



Ref. Certif. No.

JPTUV-011039-M2

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST
CERTIFICATES FOR ELECTRICAL EQUIPMENT
(IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE
CERTIFICATS D'ESSAIS DES EQUIPEMENTS
ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE *CERTIFICAT D'ESSAI OC*

Product
Produit

Air conditioner indoor unit

Name and address of the applicant
Nom et adresse du demandeur

Electra Air-conditioning (Shenzhen) Co., Ltd.
2 WUHE AVENUE S.,
BANTIAN, BUJI, Shenzhen, Guangdong, P.R. China

Name and address of the manufacturer
Nom et adresse du fabricant

Electra Air-conditioning (Shenzhen) Co., Ltd.
2 WUHE AVENUE S.,
BANTIAN, BUJI, Shenzhen, Guangdong, P.R. China

Name and address of the factory
Nom et adresse de l'usine

Electra Air-conditioning (Shenzhen) Co., Ltd.
2 WUHE AVENUE S.,
BANTIAN, BUJI, Shenzhen, Guangdong, P.R. China

Rating and principal characteristics
Valeurs nominales et caractéristiques principales

AC 220-240V; 50Hz; Class I
1) 32W; 2) 40W; 3) 56W; 4) 59W; 5) 105W; 6) 60W
IP20 (Indoor unit only)
Refrigerant: R410A
ELECTRA

Trade mark (if any)
Marque de fabrique (si elle existe)

1) WNG25 DCI, 2) WNG35 DCI, 3) WNG50 DCI, 4) WNG60 DCI,
5) WNG 80 DCI, 6) WNG 72 DCI

Model/type Ref.
Ref. de type

For model differences, refer to the test report.
Re-issue of JPTUV-011039-M1 dated 26.08.2005,
due to second modification.

Additional information (if necessary)
Information complémentaire (si nécessaire)

A sample of the product was tested and found
to be in conformity with
Un échantillon de ce produit a été essayé et a été
considéré conforme à la

IEC 60335-2-40:1995 + A1
IEC 60335-1:1991 + A1 + A2

As shown in the Test Report Ref. No. which forms part
of this Certificate
Comme indiqué dans le Rapport d'essais numéro de
référence qui constitue une partie de ce Certificat

12011466 003

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification



TÜV Rheinland Group

TÜV Rheinland Japan Ltd.
Shin Yokohama Daini Center Bldg.
3-19-5, Shin Yokohama, Kohoku-ku
Yokohama 222-0033 Japan
Phone + 81 45 470-1850
Fax + 81 45 473-5221
Mail: info@jpn.tuv.com
Web: www.tuv.com

Signature:

Yoshihiro Takahata

Date: 28.12.2005

TEST REPORT**IEC 60335-2-40****Safety of household and similar electrical appliances
Part 2: Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers**

Report Reference No. : 12011466 003

Compiled by (+ signature) : S. Kischka

Approved by (+ signature) : M. Kera

Contents : 15 pages

Date of issue : 2005-12-14

CB Testing laboratory Name : TÜV Rheinland Japan Ltd., Yokohama Laboratory

Address : 4-25-2 Kita-Yamata, Tsuzuki-ku, Yokohama 224-0021, Japan

Testing location/procedure : CBTL ☒ SMT ☐ TMP ☐

Address : Same as above

Applicant's Name : Electra Air-Conditioning (Shenzhen) Co., Ltd.

Address : 2 Wuhe Avenue S., Bantian, Buji, Shenzhen, Guangdong, P. R. China

Test specificationStandard : IEC 60335-2-40:1995 + A1:2000 used in conjunction with
IEC 60335-1:1991 + A1:1994 + A2:1999

Test procedure : CB

Non-standard test method : N.A.

Test Report Form No. : IEC60335_2_40C

TRF originator : AENOR

Master TRF : Dated 2002-02

Copyright © 2002 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Test item description : Air conditioner indoor unit

Trademark : ELECTRA

Model and/or type reference : WNG 72 DCI

Manufacturer : Same as applicant

Factory : Same as applicant

Rating(s) : Rated voltage: 220-240V~ 50Hz

Rated power: 60W

Refrigerant: R410A

IP20

Copy of the marking plate:

ELECTRA	MODEL: WNG 72 DCI		
PROD NO.:	Fuse: 20A(aM)		
TYPE:	COSφ=0.97		
220-240V~ 50Hz	IP20	Rev.A	Dehumidification: 2.5 l/h
R410A:	Prated:60W	PS:6.3MPa	Ps: 0.8MPa
		Temp.Class: T1	Weight: 15kg

Summary of testing:

1. All tests performed on WNG 72 DCI;
2. Input test, heating test and abnormal tests made in a test chamber, which can imitate the most severe condition in normal use.

Test items particulars:

Serial Number : Prototype samples

Additional information..... : N(.A.)

..... :

..... :

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 : 2005-11-21

Date(s) of performance of test..... : 2005-11-21—2005-12-10

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 an NCB in accordance with IEC 60335-1.

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

Clause numbers between brackets refer to clauses in IEC 60335-1

"(see Enclosure #)" refers to an additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

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

History of amendments and modifications:

Ref.No.12011466 001, dated 2005-05-17(Original report);

Ref.No.12011466 002, dated 2005-07-26(Modification report);

Ref.No.12011466 003, dated 2005-12-14(Modification report);

Description of modification:

This report has two issues:

1. New model approval.

The new model WNG 72 DCI is identical with issued model WNG 60 DCI except for:

- The fan motor is changed as: RD-310-25-8, mfg: Welling;
- Alternate fan motor is: DR-8938-538D, mfg: Shinano;
- The controller is changed.

Details please refer to table 24.1.

2. Correcting some of the photos for test report 12011466 002 for issued model WNG 80 DCI, pictures 11-20 are for model WNG 80 DCI controller, details please refer to photo document.

IEC 60335-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
7	MARKING		P
7.1	Rated voltage or voltage range (V) :	220-240V	P
	Symbol for nature of supply including number of phases, unless for single phase operation (IEC 60335-2-40:1995)	~	P
	Rated frequency or frequency range (Hz) :	50Hz	P
	Rated input or rated current	See rating label.	P
	Manufacturer's or responsible vendor's name, trademark or identification mark	ELECTRA	P
	Model or type reference	See rating label	P
	Symbol for Class II	Class I appliance	N
	Symbol for degree of protection against ingress of water, other than IPX0 (IEC 60335-2-40:1995)	IP20	N
	Mass of the refrigerant or of each refrigerant in a blend (except for azeotropic type (IEC 60335-2-40:1995)		N
	Refrigerant identification (IEC 60335-2-40:1995)	R410A	P
	Permissible excessive operating pressure in pascals for sanitary hot water heat pumps (IEC 60335-2-40:1995)		N
	Excessive operating pressure of the refrigerant circuit for suction and discharge, if they differ (IEC 60335-2-40:1995)	See rating label	P
	The maximum operating pressure for the heat exchanger (IEC 60335-2-40/A1:2000)	See rating label	P
	Separate marking of the appliances with all the rated characteristics of the supplementary heaters (IEC 60335-2-40:1995)		N
	Marking of the direction of the fluid flow (IEC 60335-2-40:1995)		N
10	POWER INPUT AND CURRENT		P
10.1	Power input at rated voltage and normal operating temperature not deviating from rated input by more than shown in table; measured power input (W); rated input (W); deviation :	(See appended table)	P
10.2	Current at normal operating temperature not deviating from rated current by more than shown in table; measured current at rated voltage under normal operation (A); rated current (A); deviation :	Not marked on rating label.	N
11	HEATING		P
11.8	Monitored temperatures not exceeding the values of Table 3 (IEC 60335-2-40:1995)	(see appended table)	P
	Protective devices do not operate		P

IEC 60335-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	Sealing compound not flowing out		P
	Temperature of the air in the outlet duct not exceeding 90 °C (IEC 60335-2-40:1995)		N
13	LEAKAGE CURRENT		P
13.1	Leakage current not excessive and electric strength adequate		P
13.2	Leakage current measured by means of circuit described in Annex G (IEC 60335-2-40:1995)		P
	Leakage current measurements	(See appended table)	P
13.3	Electric strength test of insulation. See Note in Interpretation Sheet I-SH 02, August 1994	(See appended table)	P
	No breakdown during the test		P
16	LEAKAGE CURRENT AND ELECTRIC STRENGTH		P
16.3	Electric strength tests (values in table 5). See Note in Interpretation Sheet I-SH 02, August 1994	(See appended table)	P
17	OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS		P
	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use		P
	Appliance supplied with 1,06 or 0,94 times rated voltage and the most unfavourable short-circuit or overload likely to occur in normal use applied	The SPS transformer short secondary circuits, the appliance can't work normally, no hazards occurred.	P
	Temperature rise of insulation of the conductors of safety extra-low voltage circuits not exceeding the relevant value specified in table 3 by more than 15 K		N
	Temperature of the winding not exceeding the value specified in table 6	40K	P
	Except fail-safe transformer complying 15.5 of IEC 61558-1 (IEC 60335-1/A2:1999)	Not fail-safe transformer	N
19	ABNORMAL OPERATION		P
19.2	Test of appliance with motor rotors, other than motor-compressors, operated for 15 days (360 h) or until a protection device opens the circuit (IEC 60335-2-40:1995)		P
	Insulation of motor windings (IEC 60335-2-40:1995) :	(See appended table)	P
	Temperature of enclosure does not exceed (°C) (IEC 60335-2-40:1995) :	(See appended table)	P

