

1.0 Reference and Address			
Report Number	GZ08060403-1	Original Issued: 23-Jun-08	Revised: None
Standard(s)	Room Air Conditioners - UL 484, 8th Edition, Dated Dec. 21, 2007		
Applicant	Electra air-conditioning (shenzhen) co.,ltd	Manufacturer 1	Electra air-conditioning (shenzhen) co.,ltd
Address	2 WUHE AVE. S., BANTIAN , BUJI, SHENZHEN, 518129, CHINA	Address	2 WUHE AVE. S., BANTIAN , BUJI, SHENZHEN, 518129, CHINA
Country	China	Country	China
Contact	Artemis Luo Wen Jing Amanda Wang Xiu Ping	Contact	Artemis Luo Wen Jing Amanda Wang Xiu Ping
Phone	86-755-89956222-3290	Phone	86-755-89956222-3290

2.0 Product Description				
Product	In-wall type Air Conditioner			
Brand name	Airwell and Electra			
Description	The products covered by this report are in-wall type air conditioners, have cooling mode, rated 220-240 V, 60 Hz, provided with a permanently connected 3-wire flexible power supply cord terminated in a grounding type attachment LCDI plug.			
Models	May 110 S 60Hz AW and KC 32M S			
Model Similarity	Two model are the same except the model name.			
Ratings	Product	Voltage	Input	Frequency
	KC 32M S	220-240 V	6.1 A	60Hz
	May 110 S 60Hz AW	220-240 V	6.1 A	60Hz
Other Ratings	Product	Refrigerant Mass R22	High Side Pressure	Low Side Pressure
	KC 32M S	21.16 Oz	400 PSIG	150 PSIG
	May 110 S 60Hz AW	21.16 Oz	400 PSIG	150 PSIG

**3.0 Product Photographs**

**Photo 1-4 - Overall view of the unit**

Photo No. 1

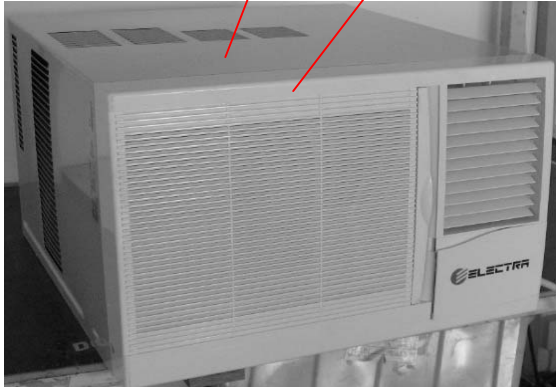
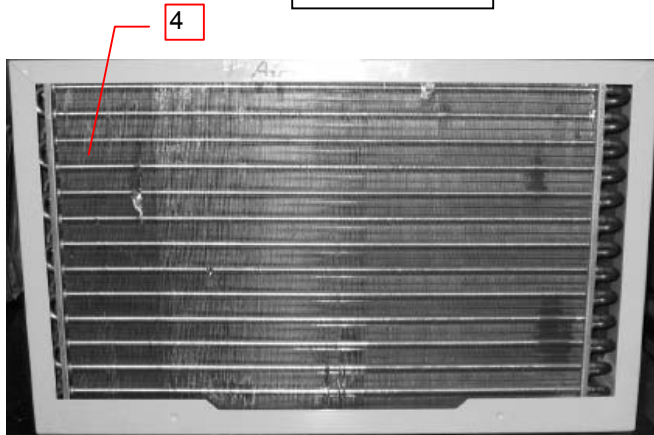


