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22456

Zanussi Elettromeccanica

WANBAO Compressor Group

Phase-out project

(UNIDO PROJECT MP/CPR/96/185 – Activity Code 0742KD)

***- FINAL REPORT -
Supervision Report***

Date : November 8th, 2000

SUMMARY

- 1. Report about sampling / production**
- 2. Catalogue of the WANBAO – Compressor Group Co.Ltd. – R134a Range**
- 3. Certificate of quality and performance**
- 4. Design data sheet**
- 5. Great Wall acceptance certificate**
- 6. Certification institute approval**
- 7. Supervision of Start-up**

1. Report about sampling / production of new compressor models

1.1 Sampling

After the installation, testing and commissioning of all the new machines involved in the phase-out project, a sampling procedure of new compressor models (Ozone Free with refrigerant R134a) has been performed.

The contract product samples have been assembled in the Guangzhou Factory and then qualified by the Design Institute of Guangzhou and by other international Certification Institutes.

The producibility of all contractual models has been verified through this sampling activity.

The performances have been found in accordance with the design data sheet.

1.2 Massive Production

Following the market needs, during the past months following batches of contractual products have been produced:

<i>Compressor type (January – July 2000)</i>	<i>No. Pieces</i>
AQD 57	198 pcs.
AQD 66	1.323 pcs.
AQD 77	103 pcs.
AD 57	970 pcs.

In addition following models of compressors from the R134a range have been produced:

ADW 51	17.108 pcs.
ADW 66	34.000 pcs.
Grand total	53.702 pcs.

Acceptance Criteria

1. During the samples' production reinforced quality tests have been performed on all relevant characteristics (performance, life tests and safety tests).
2. During the massive production statistical quality control of all characteristics indicated in the technical documentation have been performed for each batch of the mass production.

Results

All the results have been found in accordance with the contractual specifications.

Conclusion

This document certifies that all the work and the activities performed under the Phase-out Contract as per UNIDO PROJECT (UNIDO PROJECT MP/CPR/96/185 – Activity Code 0742KD) up to the mass production have been finished successfully.

Zanussi Elettromeccanica



WANBAO Guangzhou Compressor Co. Ltd.

Project leader: ~~Xing Xiaolei~~
ZouJiantu

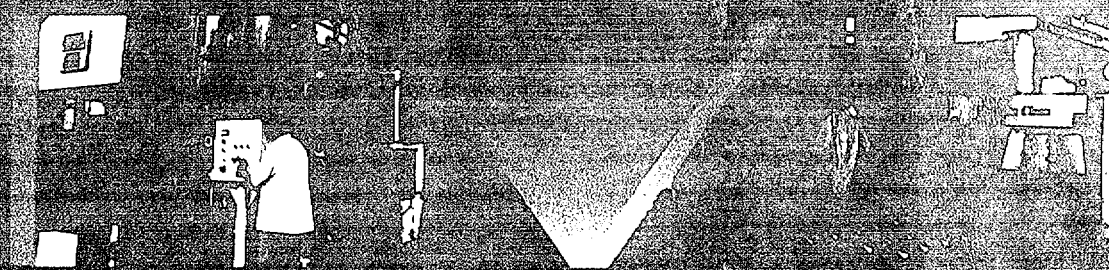


**2. Catalogue of the WANBAO – Refrigeration Holding Co.
Ltd. – R134a Range –**

Guangzhou, November 8th, 2000

华光牌电冰箱压缩机

COMPRESSOR FOR REFRIGERATOR



广州冷机股份有限公司
GUANGZHOU REFRIGERATION CO. LTD.

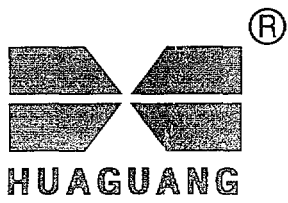
ADW 系列压缩机技术性能 ADW Series Compressor Technical Data (R134a)