IEC 60335-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	Temperature of the windings does not exceed the values shown in the table; temperature (°C) (IEC 60335-2-40:1995)	(See appended table)	P
	Electric strength test as specified in 16.3, 72 h after the beginning of the test (IEC 60335-2-40:1995)	(See appended table)	P
	A 30 mA residual current device does not open (IEC 60335-2-40:1995)	(See appended table)	P
	At the end, the leakage current between the windings and the enclosure does not exceed 2 mA (IEC 60335-2-40:1995)	(See appended table)	P
19.11	Electronic circuits, compliance checked by evaluation of the fault conditions specified in 19.11.2 for all circuits or parts of circuits, unless they comply with the conditions specified in 19.11.1		P
	Windings temperature not exceeding values shown in Table 6 (IEC 60335-2-40:1995)		P
	Appliance shall comply with the conditions of 19.14 (IEC 60335-2-40:1995)		P
	Appliance withstands the test: a conductor becomes open circuited and three conditions are met (IEC 60335-2-40:1995)		P
19.11.2	Fault conditions applied one at a time, the appliance operated under conditions specified in Cl. 11, but supplied at rated voltage, the duration of the tests as specified:		P
	a) short circuit of creepage distances and clearances between live parts of different potential, if these distances are less than the values specified in 29.1, unless the relevant part is adequately encapsulated	The Cl/Cr measured not less than the values specified in 29,1.	N
	b) open circuit at the terminals of any component		P
	c) short circuit of capacitors, unless they comply with IEC 60384-14 or 14.2 of IEC 60065		P
	d) short circuit of any two terminals of an electronic component, other than integrated circuits. This fault condition is not applied between the circuits of an optocoupler		P
	e) failure of triacs in the diode mode		N
	f) failure of an integrated circuit. In this case the possible hazardous situations of the appliance are assessed to ensure that safety does not rely on the correct functioning of such a component		N
	Short-circuit of low-power circuits (IEC 60335-2-40:1995)		N
	The duration of the tests (IEC 60335-2-40:1995):		P

IEC 60335-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	- as specified in 11.7 but only for one operating cycle (in case the fault cannot be recognised by user) IEC 60335-2-40:1995)		N
	- as specified in 19.2, if fault can be recognised by user (IEC 60335-2-40:1995)		P
	- until steady conditions are established (IEC 60335-2-40:1995)		N
	Test ended if interruption of supply occurs within the appliance (IEC 60335-2-40:1995)		P
	Fault condition f) applied to encapsulated or similar components (IEC 60335-2-40:1995)		N
	PTC's, NTC's and VDR's resistors not short-circuited if used as specified by manufacturer (IEC 60335-2-40:1995)		P
19.14	No flames, molten metal, poisonous or ignitable gas or deformed enclosures (IEC 60335-2-40:1995)		P
	Temperatures rise shall not exceed the values shown in Table 7 (IEC 60335-2-40:1995)		P
	The electric strength test, the test voltage being:		P
	- basic insulation: 1000 V		P
	- supplementary insulation: 2750 V		P
	- reinforced insulation: 3750 V		P
24	COMPONENTS		P
24.1	Components comply with safety requirements in relevant IEC standards	Respective safety relevant components complying with international standards or equivalent national version. See appended table	P
	Motor-compressors not tested according to IEC 60335-2-34 (not necessary to meet all requirements of IEC 60335-2-34) (IEC 60335-2-40:1995)		N
24.1.5	Voltage across capacitors in series with a motor winding does not exceed 1,1 times rated voltage, when the appliance is supplied at 1,1 times rated voltage under minimum load	No capacitor for fan motor	N
	Capacitors for which 30.2.3. is applicable and permanently connected in series with a motor shall be class P1 or P2 of IEC 60252 (IEC 60335-1/A2:1999)		N
	List of components	(See appended table)	P
29	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH INSULATION		P

IEC 60335-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
29.1	Creepage distances and clearances not less than specified in table 13	(See appended table)	P
	Values increased by 4 mm in case of reinforced insulation when resonance voltage		N
	Creepage distances and clearances for circuits with voltages greater than 250 V r.m.s. (345 V peak) comply with table (IEC 60335-2-40:1995)		N
	For motor-compressors with working voltages ≤ 250 V, 29.1 of IEC 60335-2-34 applies (IEC 60335-2-40:1995)		N
	Creepage distances and clearances for motor-compressors with working voltages > 250 V r.m.s. and ≤ 600 V r.m.s. not less than stated in Table 101 (IEC 60335-2-40:1995)		N
30	RESISTANCE TO HEAT, FIRE AND TRACKING		P
30.1	See Annex H		P
	Relevant external parts of non-metallic material		N
	Parts supporting live parts and parts providing supplementary or reinforced insulation sufficiently resistant to heat		P
	Ball-pressure test with a force of 20 N, diameter of impression not exceeding 2 mm:	(see appended table)	P
	External parts: at 75 °C		N
	Parts supporting live parts: at 125 °C	PCB Transformer bobbin	P
	Parts providing supplementary or reinforced insulation: temperature (°C):.....		P
30.2	Relevant parts of non-metallic material adequately resistant to ignition and spread of fire		P
30.2.1	Possible burning test of relevant parts according to Annex J		N
	Glow-wire test of Annex K made at temperature 550 °C		N
30.2.3	Appliances operated while unattended, possible bad-connection test according to Annex L		N
	Glow-wire test of Annex K made at 850 °C	PCB Transformer bobbin	P
	Possible needle-flame test according to Annex M		N
30.2.4	Parts of non-metallic material within a distance of 50 mm from parts not withstanding the tests of 30.2.2 or 30.2.3, subjected to the needle-flame test of Annex M		N
30.3	Relevant insulating material have adequate resistance to tracking	(see appended table)	P

IEC 60335-2-40			
Clause	Requirement - Test	Result - Remark	Verdict
	Tracking test at 175 V according to Annex N	PCB Transformer bobbin	P
	Tracking test at 250 V according to Annex N		N
	No hazard other than fire, tracking test at 175 V according to Annex N, and in addition needle-flame test of surrounding parts according to Annex M		N
	Possible needle-flame test of non-metallic material		N

10.1	TABLE: input power and current					P
	Operation mode	Cooling mode: Indoor(DB/WB °C): 32/23 Heating mode: Indoor(DB/WB °C): 27/24				P
	Test voltage (V)	230V				—
Model	Rated cooling (W)	Rated heating (W)	Measured cooling (W)	Measured heating (W)	Deviation cooling	Deviation heating
WNG 72 DCI	60	60	64	65	6,7%	8,3%

11.8	TABLE: TEMPERATURE RISE MEASUREMENTS		P
WNG 72 DCI	Operation mode	Cooling mode: Indoor: 32/23 Heating mode: Indoor: 27/24	P
	t1 (°C)	30	—
	t2 (°C)	See remark	—
	Test voltage (V)	254V	—
Temperature T of part:		Measured temperature (°C)	Limit temperature (°C)
Enclosure of indoor fan motor (RD-310-25-8)		56,1	150
Enclosure of indoor fan motor (DR-8938-538D)		60,1	150
Louver motor enclosure		27,1	150
SPS transformer enclosure		42,3	115
Transformer for ESF and ION		27,6	120
Relay K6		45,4	T55
Terminal block		27,8	Material test
PCB		33,1	Material test
Filter capacitor		50,2	T70
Remark 1: The heating test was performed at the high speed and low speed of fan motor, the highest value was listed.			