Photo No. 2



Unit Dimension 600×550×380mm

Photo No. 3

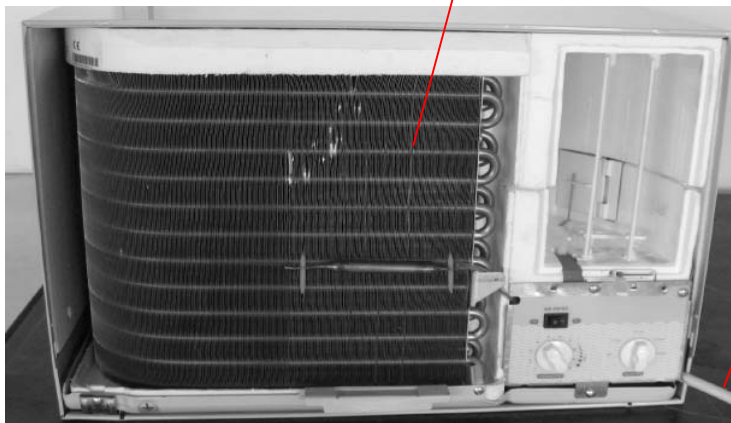


Photo No. 4



**3.0 Product Photographs**

**Photo 5-7 - Inside view of the unit**

Photo No. 5

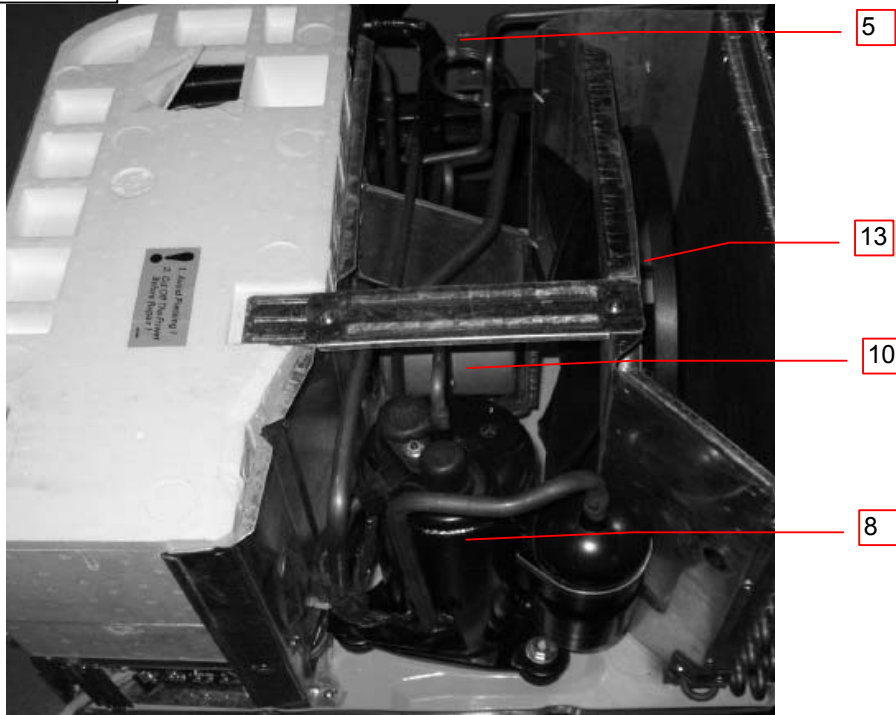
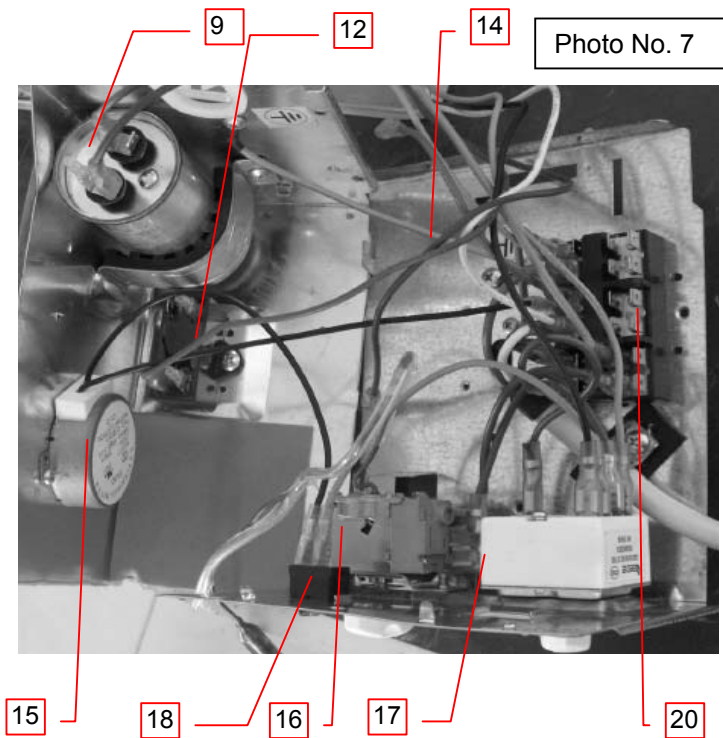