产品型号 Product Specifications		ADW51	ADW57	ADW66	ADW72	ADW86	ADW95
气缸工作容积 Displacement	cm ³	5.10	5.65	6.55	7.23	8.58	5.65
制冷量 Capacity	W	136	161	170	190	220	195
输入功率 Input power	不带电容 Without Capacitor	113	125	133	146	169	
	带电容 With Capacitor	105	119	128	140	163	141
工作电流 Operating Current	不带电容 Without Capacitor	0.80	0.87	1.00	1.03	1.10	
	带电容 With Capacitor	0.62	0.66	0.73	0.75	0.79	1.40
性能系数 C.O.P	不带电容 Without Capacitor	1.20	1.29	1.28	1.30	1.30	
	带电容 With Capacitor	1.30	1.35	1.33	1.35	1.35	1.38
噪声 Noise Lw	dB(A)	< 40	< 41	< 41	< 42	< 42	< 42
振动加速度 Vibration Acc.	m/s ²	< 0.7					
工作电压范围 Voltage	V	165~253 (With Capacitor) ; 176~242 (Without Capacitor)					97~127
冷却方式 Cooling		自然冷却 ST					
润滑油量 Lube Vol.	ml	250 ± 5			310 ± 5		250 ± 5
重量 (含油) Weight (with oil)	kg	8.8	9.0	9.7	10.4	10.5	9.0
电机型式 Motor Type		不带电容 Without Capacitor—— PTC 启动器电阻分相启动 RSIR(PTC) 带电容 With Capacitor—— PTC 启动器电阻分相启动, 电容运行 RSCR(PTC) Capacitor running					RSOR
制冷剂 Refrigerant		R134a					
制冷剂控制方式 Refrigerant Control		毛细管 Capillary					
润滑油 Lubricant		酯类油 Polyester oil					
电源 Power Source		~220V 50Hz					~115V 60Hz

AQAW 系列压缩机技术性能 AQAW Series Compressor Technical Data (R134a)

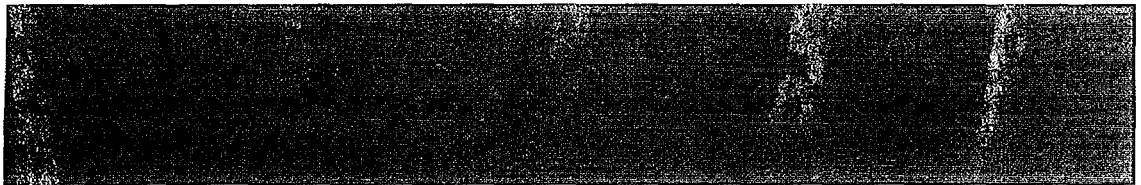
产品型号 Product Specifications		AQAW51	AQAW57	AQAW66	AQAW77
气缸工作容积 Displacement	cm ³	5.10	5.65	6.55	7.69
制冷量 Capacity	W	123	139	156	161
输入功率 Input power	W	119	118	130	156
工作电流 Operating Current	A	0.82	0.84	0.91	1.0
性能系数 C.O.P	W/W	1.03	1.18	1.20	1.18
噪声 Noise Lw	dB(A)	< 40	< 41	< 41	42
振动加速度 Vibration Acc.	m/s ²	< 0.7			
工作电压范围 Voltage	V	165~253			
冷却方式 Cooling		自然冷却 ST			
润滑油量 Lube Vol.	ml	250 ± 5			310 ± 5
重量 (含油) Weight (with oil)	kg	8.8	9.5	10.0	10.2
电机型式 Motor Type		PTC 启动器电阻分相启动 RSIR(PTC)			
制冷剂 Refrigerant		R134a			
制冷剂控制方式 Refrigerant Control		毛细管 Capillary			
润滑油 Lubricant		酯类油 Polyester oil			
电源 Power Source		~220V 50Hz			

AQAW、ADW系列 PTC 起动器、电机过载保护器及电容器性能
 AQAW、ADW Series PTC Starter、Overload Protector & Capacitor Data (R134a)