13.2	TABLE: LEAKAGE CURRENT AT OPERATING TEMPERATURE					P
	At 1,15 times rated input (W)	N/A				-
	At 1,06 times rated voltage (V)	254V				-

IEC 60335-2-40			
Clause	Requirement - Test	Result - Remark	Verdict

Measured between:	Measured (mA)	Limit (mA)
L/N to earthed metal parts	0,88	3,5
L/N to outside enclosure (class II construction)	0,071	0,25

13.3	TABLE: ELECTRICAL INSULATION AT OPERATING TEMPERATURE		P
Test voltage applied between:	Test voltage (V)	Result	
L/N- GND	1000	No	
L/N - enclosure of indoor unit (with aluminum foil)	3750	No	

16.3	TABLE: ELECTRIC STRENGTH TESTS		P
Test voltage applied between:	Test voltage (V)	Result	
L/N – GND	1250	No	
L/N - enclosure of indoor unit (aluminium foil)	1250	No	
Point where motor winding connected with capacitor-protective earth	1900	No	
Point where compressor winding connected with capacitor-protective earth	1900	No	

19.2	TABLE: lock motor test, temperature rise measurements				P
Test procedure	Supplied with rated voltage (240V)				-
Duration	15 days, after 3 days HV test performed				P
Ambient temperature [°C]	25				-
Measured samples	Insulation class	Enclosure temperature [°C]	Winding temperature [°C]	HV test performed with 1250V	Leakage current [mA]
RD-310-25-8	B	104,4	104,0	P	0,02
DR-8938-538D	B	110	123,9	P	0,04

24.1	TABLE: COMPONENTS					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity	
Remark 1: For thermal cut-outs, thermal links of fan motors and transformers which have been approved according to relevant IEC standards, the manufacturer, types and characters not listed in the CDF but should be in this scope authorized by original certification bodies.						
Remark 2: All components are listed						
Built-in components with windings: (motors, transformers, magnetic coils etc.)						
Fan motor	Welling	RD-310-25-8	DC 200-400V Class E 25W	IEC 60335-2-40	Tested with appliance	
Alternate	Shinano	DR-8938-538D	DC 224-336V ClassE 25W	IEC 60335-2-40	Tested with appliance	

IEC 60335-2-40					
Clause	Requirement - Test		Result - Remark		Verdict
Louver motor	Huayang	24BYJ48	Main: 300Ω DC12V	IEC 60335-2-40	Tested with appliance
Alternate	Leili	24BYJ48	Main: 300Ω DC12V	IEC 60335-2-40	Tested with appliance
Alternate	Huaxia	24BYJ48	Main: 300Ω DC12V	IEC 60335-2-40	Tested with appliance
SPS transformer in controller	EHK	--	Input voltage: 198~264 VAC Input current ~ 0,1A Output voltage: +12VDC @ 0,3A max +5VDC @ 0,3A max	IEC 60335-2-40	Tested with appliance
Transformer for ESF and ION (Optional)	New Era	DB36-E135-160 1	Pri.: 230VAC 50Hz sec.:12,5VAC 500mA Class B	IEC 60335-2-40	Tested with appliance
Alternate	Dong guan Oriental Hero Electrical	OH35289ET	Pri.:230V±5% sec.:19VAC 160mA Class B	IEC 60335-2-40	Tested with appliance
Alternate	Jing quan hua	DB-EI35-2982A	Pri.: 230VAC 50Hz sec.:14VAC 250mA Class B	IEC 60335-2-40	Tested with appliance
Protector for ESF and ION Transformer	Auto electronics Ltd.	A4	250V 2A Operated temp.: 130°C	IEC 60335-2-40	VDE
Controller	Electra HK Technologies Ltd	DCI-WNG18	--	IEC 60335-2-40	Tested with appliance
ESF for WNG (Optional)	Shang dong xue sheng	DJQ-13	DC12V	IEC 60335-2-40	Tested with appliance
IONIZER (Optional)	EHK	ION G1	DC12V	IEC 60335-2-40	TUV 16005670 001
Alternate	Shang dong xue sheng	ION G1	DC12V	IEC 60335-2-40	TUV 16005670 001
Ionzier power box	EHK	ION POWER BOX	Input voltage: DC12V Output voltage: DC6-12V	IEC 60335-2-40	Tested with appliance
Alternate	Shangdong xuesheng	ION POWER BOX	Input voltage: DC12V Output voltage : DC6-12V	IEC 60335-2-40	Tested with appliance
Built-in components : (switches, thermostats, heater, plugs, wires, capacitors, sockets, RFI-filters etc.)					
Terminal block	Huang Zhong	ET-16-6	450VAC 4,0mm ²	IEC 60335-1	Tested with appliance
Alternate	Jiangsu Changheng	JX-W-6	450VAC 4,0mm ²	IEC 60335-1	Tested with appliance
Safety components in controller (IU)					
Fuse in controller	Optional	T type	3,15A/250VAC	IEC 60127	TUV or any CENELEC

IEC 60335-2-40			
Clause	Requirement - Test	Result - Remark	Verdict

Varistor	Thinking	TVR14561KS42 D	AC350V	CECC4200	VDE
Alternate	Nippon(Marcon)	TNR14V561K	AC350V	CECC4200	VDE
Relay (K6)	Matsushita	ALD112	DC12V Temp 55°C or above	IEC 60730	VDE
Alternate	HongFa	JZC-43F/012HS	DC12V Temp 55°C or above	IEC 60730	VDE
Filter capacitor X2 (C34,C56)	Iskra	KNB1560 series	0,22µF/275VAC Temp 85°C or above	IEC 60384-14	VDE
Alternate	Tenta	MEX series	0,22µF/275VAC Temp 85°C or above	IEC 60384-14	VDE
Alternate	Iskra	KNB1530 series	0,22µF/275VAC Temp 85°C or above	IEC 60384-14	VDE
Alternate	Evov Rifa	PHE840M series	0,22µF/275VAC Temp 85°C or above	IEC 60384-14	VDE
Alternate	Okaya	RE series	0,22µF/275VAC Temp 85°C or above	IEC 60384-14	VDE
Filter capacitor Y2 (C46,C48)	Murata	KH series	2,2nF/250VAC Temp 85°C or above	IEC 60384-14	BS
Alternate	JYA-NAY CO.	JY series	2,2nF/250VAC Temp 85°C or above	IEC 60384-14	VDE
Alternate	TDK	CS series	2,2nF/250VAC Temp 85°C or above	IEC 60384-14	VDE
Filter capacitor Y2 (C31)	TDK	CS series	220pF/250VAC Temp 85°C or above	IEC 60384-14	VDE
Alternate	Murata	KH series	220pF/250VAC Temp 85°C or above	IEC 60384-14	BS
Alternate	JYA-NAY CO.	JY series	220pF/250VAC Temp 85°C or above	IEC 60384-14	VDE
Alternate	Iskra	KNB2520	220pF/250VAC Temp 85°C or above	IEC 60384-14	VDE
PCB	KINWONG	1.6mm FR4 double sided	94V0	--	UL

29.1	TABLE: MINIMUM CREEPAGE DISTANCES AND CLEARANCES							P
creepage (cr) and clearance (cl) distance (mm):	Class III appliances		Other appliances, working voltage:					Remark
			< 130 V		130-250 V		250-440 V	
	cr	cl	cr	cl	cr	cl	cr	cl
Between live parts of different potential								

IEC 60335-2-40									
Clause	Requirement - Test				Result - Remark				Verdict
-if protected against deposition of dirt	1,0	1,0	1,0	1,0	<u>3,1</u>	<u>3,1</u>	2,0	2,0	P
-if not protected against deposition of dirt	2,0	1,5	2,0	1,5	<u>4,0</u>	<u>4,0</u>	<u>4,0</u>	<u>3,0</u>	P
-if lacquered or enameled windings	1,0	1,0	1,5	1,5	<u>4,0</u>	<u>4,0</u>	3,0	3,0	P
- for positive temperature coefficient (PTC) resistors including their connecting wires, if protected against deposition of moisture or dirt	—	—	1,0	1,0	1,0	1,0	—	—	N
CI and Cr measured between: <ol style="list-style-type: none"> L and N on PCB; L and N on terminal block; Input of transformer; Winding of fan motor. The shortest value is considered.									
Between live parts and other metal parts over basic insulation:									
- if protected against deposition of dirt:									N
- if of ceramic material, pure mica and similar material	1,0	1,0	1,0	1,0	2,5	2,5	—	—	N
- if of other material	1,5	1,0	1,5	1,0	3,0	2,5	—	—	N
- if not protected against deposition of dirt	2,0	1,5	2,0	1,5	<u>4,0</u>	<u>4,0</u>	—	—	P
- if the live parts are lacquered or enamelled windings	1,0	1,0	1,5	1,5	<u>4,0</u>	<u>4,0</u>	—	—	P
- at the end of tubular sheathed-type heating elements	—	—	1,0	1,0	1,0	1,0	—	—	N
CI and Cr measured between: <ol style="list-style-type: none"> Live part on PCB and earthing metal part; Live part on terminal and earthing metal part; Winding of transformer/fan motor and enclosure/body; Live part on PCB and lower voltage parts; The shortest value is considered.									
Between live parts and other metal parts over reinforced insulation									
- if the live parts are lacquered or enamelled windings	—	—	6,0	6,0	6,0	6,0	—	—	N
- for other live parts	—	—	8,0	8,0	<u>10,0</u>	<u>10,0</u>	—	—	P
CI and Cr measured between: <ol style="list-style-type: none"> Test finger and internal live part through the gap of enclosure. The shortest value is considered.									
between metal parts separated by supplementary insulation	—	—	4,0	4,0	4,0	4,0	—	—	N

IEC 60335-2-40										
Clause	Requirement - Test						Result - Remark			Verdict

between live parts in recesses in the mounting face of the appliance and the surface to which it is fixed	2,0	2,0	6,0	6,0	6,0	6,0	—	—	N
---	-----	-----	-----	-----	-----	-----	---	---	---

30. 1	TABLE: material test				P
Part name/No.	Ball-pressure test		Glow-wire test		Tracking test (V)
	Temp.(°C)	Diameter (mm)	Temp. (°C)	Burning time(s)	
Transformer bobbin	125	1,8	850	0	175
PCB	125	0,8	850	0	175
Remark: the test was performed on all PCB materials and transformer bobbins and highest value was listed.					