Photo No. 6



Photo No. 7



4.0 Critical Components						
Photo no.	Item no.	Name1	Manufacturer/ trademark2	Type / model2	Technical data and securement means	Mark(s) of conformity 3
1	1	Main Enclosure	-	-	Metal thickness 0.8 mm pained entirely	-
1	2	Front Panel	NINGBO LG YONGXING CHEMICAL CO LTD	ABS HI-121H	All colors HB 60°C minimum thickness 1.6mm	URus
3	3	Evaporator	-	-	Copper tube. The outside diameter Φ9.53, thickness 0.33 mm, 2 rows 12 tubing, 22 piece thin per inch,	-
2	4	Condenser	-	-	Copper tube. The outside diameter Φ7.94, thickness 0.33 mm, 2rows 14 tubing, 17 piece thin per inch	-
5	5	Capillary Tube	-	-	Copper tube.φ2.6×φ1.6×900	-
3	6	Power Supply Cord	TOWER MFG CORP	21571	14 AWG×3C, rating: 300 V, 105 °C, VW-1, length in range of 1.2-1.8 m	URus
3	7	LCDI Plug	TOWER MFG CORP	30381	240 VAC, 15 A 3600W	URus
5	8	Compressor	MATSUSHITA ELECTRIC INDUSTRIAL CO LTD PANASONIC CORP OF NORTH AMERICA	2P20S236A1 N	R22 230V,60Hz, R22 RLA 5A LRA 34A	URus
7	9	Capacitor for Compressor	SHANGHAI HAOYE ELECTRIC CO.,LTD	MK 306	30 uF, 450V,70°C	URus
			ANHUI TONG FENG ELECTRONICS CO LTD	CBB65	30 uF, 450V,70°C	URus
			WUHU JINXIN ELECTRICALS CO., LTD.	CBB65	30 uF, 450V,70°C	URus
			ANHUI FEIDA INDUSTRIES CO., LTD	CBB65A-1	30 uF, 450V,70°C	URus
5	10	Fan Motor	GUANGDONG WELLING MOTOR MANUFACTURING CO.,LTD	YSLA-70-6-0017	230V 70W 60Hz class A	URus
5	11	Evaporator Fan Blade (Not Shown)	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	ABS AG15E1	All colors HB 60°C minimum thickness 1.5mm	URus
7	12	Capacitor for fan motor	SHANGHAI HAOYE ELECTRIC CO.,LTD	STA-31	3 uF 450V 70°C	URus
			ANHUI TONG FENG ELECTRONICS CO LTD	CBB65	3 uF 450V 70°C	URus

4.0 Critical Components						
			FOSHAN SHUNDE DAHUA ELECTRIC CO LTD	CBB6-1	3 uF 450V 70°C	URus
5	13	Condenser Fan Blade	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	ABS AG15E1	All colors HB 60°C minimum thickness 1.5mm	URus
7	14	Internal Wire	-	1015	16 AWG 600 V, 105 °C, VW-1 for compressor and grounding wire. And 18 AWG 600 V, 105 °C, VW- 1 for other internal connection.	URus
7	15	Synchronous Motor	JIANGSU HUAYANG ELECTRICAL APPLIANCE CO LTD	50TYZA-4C	220/240V,50/60Hz, 3.5W	URus
7	16	Thermostat	FUSHAN TONGBAO CO.,LTD	WK17X-100- 100	250V 20A	URus
7	17	Main switch	ZHONGSHAN SHI JOINTEC ELECTRONICS COLTD	RS8802	250V 25A endurance 6k 55 °C	URus
7	18	Swtich for Synchronous Motor	SHANGHAI YONGXING ELECTRONIC SWITCH CO LTD	KCD3	250V 6A endurance 6k 75 °C	URus
6	19	Control Box	-	-	Metal thickness 0.8mm dimension 200×150× 100mm	-
7	20	Termaila Block	YUEQING JINLONG ELECTRONIC INDUSTRIAL CO., LTD.	JXO-B2	250V 6.5A	URus
	a	Base of Terminal Block	SHINKONG SYNTHETIC FIBERS CORP	PBT E202G30	All colors V-0 130°C HWI=2 HAI=0 CTI=2 minimum thickness 2.0mm	URus
	b	Terminal Conductor	-	-	Copper Alloy (H62) minimum thickness 0.8mm	-
1	21	Marking	-	-	Affixed to painted sheet steel, for temperature not less than 60 °C. Loaction on the left side of the main enclosure, and visible from the room side.	URus


5.0 Critical Unlisted Components								
Photo no.	Item no.	Name	Manufacturer/ trademark	Type / model	Technical data and securement means	Freq <sup>1</sup>	Qty <sup>2</sup> send to CEC	Required Action <sup>3</sup>
7	20	Termaila Block	YUEQING JINLONG ELECTRONIC INDUSTRIAL CO., LTD.	JXO-B2	250V 6.5A	Annual	1	1) Visual Check 2) Dielectric Voltage-Withstand Test
NOTES: 1) Quarterly, semi-annual, annual. 2) Indicate any samples not available and provide the anticipated date that the component will be available. 3) Required Action (select one of the three): Visual / Partial / Full Evaluation								

