different polarity:	-	240	2,0	>4	2,0	>4
Stator winding and motor core	-	240	2,5	3,2	3,0	3,2
Internal wire and enclosure	-	240	4,0	>6	4,0	>6
Live part and plastic enclosure	-	240	8,0	>12	8,0	>12
supplementary information						

clearances cl and creepage distance cr between:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required cr (mm)	cr (mm)
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distance through insulation				P
distance through insulation di between:	U r.m.s.	test voltage (V)	required di (mm)	di (mm)
windings and accessible metal parts separated by reinforced insulation	240	-	2,0	-
metal parts separated by supplementary insulation	240	-	1,0	1,5
other metal parts separated by reinforced insulation				
supplementary information				

27.3	TABLE: creepage distance measurements					N/A
clearances cl and creepage distance cr between:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required cr (mm)	cr (mm)

28.1	TABLE: ball-pressure test			P
	required impression diameter 2 mm (mm)			
part under test		test temperature °C	impression diameter (mm)	
Enclosure		75	<1,0	
Terminal block		125	<1,0	
supplementary information				

28.2	TABLE: hot mandrel test			P
	mandrel temperature 300 °C.....		Glow wire test at 550 °C	
	test duration 5 min (min)			
	pressure force 12 N (N)			
part under test		ignition of sample or gases		
Enclosure (550 °C)		No		
Terminal block (550 °C)		No		
supplementary information				

28.3	TABLE: resistance to tracking			P
	test current (A) 1,0 ± 0,1 A		1 A	
	number of drops 50		50 drops	
	test solution 0,1% ammonium chloride		0,1% NH ₄ Cl solution	
part under test		flashover or breakdown		
Enclosure		No		
Terminal block		No		
supplementary information				

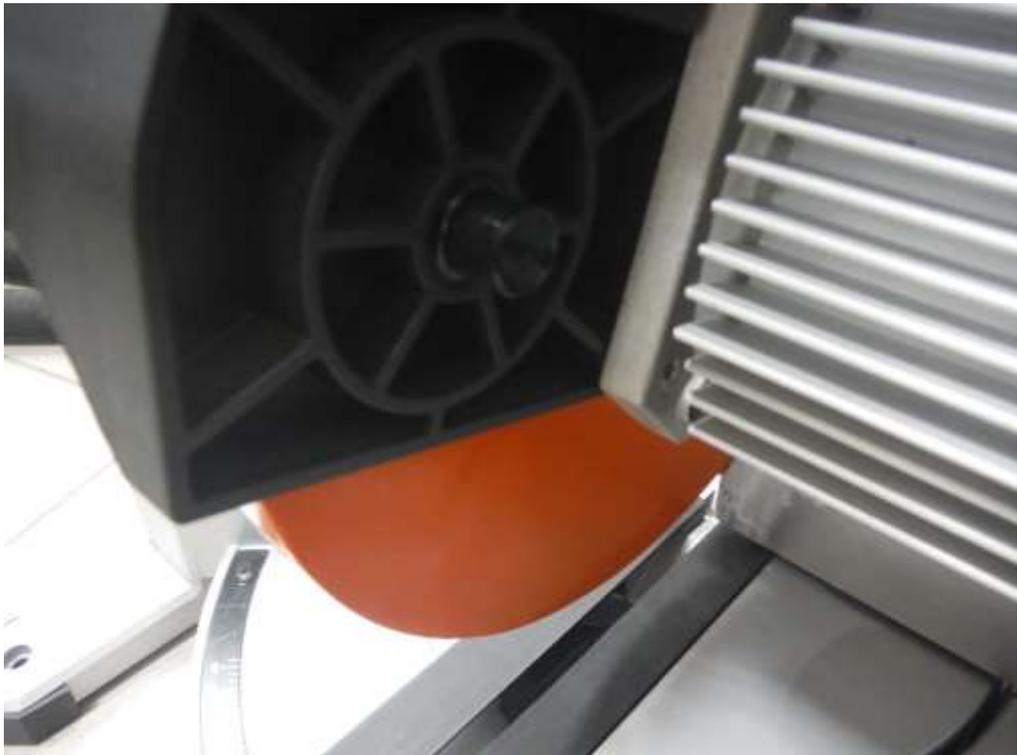
C17.101	TABLE: fault condition test			N/A
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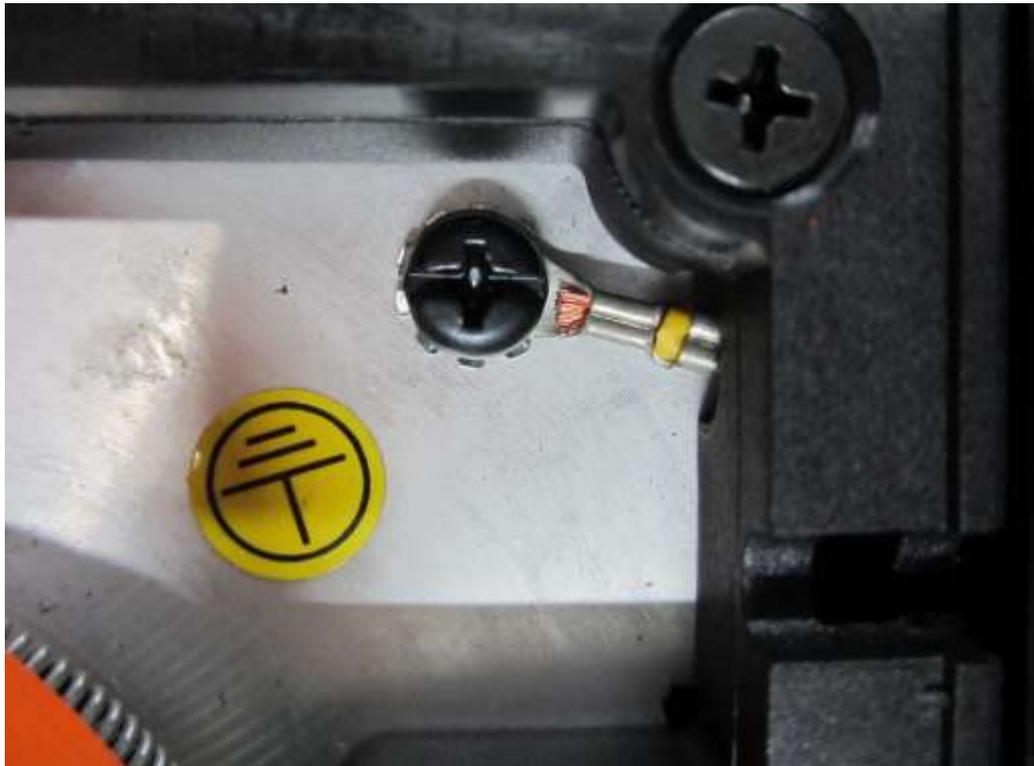
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