--End of report--

Report Number: 12011466 003

Model: WNG 72 DCI



TÜV Rheinland Group



Picture 1

Remark: pictures 1-10 are for model WNG 72 DCI



Picture 2

Report Number: 12011466 003

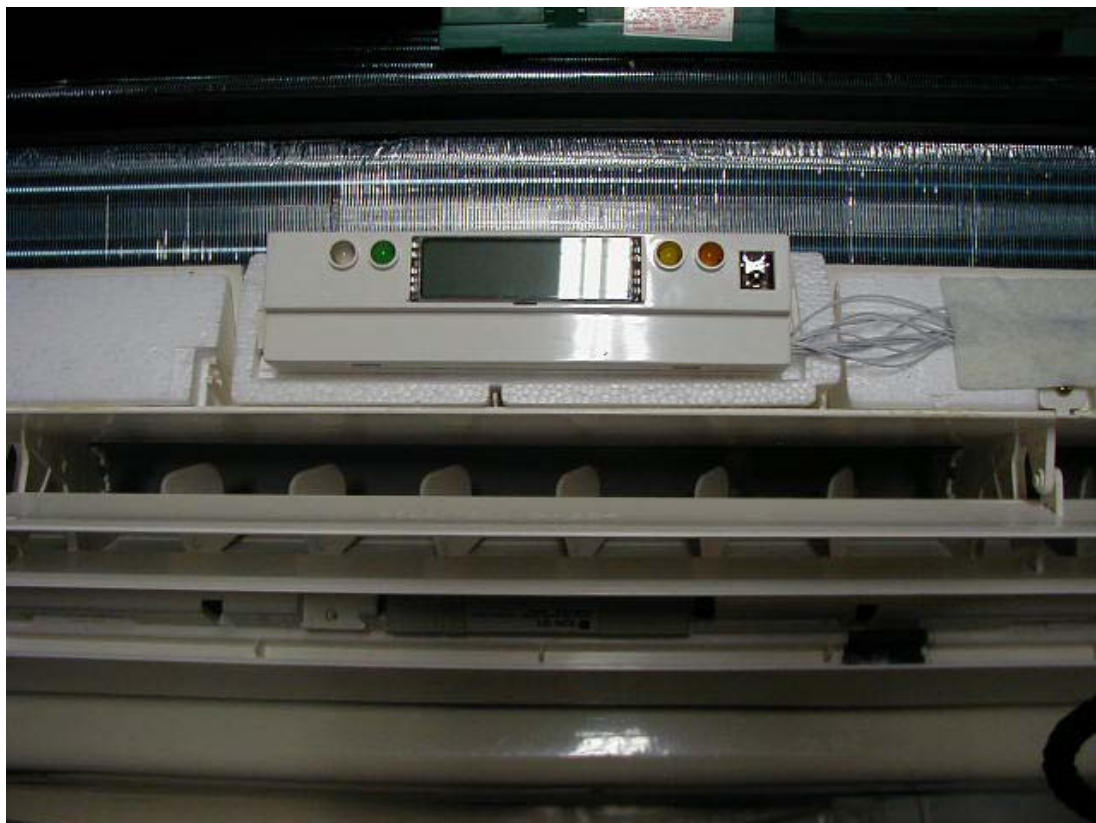
Model: WNG 72 DCI



TÜV Rheinland Group



Picture 3



Picture 4

Report Number: 12011466 003