<b>6.0 Critical Features</b>	
<u>Recognized Component</u> – A component part, which has been previously evaluated by an accredited certification body with restrictions and must be evaluated as part of the basic product considering the restrictions as specified by the Conditions of Acceptability.	
<u>Listed Component</u> - A component part, which has been previously Listed or Certified by an accredited Certification Organization with no restrictions and is used in the intended application within its ratings.	
<u>Unlisted Component</u> - A part that has not been previously evaluated to the appropriate designated component standard. It may also be a listed or recognized component that is being used outside of its evaluated Listing or component recognition.	
<u>Critical Features/Components</u> - An essential part, material, subassembly, system, software, or accessory of a product that has a direct bearing on the product's conformance to applicable requirements of the product standard.	
<u>Construction Details</u> - For specific construction details, reference should be made to the photographs and descriptions. All dimensions are approximate unless specified as exact or within a tolerance. In addition to the specific construction details described in this Report, the following general requirements also apply.	
1. <u>Spacing</u> - In the primary circuit, minimum spacing 2.4mm are maintained through air and over surfaces of insulating material between current-carrying parts of opposite polarity and 6.4mm between current-carrying parts and dead-metal parts.	
2. <u>Mechanical Assembly</u> - Components such as switches, fuseholders, connectors, wiring terminals and display lamps are mounted and prevented from shifting or rotating by the use of lockwashers, starwashers, or other mounting format that prevents turning of the component.	
3. <u>Corrosion Protection</u> - All ferrous metal parts are protected against corrosion by painting, plating or the equivalent.	
4. <u>Grounding</u> - All exposed dead-metal parts and all dead-metal parts within the enclosure that are exposed to contact during any servicing operation and that are likely to become energized are reliably connected to the grounding lead of the power supply cord.	
5. <u>Internal Wiring</u> -Internal wiring is reliably routed away from sharp or moving parts. Internal wiring leads terminating in soldered connections are made mechanically secure prior to soldering. Recognized separable (quick disconnect) connectors of the positive detent type, closed loop connectors, or other types specifically described in the text of this report are also acceptable as internal wiring terminals. At points where internal wiring passes through metal walls or partitions, the wiring insulation is protected against abrasion or damage by plastic bushings or grommets	
6. <u>Schematics</u> - Refer to Illustration No. 2 for schematics requiring verification during Field Representative Inspection Audits.	
7. <u>Accessibility of Live Parts</u> - All uninsulated live parts in primary circuitry are housed within a metal or plastic enclosure constructed with no openings other than those specifically described in the constructions details.	
8. <u>Markings</u> - The product is marked on a component labeling system as follows: <ul style="list-style-type: none"> <li>• manufacturer's name, trade name or trade mark</li> <li>• model number</li> <li>• date of manufacture</li> <li>• electrical ratings (volts, amperes &amp; frequency)</li> <li>• the kind and amount of refrigerant in pounds, ounces, or both</li> <li>• the high and low side design pressures</li> </ul> Refer to Illustration No.1 for detail.	
9. <u>Cautionary Markings</u> - The product is marked on a component labeling system, <span style="float: right;">If</span> the supply cord is damaged, it must be replaced with a new power supply cord obtained from the manufacturer or its service agent. Note: The letters of the above markings are not less than 3.2 mm in height.	
10. <u>Installation, Operating and Safety Instructions</u> - Direction and information that the manufacturer considers necessary for installation, maintenance and use of the appliance are included. Refer to illustration 3	




**7.0 Illustrations**

**Illustration 1 - Marking**  
 Control No is 3153767

AIRWELL	MODEL: MAY 110 S 60Hz AW	Rev: A	 <p>CONFORMS TO UL STD. 484-</p> <p>3153767-</p>
Prod.No:		Design Pressure	
Cooling Btu/h : 12500	Heating Btu/h :	High Side: 400PSIG	
Cooling Amps : 6.1	Heating Amps :	Low Side: 150PSIG	
Cooling Watts: 1380	Heating Watts:		
Compressor RLA: 5	Compressor LRA: 34		
Refrigrant:R22 21.16 oz	Volts:220-240 60Hz 1Ph	Weight: 47Kg	

Series Number

ELECTRA	MODEL: KC 32M S	Rev: A	 <p>CONFORMS TO UL STD. 484-</p> <p>3153767-</p>
Prod.No:		Design Pressure	
Cooling Btu/h : 12500	Heating Btu/h :	High Side: 400PSIG	
Cooling Amps : 6.1	Heating Amps :	Low Side: 150PSIG	
Cooling Watts: 1380	Heating Watts:		
Compressor RLA: 5	Compressor LRA: 34		
Refrigrant:R22 21.16 oz	Volts:220-240 60Hz 1Ph	Weight: 47Kg	