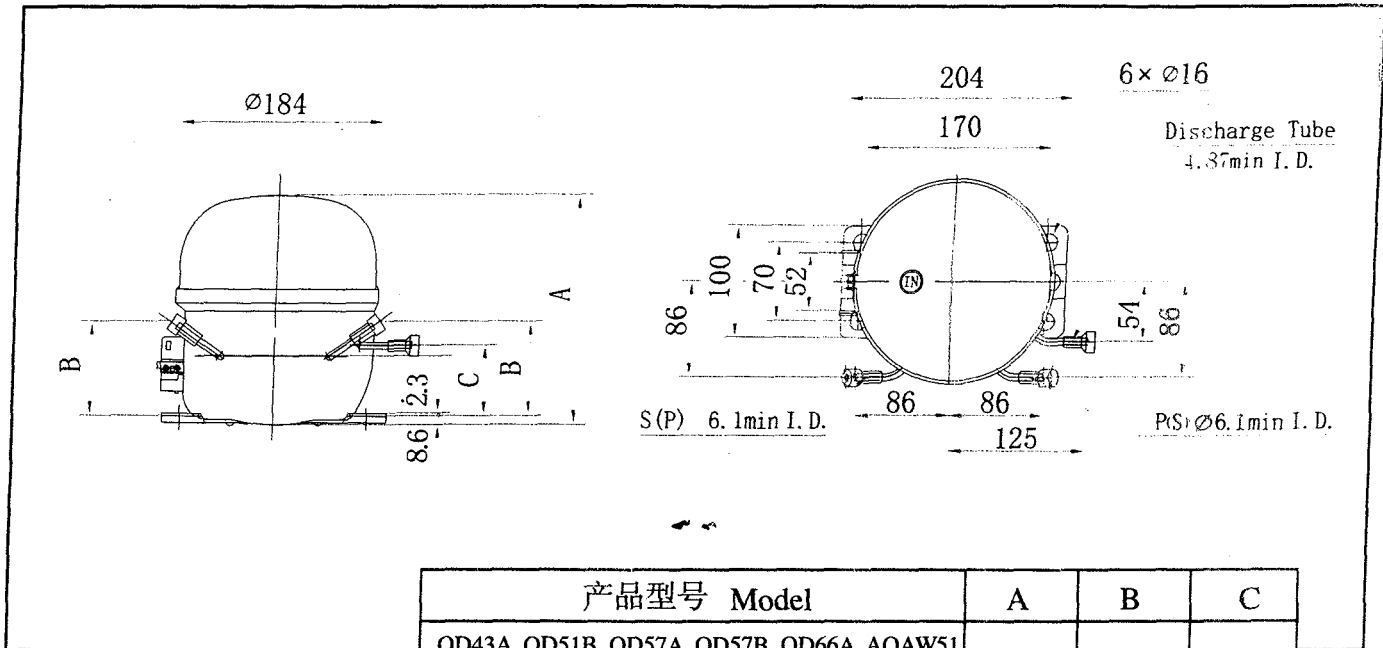


产品型号 Product Specifications		AQAW51 ADW51 ADW57	AQAW57 AQAW66	AQAW77 ADW66 ADW72 ADW86	ADAW57U6		
PTC 起动器	代号 Code	JTX - 520F11 (With Capacitor)		JTX - 520F (Without Capacitor)			
	动作时间 Opening Time s	0.45 ~ 1.35		1.3 ~ 3.0			
PTC Starter	恢复时间 Reset Time s	< 65		< 65			
	消耗功率 Power Consumption W	< 3.5		< 3.3			
过 载 保 护 器	代号 Code	JUX-17GDF	JUX-20GCF	JUX-26GCF	JUX-31GCF		
	动作温度 °C Opening Temp. (temperature)	120 ± 5	120 ± 5	120 ± 5	120 ± 5		
	复位温度 Reset Temp. °C	61 ± 11	61 ± 8	61 ± 8	61 ± 8		
	最小动作电流 A Ultimate Trip Current (70 °C)	1.75	2.0	2.6	3.1		
	Overload Protector	初动作 First Cycle Trip	电流 Current A	5.0	5.8	7.0	9.4
		动作时间 Trip Time	S	11 ± 5		11 ± 5	
	Protector	25 °C 复位时间 Reset Time	S	3 ~ 60		3 ~ 60	
最大允许电流 Max. Allowed Current		A	9.5	11.0	17.0	23	
运行 电容器 Running Capacitor	代号 Code	CBB61			CBB61		
	电容量 Capacitance μF	4, 偏差 ± 5%			12, 偏差 ± 5%		
	额定电压 Rated Voltage V	400			180		