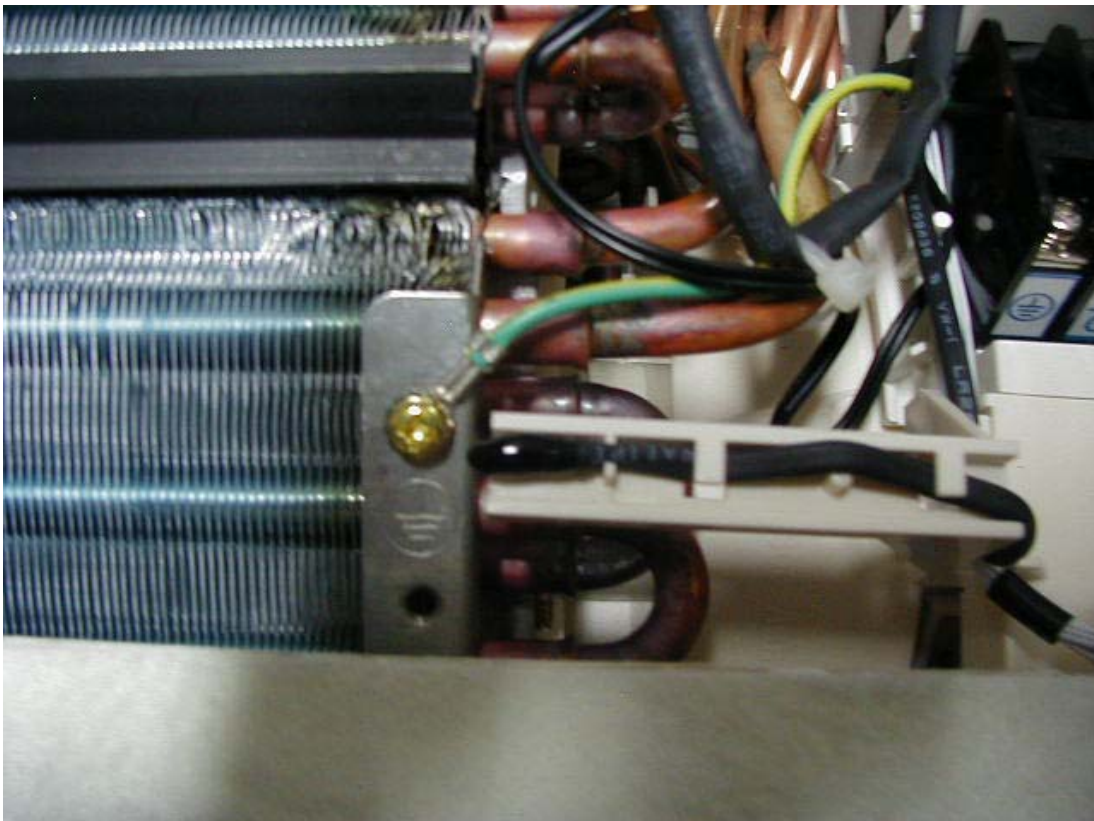
Model: WNG 72 DCI



TÜV Rheinland Group



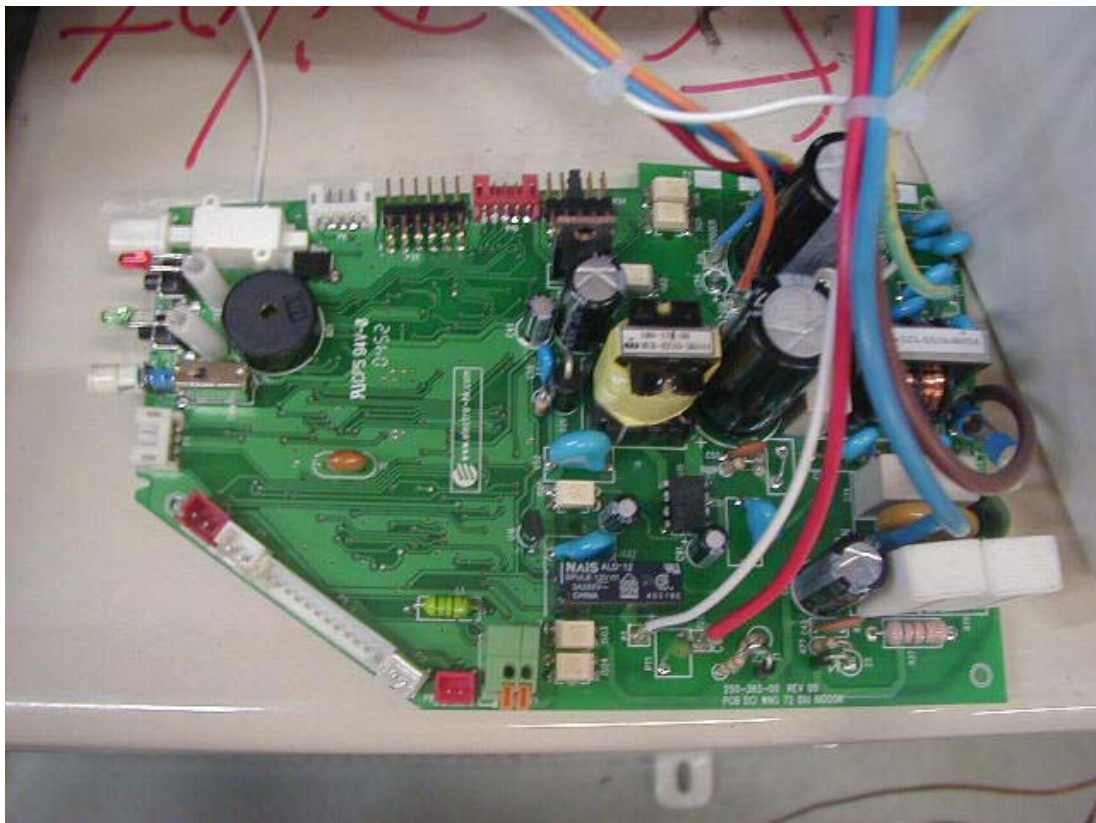
Picture 5



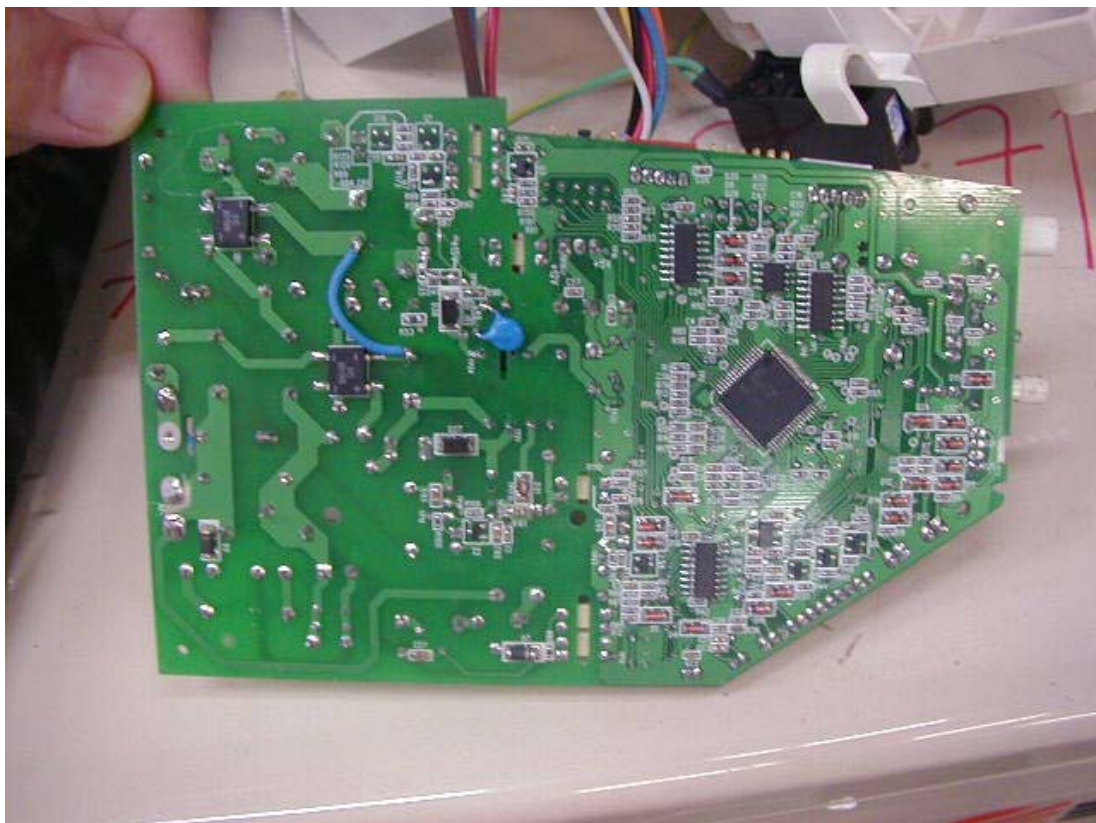
Picture 6

Report Number: 12011466 003

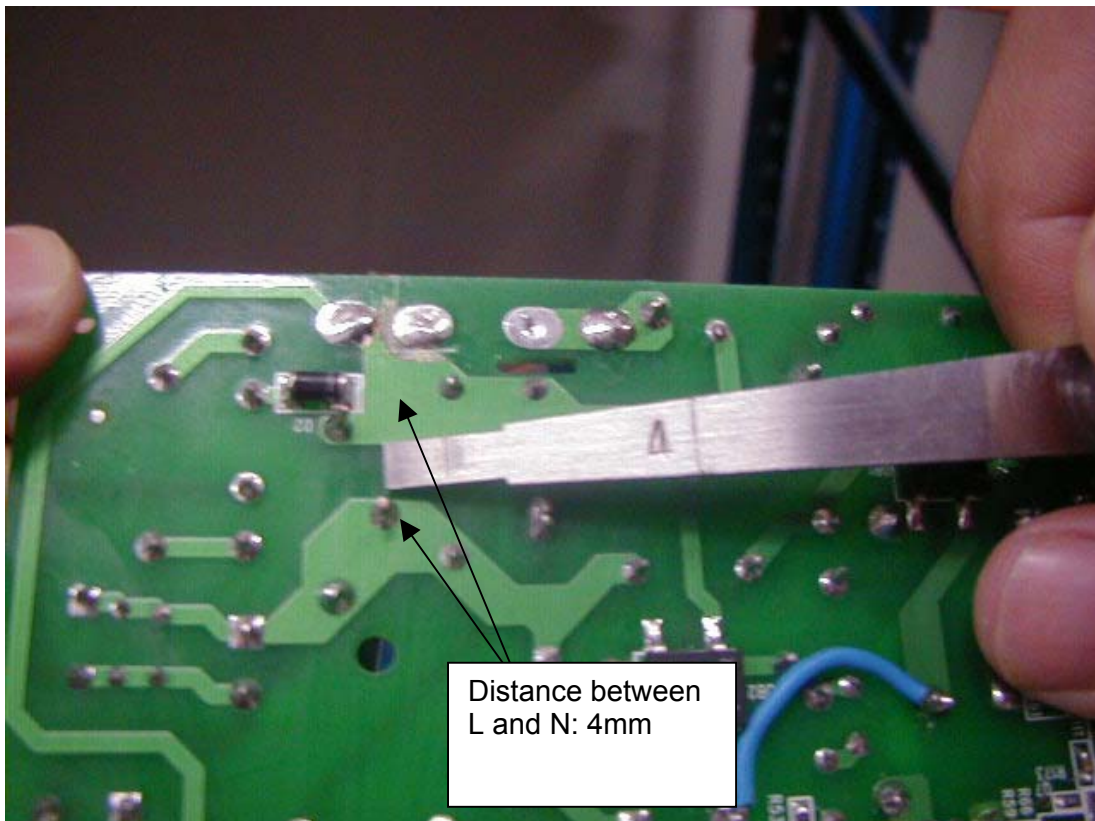
Model: WNG 72 DCI



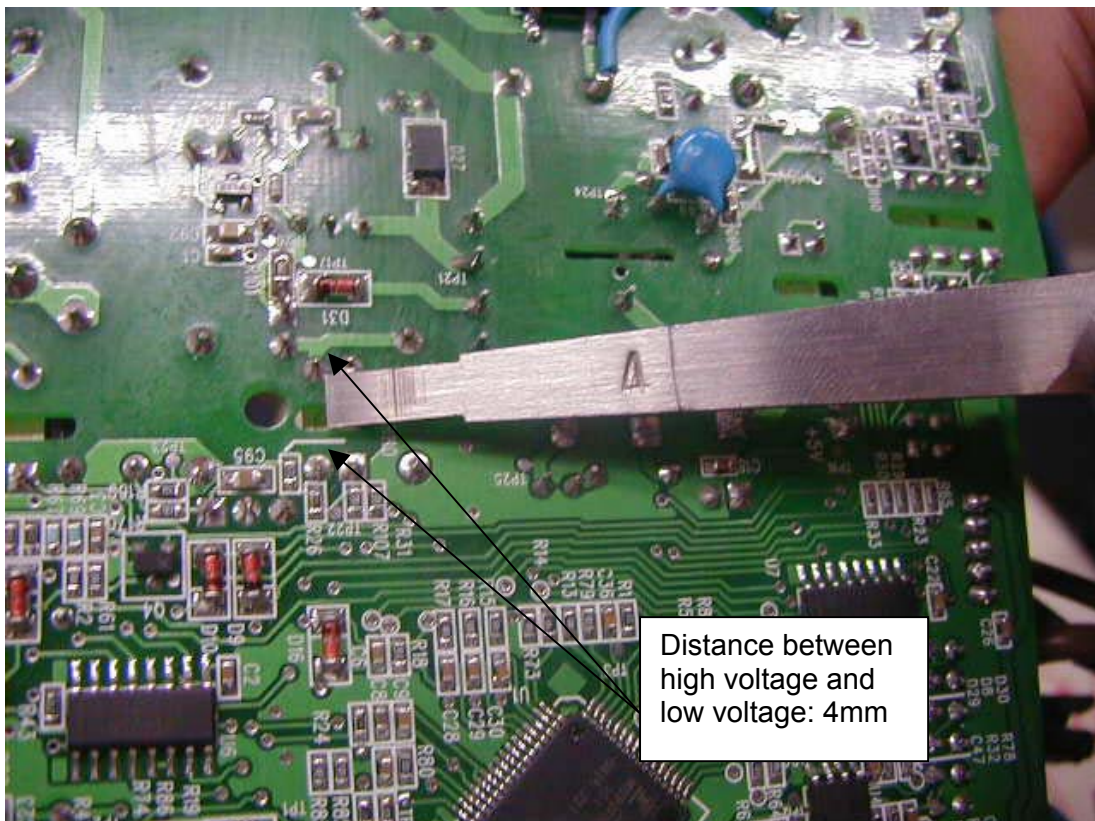