Series Number

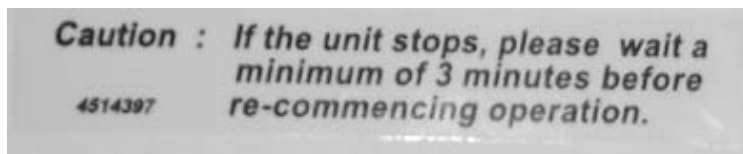
Item Code	A	B	C	D	E	F	G	H	I	J
Series Number Example	2	2	8	1	3	8	6	0	6	2

Explain as below:

- A: Decade Year Production (199x=1, 200x=2, 201x=3...ect).
- B: Manufacture Code, 2 means Electra Air- Conditioning (Shenzhen) Co., Ltd.
- C: Year Figure (xx9=9,xxx0=0,xxx1=1...ect).
- D-E: Produced Week,( Produced in Week 13, D=1,E=3).
- F-J: The Running Number ,from 10001 to 99999

If the supply cord is damaged, It must be replaced with a new power supply cord obtained from the manufacturer or its service agent.

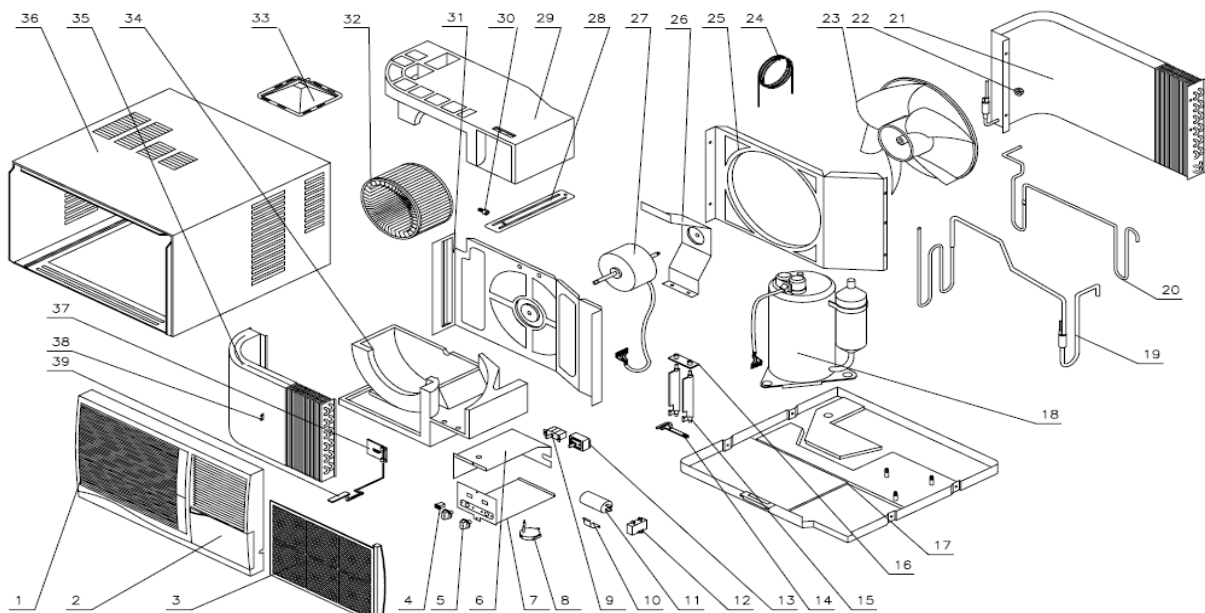
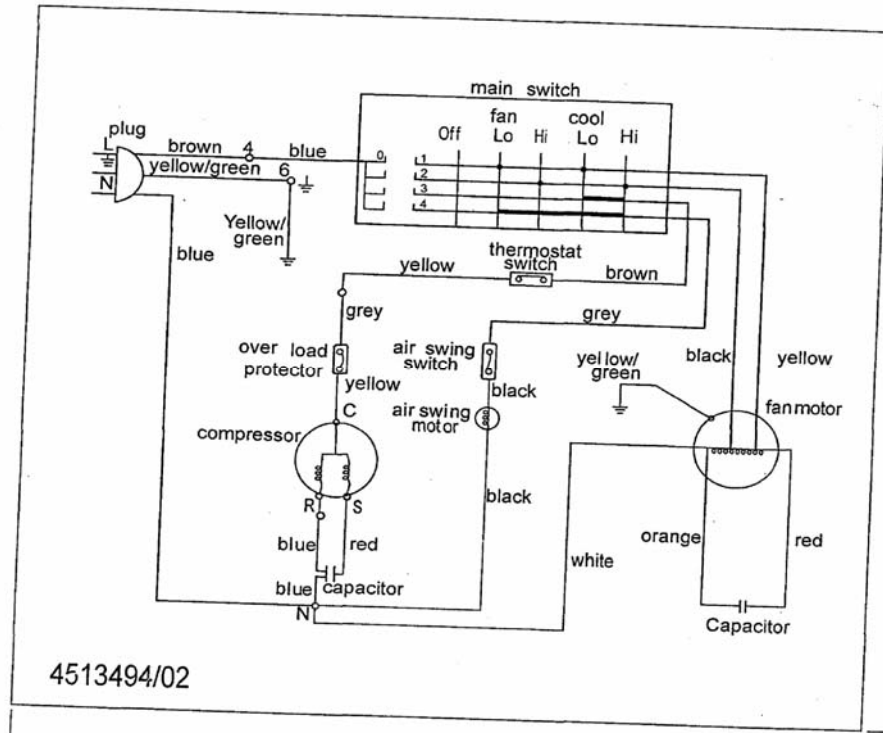
Location: on the left side of the main enclosure, and visible from the room side.