试验条件 Test Conditions

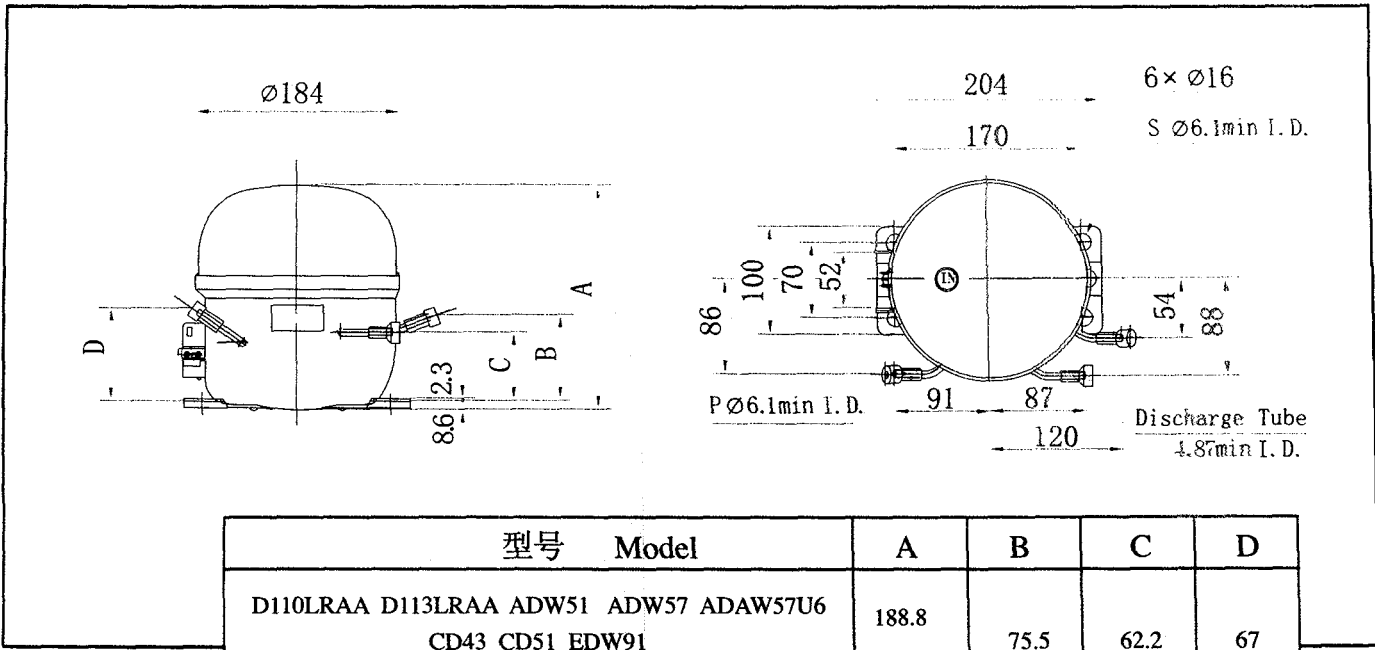


Q系列 CQ系列 AQAW系列 压缩机外形尺寸图
 Q Series CQ Series AQAW Series Configurations Compressor



产品型号 Model	A	B	C
QD43A QD51B QD57A QD57B QD66A AQAW51 AQAW57 CQ43L CQ51 CQ57L CQ57 CQ66L	188.8	80	62.2
QD66B AQAW66 CQ66	199.6	80	62.2
QD77A QD77B AQAW77 CQ77L CQ77	214.6	86	68.2

D系列 CD系列 ADW系列 EDW系列 压缩机外形尺寸图
 D Series CD Series ADW Series EDW Series Configurations Compressor



型号 Model	A	B	C	D
D110LRAA D113LRAA ADW51 ADW57 ADAW57U6 CD43 CD51 EDW91	188.8	75.5	62.2	67
D115LRAA EDW110	199.6			
D116LRAA ADW66 CD57	205.6	81.7	68.2	73
D119LRAA ADW72 ADW86 CD66 CD77 EDW125	214.6	81.7	68.2	73

Certificate of quality and performance

After the testing and commissioning of all the new machines involved in the phase-out project the new compressors models properly designed for the R134a refrigerant have been produced and assembled in the WANBAO Guangzhou Compressor Factory so as to prove their quality and performances in compliance with the contractual clauses.

The following six contractual models designed for the R12 refrigerant: QD57B , QD66B , QB77B, D113L , D116L , D119L have been replaced by the models AQD57 , AQD66 , AQB77, AD57 , AD72 , AD86 with equivalent characteristics of quality and safety and with upgraded performances as per paragraph 3.2.5 of the Terms of Reference.

From the real production batches, at least 12 compressors for each model have been tested according to the Chinese actual rules. All the results have been found in accordance with the design specifications and with the testing and Design Institute of GUANGZHOU.

This document certifies that the compressors produced in the WANBAO Guangzhou Compressor Factory fulfil completely the requirements of the Phase-out Contract - UNIDO PROJECT MP/CPR/96/185 – Activity Code 0742KD

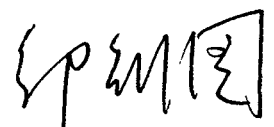
Zanussi Elettromeccanica



WANBAO Compressor Group Co. Ltd.