Picture 7



Picture 8



Picture 9



Picture 10

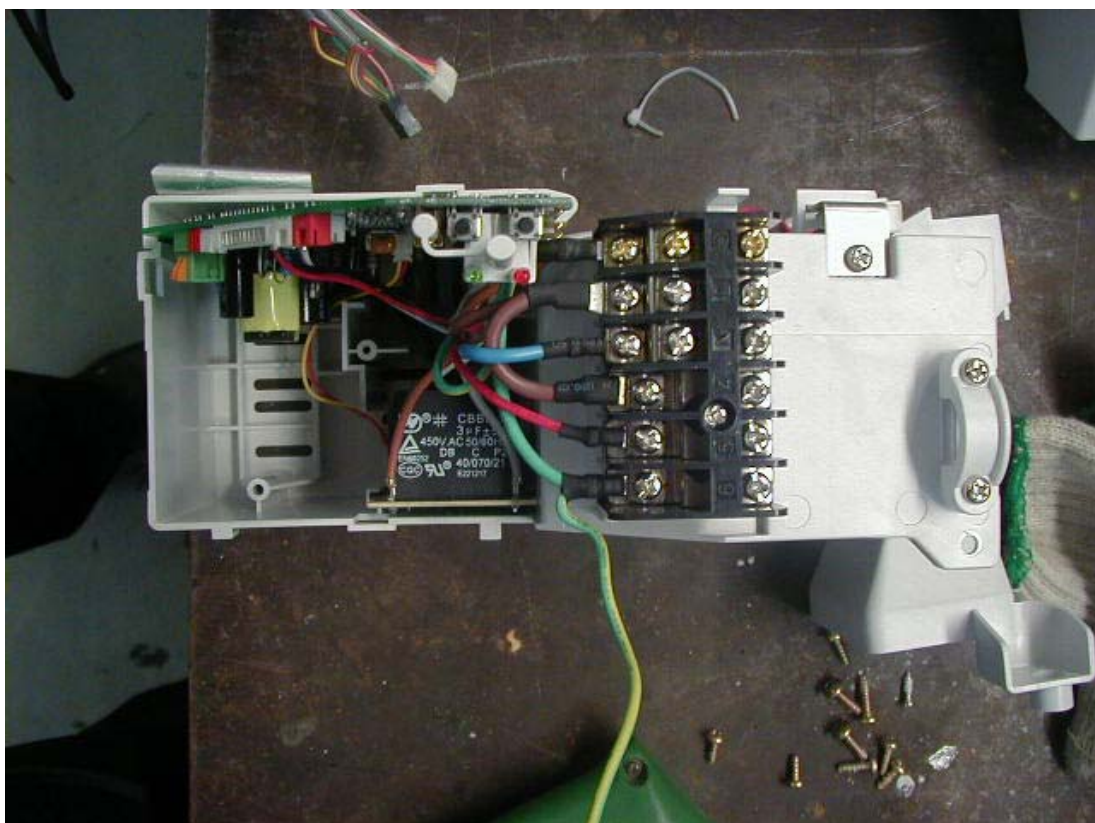
Report Number: 12011466 003

Model: WNG 72 DCI

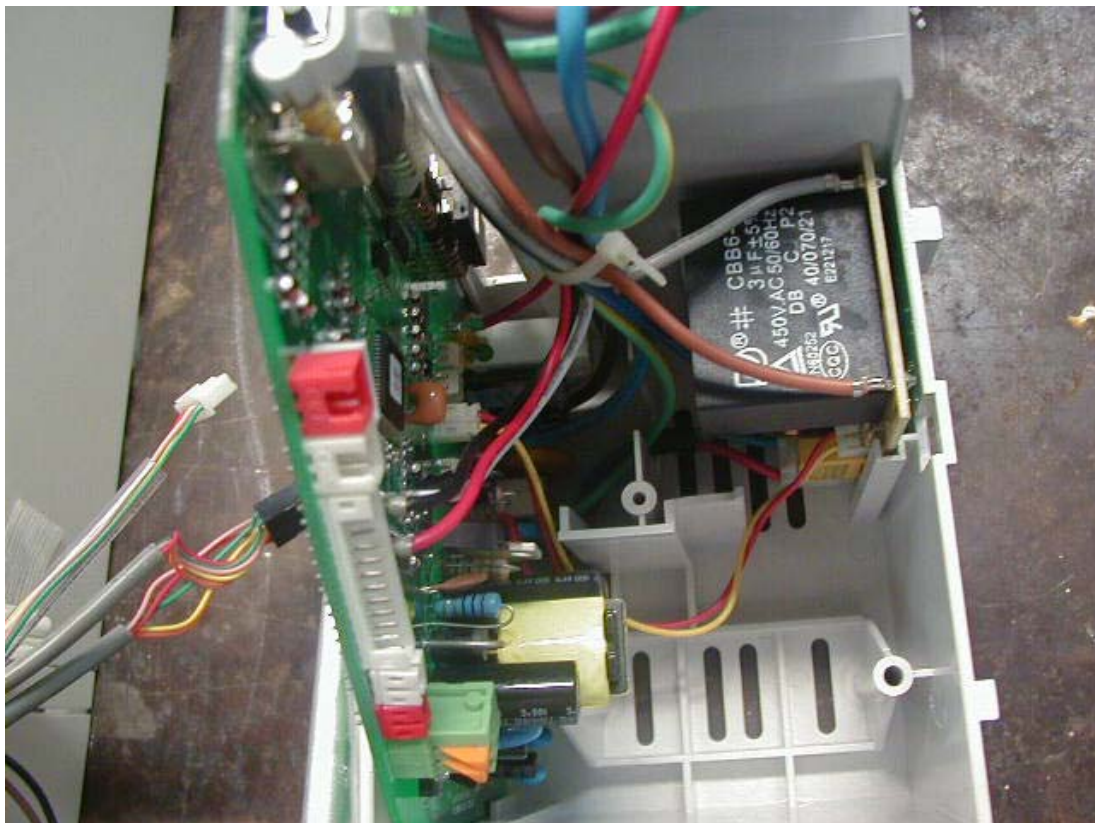


Picture 11

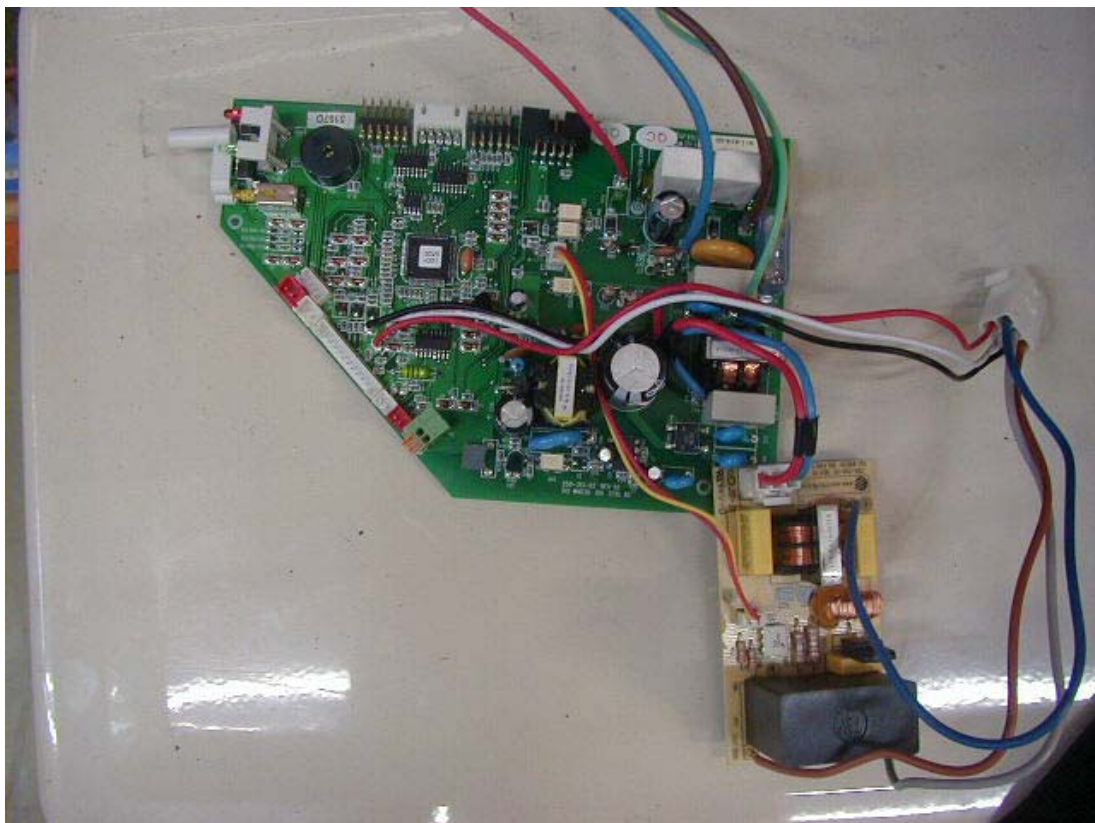
Remark: pictures 11-20 are for correction of WNG 80 DCI controller