Open the control panel can easy see the caution marking

**7.0 Illustrations**

**Illustration 2 - Wiring Diagram and Explose View**



7.0 Illustrations

Illustration 3 - Instruction

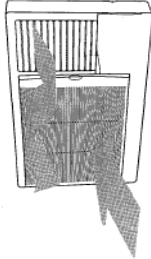
# In-Wall Type Air Conditioner Installation Manual

## INSTALLATION PROCEDURE

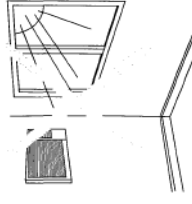


• Choose a location which meets the conditions below and obtain the customer approval.

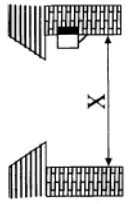
Be sure that the air flow is unobstructed.



Be sure that the unit is not exposed to direct sunlight.



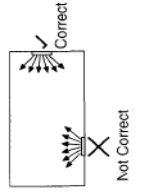
Do not install the unit where your neighbors will be disturbed.



Do not expose the back of the unit to direct sunlight.



If installing in a long & narrow room, please locate the unit along the shorter wall to ensure optimal air delivery to the entire room.



**Selecting the installation location**

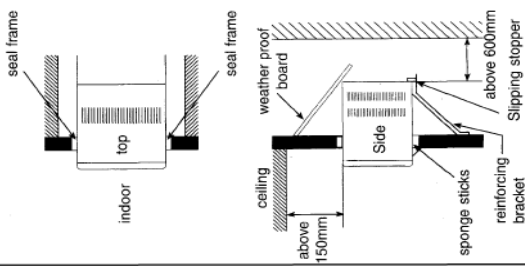
**Confirm installation dimensions**

- Dimension(MM)  
MAY 110(RC) MAY 70,90  
Height: 375 350  
Width: 560 450  
Installation hole dimension: unit dimension + sealer dimension

- Installation Notes:**
- Rubber cushion must be positioned on the bottom of the machine to lower noise and vibration.
  - Sponge must be positioned on both the top and side to prevent loss of cool air.

### Thin Wall Installation

Be sure the rear and the side louver are unobstructed.

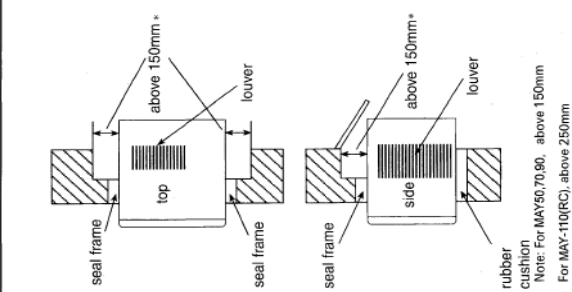


**Installation**

- A stopper should be positioned at the rear to stop machine from slipping out of installation hole.
- Must use the special circuit for the room air conditioner with earth wiring.

If the wall is very thick, make clearance on top and side of the unit for air circulation as shown in the diagram below.

### Thick Wall Installation

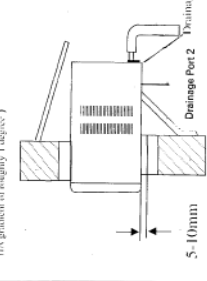


**Electrical installation work**

**Operation testing**

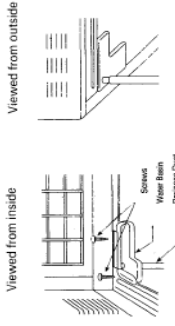
- When the unit is properly installed, explain the operation to the customer and carry out a test operation.