Project leader: ~~Xing Xiaotai~~

Zou Jiantu



4. DESIGN DATA SHEET

Parameter		Compressor			Model		
		AQD57	AQD66	AQD77	AD57	AD72	AD86
Displacement	cm ³	5,65	6,55	7,69	5,65	7,23	8,58
Capacity	W	139	161	193	146	198	226
Input Power	W	125	135	167	118	151	175
Refrigerant		R134a	R134a	R134a	R134a	R134a	R134a
COP	W/W	1,11	1,19	1,16	1,24	1,31	1,29
Oil Charge	ml	250	250	310	250	310	310
Cooling Method		ST	ST	ST,OC	ST	ST,OC	ST,OC
Noise	dB	≤ 39	≤ 39	≤ 41	≤ 41	≤ 41	≤ 42
Weight (with oil)	kg	9,5	10,0	10,2	9,3	10,4	10,5

Capacity, Input Power, COP, and Running Current measured at the following conditions:

Evaporating temperature: -23,3 °C

Condensing temperature: 54,5°C

Ambient temperature: 32,2 °C

Liquid temperature: 32,2 °C

Return gas temperature: 32,2 °C

Oil type ISO 22 (ICI RL22H)

Working voltage: 220V +10/-15% - Start voltage: 165 Volts.

Performance with running capacitor.

5. "GREAT WALL" ACCEPTANCE CERTIFICATE

for compressor models

- **ADW66, ADW72, ADW86**
- **AQAW66, AQAW77, AQAW91**
- **AQAW57, AQAW51**
- **ADW51, ADW57**



电工产品认证合格证书(正本)

编号: CH0043135-2000

申请人: 广州冷机股份有限公司

制造厂名称及所在地:

广州冷机股份有限公司, 广州市白云区人和镇

产品名称、规格、型号: 电动机-压缩机

AQAW66 AQAW77 AQAW91

产品安全认证检测依据的标准:

GB4706.1-92 GB4706.17-1996

上述产品符合电工产品认证规则 and 程序的要求

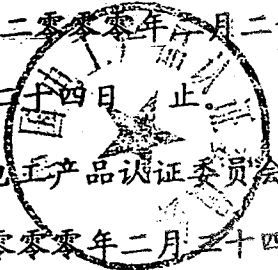
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证书有效期: 自 二零零零年二月二十四日 起

至 二零零四年二月二十四日 止

中国电工产品认证委员会

二零零零年二月二十四日



CERTIFICATE OF CONFORMITY FOR ELECTRICAL EQUIPMENT (ORIGINAL)

NO: CH0043135-2000

APPLICANT GUANGZHOU COOLING MACHINE CO., LTD

NAME AND ADDRESS OF THE MANUFACTURER:

GUANGZHOU COOLING MACHINE CO., LTD

NAME, MODEL AND SPECIFICATION:

MOTOR-COMPRESSOR

AQAW66 AQAW77 AQAW91

THE STANDARDS FOR THE PRODUCTS TO BE TESTED:

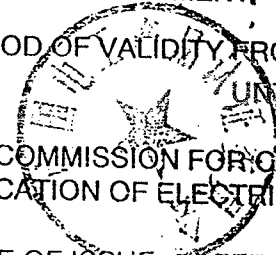
GB4706.1-92 GB4706.17-1996

THIS IS TO CERTIFY THAT THE ABOVE MENTIONED
PRODUCTS HAVE QUALIFIED FOR THE REQUIREMENTS
ABOUT CERTIFICATION RULES AND PROCEDURES FOR
THE ELECTRICAL EQUIPMENT.

PERIOD OF VALIDITY FROM 24 FEB 2000
UNTIL 24 FEB 2004

CHINA COMMISSION FOR CONFORMITY
CERTIFICATION OF ELECTRICAL EQUIPMENT

DATE OF ISSUE: 24 FEB 2000





电工产品认证合格证书(正本)

编号: CH0043134-2000

申请人: 广州冷机股份有限公司

制造厂名称及所在地:

广州冷机股份有限公司, 广州市白云区人和镇

产品名称、规格、型号: 电动机-压缩机

AQAW57 AQAW51

产品安全认证检测依据的标准:

GB4706.1-92 GB4706.17-1996

上述产品符合电工产品认证规则 and 程序的要求

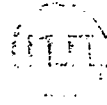
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GUANGZHOU COOLING MACHINE CO., LTD

NAME, MODEL AND SPECIFICATION:

MOTOR-COMPRESSOR

AQAW57 AQAW51

THE STANDARDS FOR THE PRODUCTS TO BE TESTED:

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CERTIFICATION OF ELECTRICAL EQUIPMENT

DATE OF ISSUE: 24 FEB 2000



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编号: CH0043132-2000

申请人: 广州冷机股份有限公司

制造厂名称及所在地:

广州冷机股份有限公司、广州市白云区人和镇

产品名称、规格、型号: 电动机-压缩机

ADW51 ADW57

产品安全认证检测依据的标准:

GB4706.1-92 GB4706.17-1996

上述产品符合电工产品认证规则和要求

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GUANGZHOU COOLING MACHINE CO., LTD