Picture 12



Picture 13



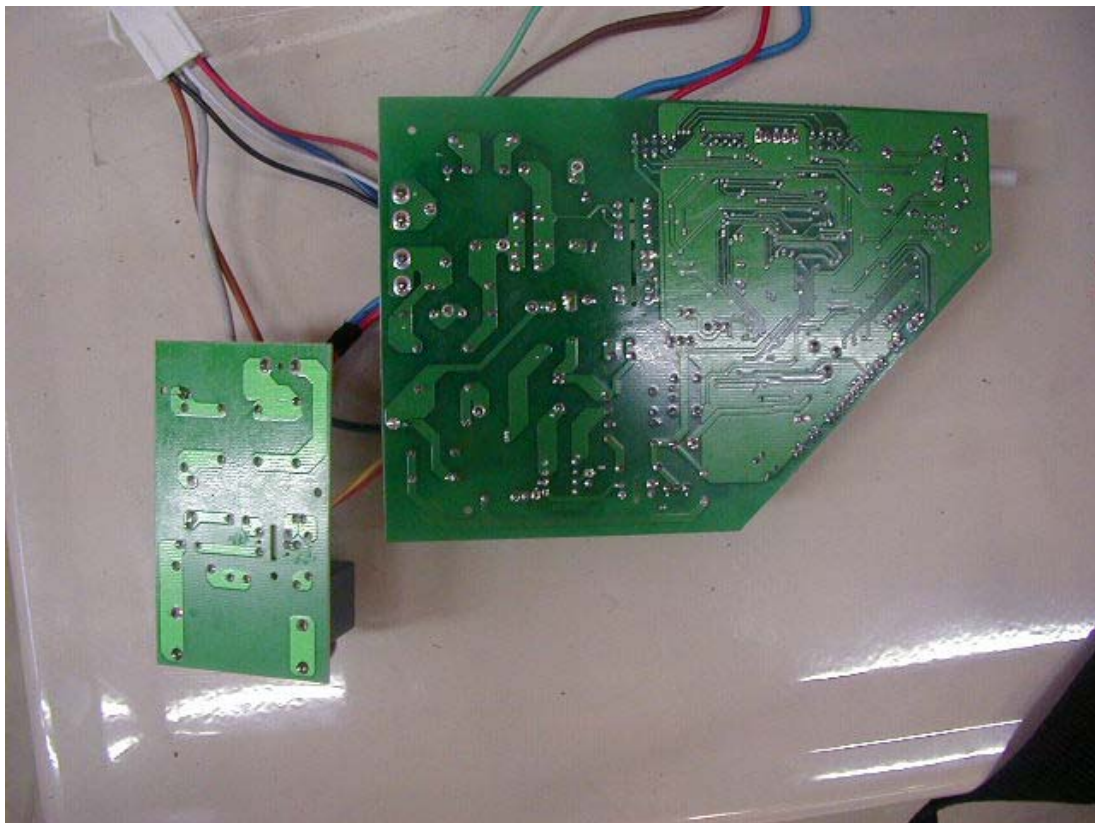
Picture 14

Report Number: 12011466 003

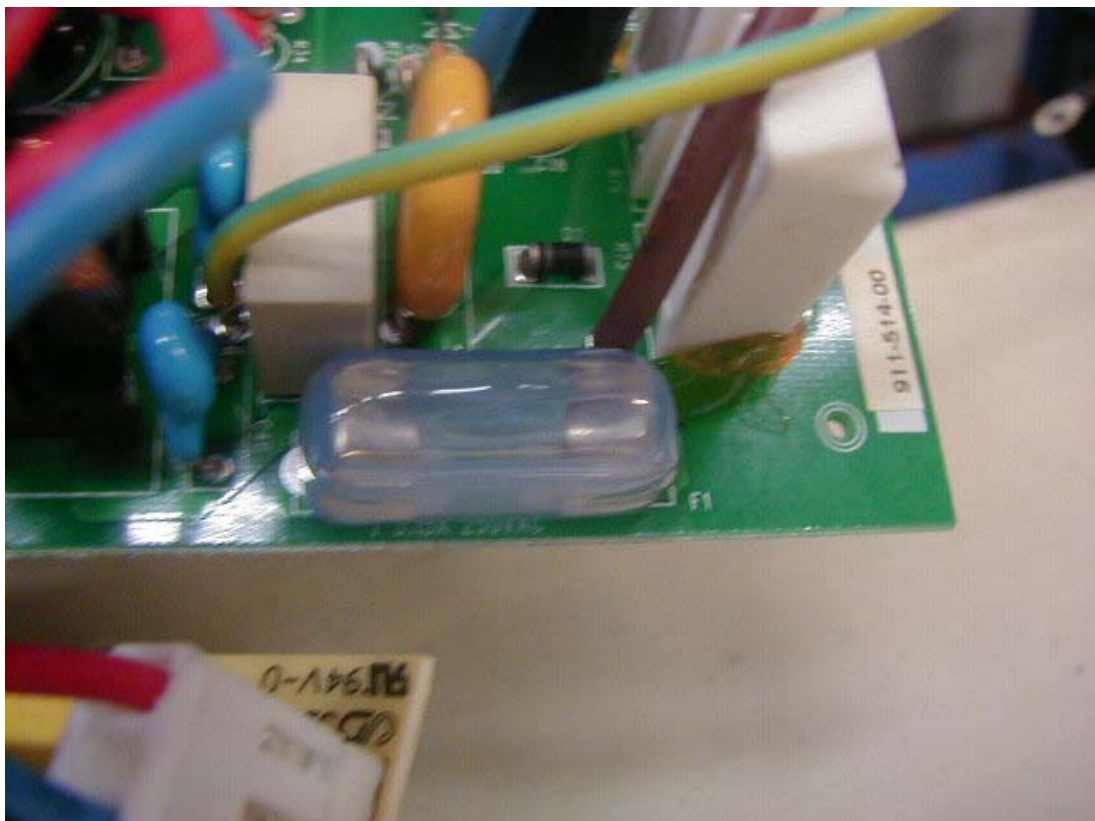
Model: WNG 72 DCI



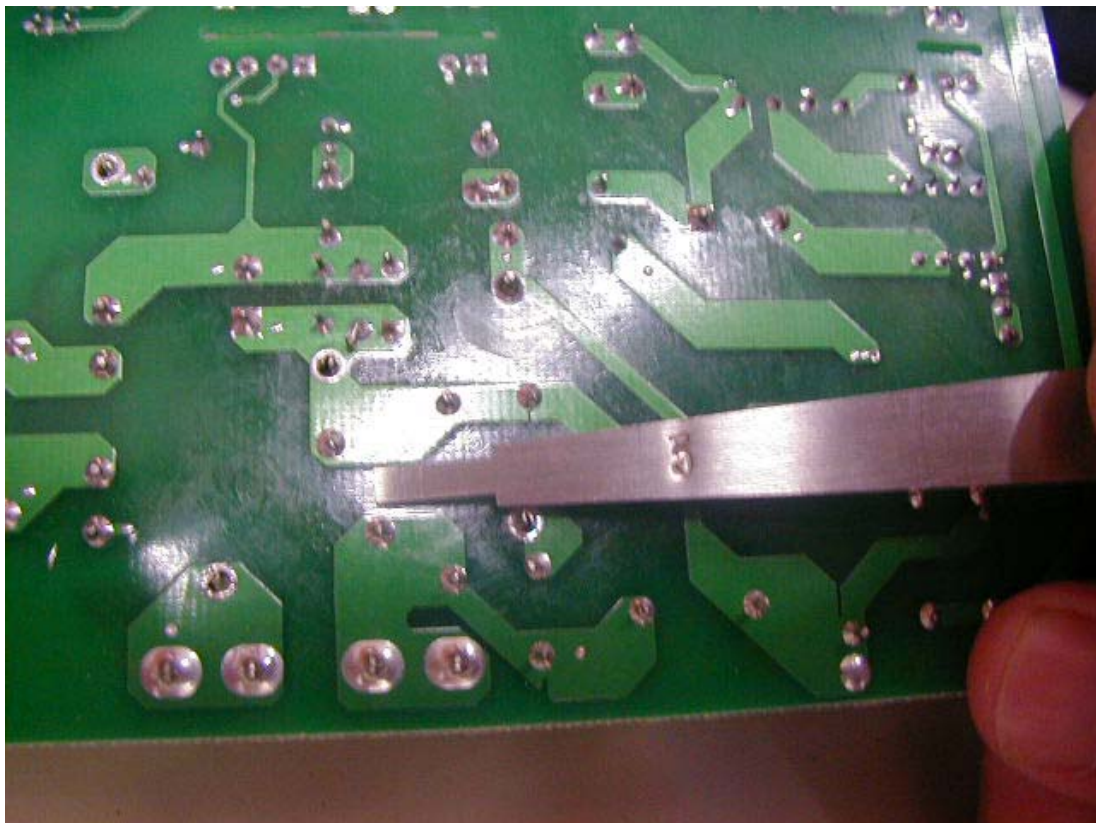