The specific drainage, the rear part of the air-conditioner should be connected to the drain hole.




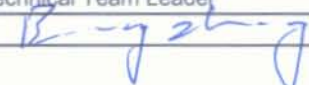
Drainage ports 1 & 2 are for MAY110(RC) Drainage installation as shown in the lower part of the drawing, if needed Model is MAY110(RC) equipped with the function of using the condenser to dissipate heat. Please use this function as much as possible because it enhances the overall effectiveness of the air-conditioner. (Slight sound of splashing water might be heard) If you do not want to use this function, please remove the rubber stopper of the drainage port 1.

Drainage port 2 is thermostatic drain valve only for MAY110 RC RC which can prevent the fan from freezing and damage the motor in winter. Do not dismount it please. Install the water basin and drainage duct at the drainage port of the unit base as shown in the diagram.



For your safety, when finishing or disassembling, always please keep the preventing screw between the cabinet and baseplate balanced.

8.0 Test Summary			
Sample Receipt Date	Mar. 1, 2008	Sample Condition	Prototype
Evaluation Period	Mar. 5, 2008 - Mar. 14, 2008		
Test Location	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch (Address: 1~8th Floor, Block E2, 11 Cai Pin Road, Science City, Guangzhou Economic Development Zone, Guangzhou, China) and Electra air-conditioning ( shenzhen) co.,ltd (Address:2 wuhe ave. s., bantian , buji, shenzhen, 518129, China)		
Test Procedure	TMP		
Determination of the result includes consideration of measurement uncertainty from the test equipment and methods. The product was tested as indicated below with results in conformance to the relevant test criteria.			
The following tests were performed:			
Test Description	Room Air Conditioners - UL 484, 8th Edition, Dated Dec. 21, 2007	Terminal Blocks - UL 1059 4th Edition, Rev. Dec. 15, 2006	
Strain Relief Test	10.2.8	-	
Leakage Current Test - Cord-Connected Room Air Conditioners	33	-	
Rain Test	34	-	
Input Test	36	-	
Temperature and Pressure Test	37	-	
Starting Test	38	-	
Dielectric Voltage-Withstand Test	39	-	
Condenser Fan Motor Failure Test	40	-	
Overflow Test	47	-	
Spillage Test	48	-	
Strength Tests – Pressure Containing Components	59	-	
Impact Test	74	-	
Temperature Test	-	11	
Dielectric Voltage-Withstand Test	-	12	

8.1 Signatures			
A representative sample of the product covered by this report has been evaluated and found to comply with the applicable requirements of the standards indicated in Section 1.0			
Completed by:	Peter Peng	Reviewed by:	Benny Zhang
Title:	Engineer	Title:	Technical Team Leader
Signature:		Signature:	

**9.0 Correlation Page For Multiple Listings**

The following products, which are identical to those identified in this report except for model number and Listee name, are authorized to bear the ETL label under provisions of the Intertek Multiple Listing Program.

<b>BASIC LISTEE</b>	None
Address	
Country	
Product	

<b>MULTIPLE LISTEE 1</b>	None
Address	
Country	
Brand Name	

<b>ASSOCIATED MANUFACTURER</b>	
Address	
Country	
Brand Name	

<b>MULTIPLE LISTEE 1 MODELS</b>	<b>BASIC LISTEE MODELS</b>

### 10.0 General Information

The Applicant and Manufacturer have agreed to produce, test and label ETL Listed products in accordance with the requirements of this Report. The Manufacturer has also agreed to notify Intertek and to request authorization prior to using alternate parts, components or materials.

#### COMPONENTS

Components used shall be those itemized in this Intertek report covering the product, including any amendments

#### LISTING MARK

The ETL Listing mark applied to the products shall either be separable in form, such as labels purchased from Intertek, or on a product nameplate or other media only as specifically authorized by Intertek. Use of the mark is

#### MANUFACTURING AND PRODUCTION TESTS

Manufacturing and Production Tests shall be performed as required in this Report.

#### FOLLOW-UP SERVICE

Periodic unannounced audits of the manufacturing facility shall be scheduled by Intertek. An audit report shall be issued after each visit. Special attention will be given to the following:

1. Conformance of the manufactured product to the descriptions in this Report.
2. Conformance of the use of the ETL mark with the requirements of this Report and the Certification Agreement.
3. Manufacturing changes.
4. Performance of specified Manufacturing and Production Tests.