NAME, MODEL AND SPECIFICATION:

MOTOR - COMPRESSOR

ADW51 ADW57

THE STANDARDS FOR THE PRODUCTS TO BE TESTED:

GB4706.1-92 GB4706.17-1996

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制造厂名称及所在地:

广州冷机股份有限公司, 广州市白云区人和镇

产品名称、规格、型号: 电动机-压缩机

ADW66 ADW72 ADW86

产品安全认证检测依据的标准:

GB4705.1-92 GB4706.17-1996

上述产品符合电工产品认证规则和要求

特发此证。

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NAME AND ADDRESS OF THE MANUFACTURER:

GUANGZHOU COOLING MACHINE CO., LTD

NAME, MODEL AND SPECIFICATION:

MOTOR--COMPRESSOR

ADW66 ADW72 ADW86

THE STANDARDS FOR THE PRODUCTS TO BE TESTED:

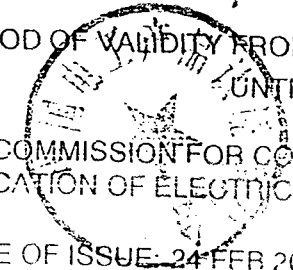
GB4705.1-92 GB4706.17-1996

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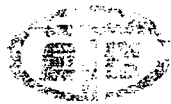
DATE OF ISSUE: 24 FEB 2000



6. Certification INSTITUTE approval

for compressor models

- **AQD77**
- **AD86**



共 2 页

No. WYB99-033

检 验 报 告

TEST REPORT

产品名称: 冰箱压缩机
NAME OF SAMPLE

受验单位: 广州冷机股份有限公司
CLIENT

检验类别: 委托检验
CLASSIFICATION OF TEST



国家家用电器质量监督检验测试中心
China National Center For Quality Supervision And Test Of Electrical Appliances



检验报告

TEST REPORT

No.: WYB99-038

共29页第02页

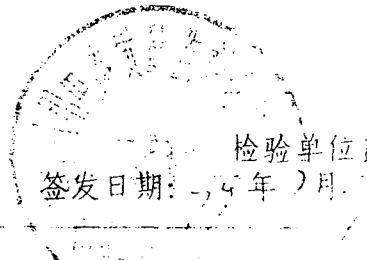
产品名称	冰箱压缩机	商 标	HUAGUANG
型号规格	AQD77	检验类别	委托检验
生产单位	广州冷机股份有限公司	委托单位	广州冷机股份有限公司
地 址	广州市白云区人和镇	地 址	广州市白云区人和镇
样品数量	共8台, 其中2台备用	抽样人员	
样品识别	18-8-8	抽样地点	
接样方式	送样	抽样方式	
样品等级		抽样日期	
接样日期	1999. 3. 15	完成日期	1999. 7. 1
检验依据	GB4706. 1-92 GB4706. 17-1996 参照GB/T 9098-1996	检验项目	30项

检
验
结
论

根据委托方的要求, 依据GB4706. 1-92、GB4706. 17-1996标准和参照GB/T 9098-1996标准, 对冰箱压缩机产品进行检验, 所检项目符合GB4706. 1-92、GB4706. 17-1996和GB/T 9098-1996标准要求。

检验结论: 合格。

CONCLUSION OF TEST: QUALIFIED



批 准:
批准人职务:
签 名:

核:
审核人职务:
签 名:

主 检:
签 名:



检验报告

TEST REPORT

No.: WYB99-037

第29号第02号

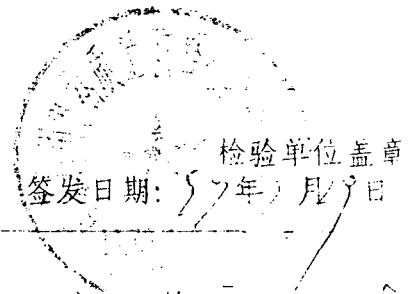
产品名称	冰箱压缩机	商 标	HUAGUANG
型号规格	AD86	检验类别	委托检验
生产单位	广州冷机股份有限公司	委托单位	广州冷机股份有限公司
地 址	广州市白云区人和镇	地 址	广州市白云区人和镇
样品数量	共8台, 其中2台备用	抽样人员	
样品识别	18~8 8	抽样地点	
接样方式	送样	抽样方式	
样品等级		抽样日期	
接样日期	1999. 3. 15	完成日期	1999. 7. 1
检验依据	GB4706. 1-92 GB4706. 17-1996 参照GB/T 9098-1996	检验项目	30项