TÜV Rheinland Group



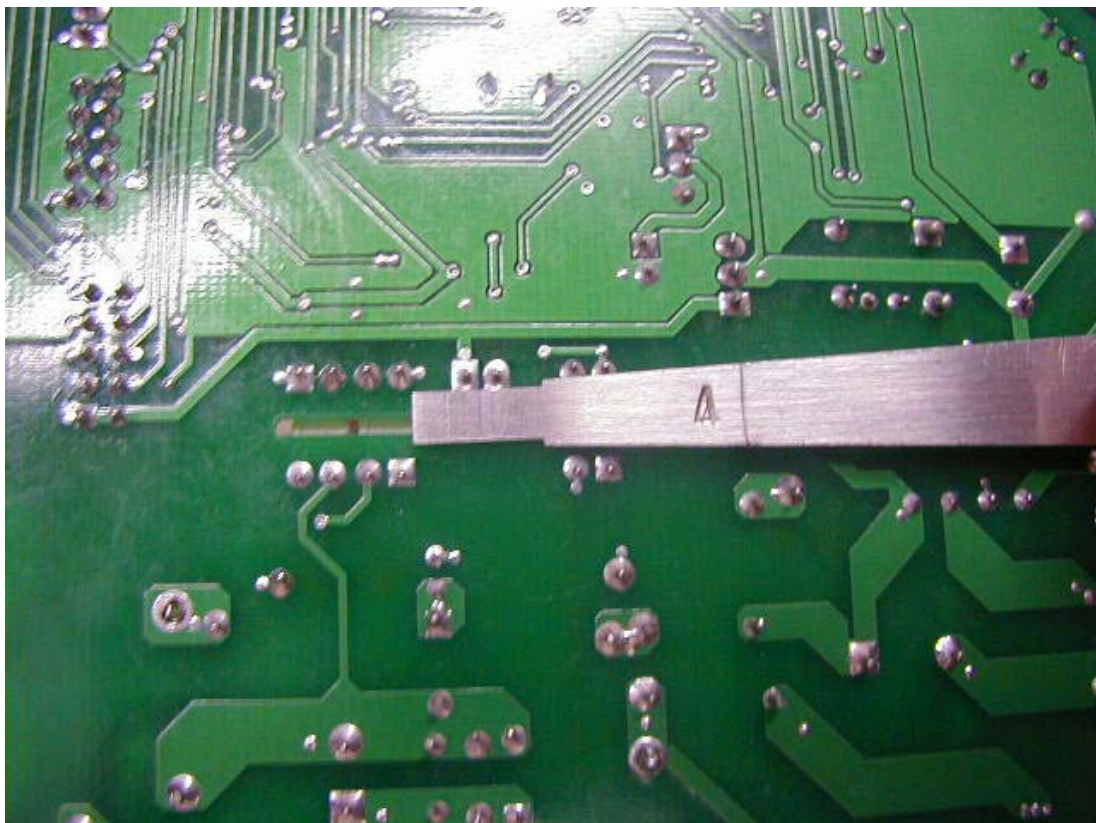
Picture 15



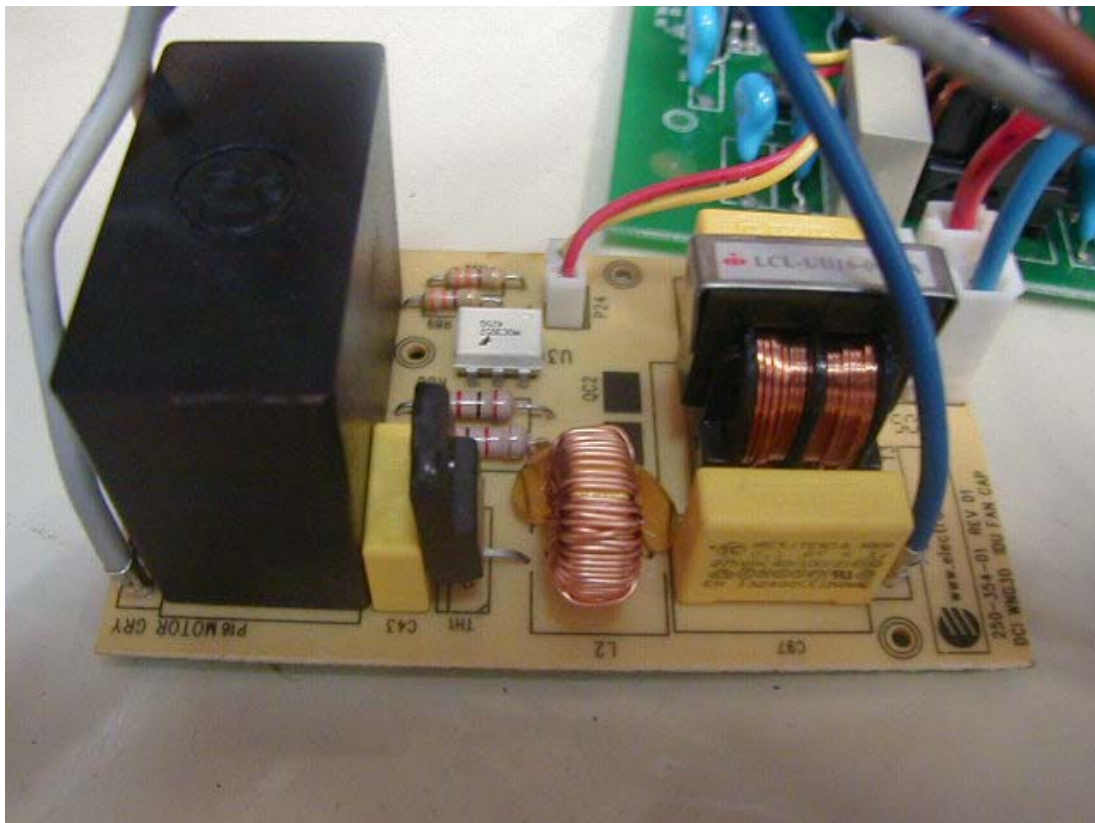
Picture 16



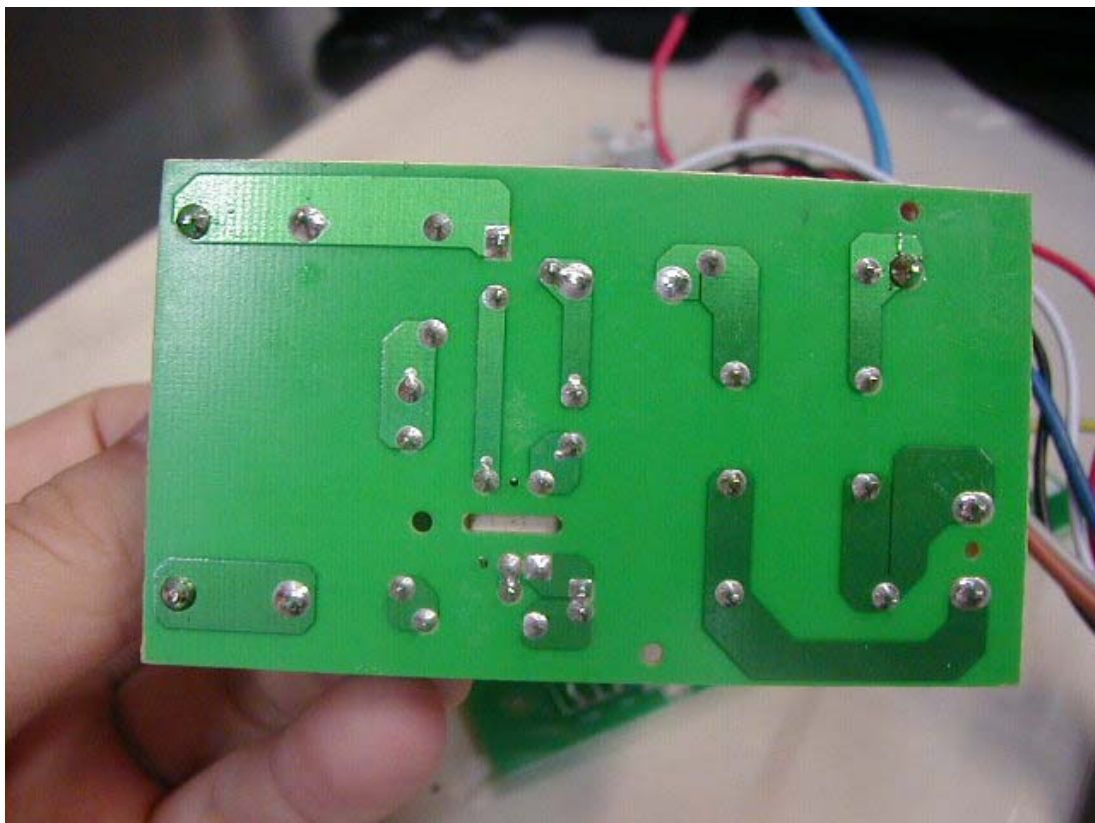
Picture 17



Picture 18



Picture 19



Picture 20