In the event that the Intertek representative identifies non-conformance(s) to any provision of this Report, the Applicant shall take one or more of the following actions:

1. Correct the non-conformance.
2. Remove the ETL Mark from non-conforming product.
3. Contact the issuing product safety evaluation center for instructions.

### 10.1 Evaluation of Unlisted Components

Because Unlisted Components are uncontrolled, and they do not fall under a third party follow up program, Intertek may require these components to be tested and/or evaluated at least once annually, more often for certain components, as part of the independent certification process. The Unlisted Components in Section 5.0 require testing and/or evaluation as indicated.

**Note to Intertek Follow Up Inspector: The Component Evaluation Center, CEC, will notify you in writing when these components must be selected and sent to the CEC for re-evaluation**

Ship the samples to:  
Intertek Testing Services Shenzhen Ltd. Guangzhou Branch  
1~8th floor, Block E2, 11 Cai Pin Road, Science city,  
Guangzhou Economic Development Zone,  
Guangzhou, China

Sample Disposition: Due to the destructive nature of the testing, all samples will be discarded at the conclusion of testing unless, the manufacturer specifically requests the return of the samples. The request for return **must** accompany the initial component shipment.

**11.0 Manufacturing and Production Tests**

The manufacturer agrees to conduct the following Manufacturing and Production Tests as specified:

**Required Tests**

- Pressure Tests for leakage and strength
- Dielectric Voltage Withstand Test
- Grounding Continuity Test

**PRESSURE TESTS FOR LEAKAGE AND STRENGTH**

Method:

Each room air conditioner shall be tested and proved tight at not less than the design pressure(s) marked on the appliance.

If the final assembly is completed with flare-type fittings or telescoped tubing joints which are sealed with silver solder, brazing, or the equivalent, the pressure test of the complete system may be at the low-side design pressure provided that the high-side parts are individually tested either by the room air conditioner manufacturer or by the manufacturer of the part at not less than the high-side design pressure.

At least once each year, a strength test shall be conducted on refrigerant-containing components of the shell-type which have an inside diameter greater than 3 inches (76.2mm) including motor-compressor enclosures. The test shall be conducted on at least one sample of each size and type. The part shall comply with requirements of Strength Tests. Such tests may be conducted either by the room air conditioner manufacturer or by the manufacturer of the component.

Products Requiring Pressure Test:

All products covered by this report

**PRODUCTION-LINE DIELECTRIC VOLTAGE WITHSTAND TEST:**

Method:

One hundred percent of production of the products covered by this Report shall be subjected to a routine production-line dielectric withstand test.

The test shall be conducted on products which are fully assembled. Prior to applying the test potential, all switches, contactors, relays, etc., should be closed so that all primary circuits are energized by the test potential. If all primary circuits cannot be tested at one time, then separate applications of the test potential shall be made.

The test potential specified below shall be applied between primary circuits and accessible dead-metal parts. The test potential may be gradually increased to the specified value but must be maintained at the specified value for one second or one minute as required.

Test Equipment:

The test equipment shall incorporate a transformer with an essentially sinusoidal output, a means to indicate the applied test potential, and an audible and/or visual indicator of dielectric breakdown.

The test equipment shall incorporate a voltmeter in the output circuit to indicate directly the applied test potential if the rated output of the test equipment is less than 500VA.

If the rated output of the test equipment is 500VA or more, the applied test potential may be indicated by either: 1 - a voltmeter in the primary circuit; 2 - a selector switch marked to indicate the test potential; or 3 - a marking in a readily visible location to indicate the test potential for test equipment having a single test potential output. In cases 2 and 3, the test equipment shall include a lamp or other visual means to indicate that the test potential is present at the test equipment output. All test equipment shall be maintained in current calibration.

Products Requiring Dielectric Voltage Withstand Test:

PRODUCT

All products covered by this Report.

Test Voltage

1480 VAC

or

Test Time

1 minute



1776 VAC 1 second

**GROUNDING CONTINUITY TEST**

Method:

Each appliance that has a power-supply cord having a grounding conductor shall be tested to determine the grounding continuity between the grounding blade of the attachment plug and the accessible dead metal parts of the appliance that are capable of becoming energized. Only a single test is required to be conducted when the accessible metal selected is conductively connected by design to all other accessible metal.

Test Equipment:

Any indication device, such as an ohmmeter, a battery and buzzer combination, or the like, is to be used to determine compliance with the above requirement.

Products Requiring Grounding Continuity Test:

All products covered by this Report.

<b>12.0 Revision Summary</b>				
The following changes have been made to this Report:				
Date/ Proj # Site ID	Project Handler/ Reviewer	Section	Item	Description of Change
				None