检
验
结
论

根据委托方的要求, 依据GB4706. 1-92、GB4706. 17-1996标准和参照GB/T 9098-1996标准, 对冰箱压缩机产品进行检验, 所检项目符合GB4706. 1-92、GB4706. 17-1996和GB/T 9098-1996标准要求。

检验结论: 合格。

CONCLUSION OF TEST: QUALIFIED



检验单位盖章
签发日期: 99年7月9日

批 准:
批准人职务:
签 名:

审 核:
审核人职务:
签 名:

主 检:
签 名:

7. SUPERVISION REPORT

7.1 Working Program

7.2 Report Summary

7.3 Score / Corrective Actions

November 8th, 2000

7.1 WORKING PROGRAM

QUALITY RELEASE OF THE WANBAO FACTORY
(Wanbao compressor group in Guangzhou)

List of activity that should be made to release the production in Wanbao:

<p>RESIDUAL (During the audit ECC will check the washing process and will verify the procedure to measure the residual, if these are in line with ECC-CQ procedure)</p>	<ul style="list-style-type: none"> • Method to measure the quantity of the residual in compressor component ECC/CQ 96025 • Method to measure the quantity of residual in finished compressors ECC/CQ 97030 • Compressor component residual limits ECC/CQ033 • SPS application in the release of the Washing machine • FTIR analysis
<p>OIL (oil used in the compressor)</p>	<ul style="list-style-type: none"> • Method to measure the humidity in the oil before fill the compressors (SPS analysis) • Quantity of the water inside the compressor before oil charge (SPS analysis)
<p>RELIABILITY TEST</p>	<ul style="list-style-type: none"> • Wear test • On/off test • High temperature test • Capillary flow test (ECC/CQ97031)
<p>NOISE / VIBRATION TEST</p>	<ul style="list-style-type: none"> • According GB9098 • Repeatability study
<p>CALORIMETER / STARTABILITY</p>	<ul style="list-style-type: none"> • According GB9098 • Repeatability study
<p>FINAL TEST</p>	<ul style="list-style-type: none"> • Final test on open compressor • Final test on close compressor • Final test stator line • Final test rotor line

	<ul style="list-style-type: none"> • Bench Motor Test (Torque)
SPS APPLICATION	<ul style="list-style-type: none"> • X-R Chart in process line • CPK Analysis process
INCOMING INSPECTION	<ul style="list-style-type: none"> • Copper wire • Oil • Row materials • Plastic materials • List of suppliers • Situation of the audit to the suppliers
CUSTOMER ASSISTANCE	<ul style="list-style-type: none"> • Line reject • Field reject • Complain
INTERNAL REJECT	<ul style="list-style-type: none"> • Internal data base to collect the figure about the compressors rejected at the final test
INTERNAL REPORT	<ul style="list-style-type: none"> - Laboratory Report - Chemical Report - Supplier Report - Customer Report (Line Reject) - Process Quality Report - Daily report
TRACEABILITY	<ul style="list-style-type: none"> - Internal traceability of the components - Serial number - Production date
CALIBRATION	<ul style="list-style-type: none"> - Pressure reference - Voltage reference - Current reference - Power reference - Temperature reference - Humidity reference - Vibration reference - Master reference for measurement system - Sound reference (microphone)

	<ul style="list-style-type: none"> - System to assure the calibration of the tools in the production line and in the laboratories
DISMANTLE ROOM	<ul style="list-style-type: none"> - Defect list - Analysis report of the compressors rejected
SAMPLE TO CUSTOMERS	<ul style="list-style-type: none"> - Situation of the sample to the customer
QUALITY SYSTEM	<ul style="list-style-type: none"> - Certification ISO 9000 - Procedure - Quality Manual

During the audit activities we will use the following procedure:

- ECC CQ W 97028 Requirement for R134A compressors
- ECC CQ W 97029 R134a AUDIT CHECK LIST
- ECC CQ F 93006 SUPPLIER REPORT / AUDIT OF PROCESS ENGINEERING & PRODUCT
- ECC CQ W 93002 AUDIT OF PROCESS ENGINEERING AND PRODUCT

7.2 REPORT SUMMARY

7.2.1 LIST OF ACTIVITIES

According to ECC procedures following audit activities have been performed:

- R134 AUDIT CHECK LIST
- AUDIT OF PROCESS ENGINEERING AND PRODUCT
- SUPPLIER REPORT / AUDIT OF PROCESS ENGINEERING & PRODUCT

NOTE: The audit was not limited only on verification of aspects which are related to Phase-Out Project but it has covered verification of whole Quality System

7.2.2 THE MAIN FINDINGS

- The equipment for checking of finished products (internal and external assembly line) is not reliable (no pumping and leakage tests performed)
- Not all the oils used in the process have been released according to ECC procedures
- Mixing of the materials in the process has been found
- Valve plate assembly process must be improved
- It's necessary to check the leakage of the valve plate (see report of Bill BRANCA 19/03/1999)
- Rotor process control must be improved as at the moment the rejecting rate on the final test is 1% of the production due to startability problem
- It would be necessary to repeat the training of the Chemical lab. personnel
- Overall verification of internal procedures and the organization would be useful
- Some results of capillary flow test appear critical (reduction - 20%)
- The incoming inspection of local materials (local suppliers) is not complete. Consequently there are some problems with quality of incoming materials (suction muffler and the valve plate).

7.2.3 COORECTIVE ACTIONS

For all non-conformances the corrective actions have been discussed with customer. ECC confirmed it's willingness to support customer in preparation and realization of all Corrective Actions.

7.3 SCORE / CORRECTIVE ACTIONS

- Report Summary with list of necessary Corrective actions - ECC-CQ-F-93006.C.



COMPRESSORS

Supplier Report / Audit of

Process Engineering & Product

ECC-CQ-F-93006.C

Page 1 of 3

Supplier: Guangzhou Refrigeration Co. Ltd
Zanussi Elettromeccamica Wanbao Refrigeration Technology Industrial Co.Ltd

Assessment date: 06/11/2000 to 08/11/2000

Address: Twon, Baiyun District Guangzhou

Issue: ECC CQ Daniel BARDUCA

ECC-Auditors:

Phone no: 020 86450802
0086 20 81922918

Fax no: 86450724
0086 20 81900385

ECC TECH : Ned BEGOVIC
ECC CQ : Daniel BARDUCA

Current approvals held: 3rd party or other customer

Previous assessment by ECC:

Previous assessment date:

Supplier participants and positions:

LAI JIAN JI Director Administration Office Zanussi Elettromeccamica Wanbao Refrigeration Thechology
ZOU JIANTU Director of board Chief Engineer Guangzhou Refrigeration Co.Ltd
Quality manager, Production Manager, R&D Manager (company cards are in Chinese)

Ref	Assessment chapter	Max score	Appli score	Ref. achiev		C 50	B 65	A 85 100
				score	%			
1	Document Control	36	36	27	75	·	·	·
2	Records	21	21	12	57	·	·	·
3	Workstation	27	27	12	44	·	·	·
4	Process	38	38	21	55	·	·	·
5	Inspection, Measuring and Test Equipment	30	30	14	47	·	·	·
6	Handling, Storage, Packaging and	30	30	21	70	·	·	·
7	Corrective and Preventive Actions	12	12	6	50	·	·	·
Total		194	194	113	58	·	·	·

Non- conformance identified are detailed in corrective action form.

Corrective action programme required latest week- ending : _____

Signature : ECC Central quality Daniel BARDUCA

Guangzhou refrigeration Co. Ltd
Supplier

ECC distribution: Mr.H.Schlemmer, Mr.N.Begovic, Mr.F.Rozza

Corrective Action

Supplier: Guangzhou Refrigeration Co. Ltd	specification:	part:
	drawing:	
date of audit: 06/11/2000 to 08/11/2000	priority class: 1 critical point 2 major point 3 minor point	code no:
in:		questionnaire:

no.	NON-CONFORMING			priority class	responsible	CORRECTIVE ACTION	date of introduction
	characteristic	unit	actual				
	See audit R134 Process oil must be according ECC CQ procedures		See audit R134a	1			
	Pumping and leakage test must be performed in the internal and external assembly line		No performed	1			
	Leakage test must be performed in the valve plate assembly line		No performed	1			
	Rotor process must be under control, also the rotor final test		Out of control	1			
	About all the laboratories it's necessary to have clear reports		No report	1			

Corrective Action

Supplier:
Guangzhou Refrigeration Co. Ltd

specification:
drawing:

part:

date of audit: 06/11/2000 to 08/11/2000
in:

priority class: 1 critical point
2 major point
3 minor point

code no:
questionnaire:

no.	NON-CONFORMING			priority class	responsible	CORRECTIVE ACTION	
	characteristic	unit	actual				date of introduction
	It's necessary to have a laboratory for the analysis of the line and field reject compressors		No laboratory				
	It's necessary to have a right approach with the suppliers to solve the problems in the material (suction muffler, valve plate)		No				
	It's necessary to have a new training for the people in the chemical lab's		They changed all the people				

date: 17 / 11 / 2000

auditor: Daniel BARDUCA
signature

date:

supplier: _____
signature