



EN

PORTABLE AIR CONDITIONER

SWAN EVO



SERVICE MANUAL

V 06/17

1. Any maintenance for this machine must be done by professional serviceman.
2. Please make sure the machine is power-off, and power plug is pulled out before maintenance and repair.

CONTENTS

- Maintenance for Common Trouble.....3
 - Trouble Analysis.....3
 - Remote control battery installation4
- Trouble Shooting.....5
 - Electronic Control Theory.....5
 - Typical Trouble Analysis.....7
- Trouble Shooting for Cooling Failure.....11
 - Refrigerant Principle.....11
 - Trouble Shooting Flow for Cooling Failure.....12
- Circuit Diagram.....13

Section One

Maintenance for Common Trouble

Chapter I Trouble Analysis

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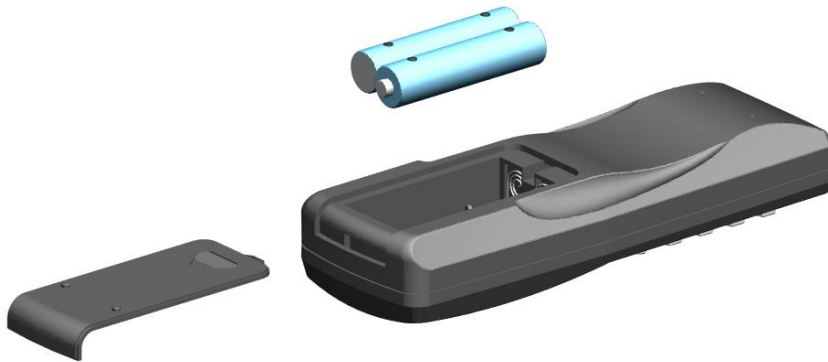
When trouble happened, don't get panicky and take apart the machine without any analysis, otherwise some unnecessary damages will be caused. Please deal with the trouble as the following to find a correct solution.

If the trouble cannot be solved by the following solutions, please check special trouble solutions for help.

Trouble	Cause	Solution
Machine cannot work	<ol style="list-style-type: none">1. Power-off2. Power plug is loose3. Water-full indicator turns on or "P2" flashes on screen	<ol style="list-style-type: none">1. Power-on2. Re-insert power plug3. Drain out the water
Cooling function cannot work well	<ol style="list-style-type: none">1. Filters are blocked by dusts2. Air-inlet is blocked3. The room is too big or blow-by	<ol style="list-style-type: none">1. Clean filters2. Remove the blockage.3. Adjust room area or strengthen the seal
Water leakage	<ol style="list-style-type: none">1. Machine doesn't stand upright2. Water-outlet is blocked	<ol style="list-style-type: none">1. Let machine stand upright2. Unchoke water-outlet.
Abnormal noise of machine	<ol style="list-style-type: none">1. Machine is not placed well2. Filters is blocked	<ol style="list-style-type: none">1. Let machine on flat place and stand upright2. Clean the filters
Heat air doesn't go out immediately under heating mode.	<ol style="list-style-type: none">1. Environmental temperature is higher than setting temperature2. Heat air will blow out three minutes later after heating mode running	<ol style="list-style-type: none">1. Make setting temperature is higher than environmental temperature2. Please wait patiently for three minutes.
Strange smell blows out	Machine is unused for a long time, it has adsorbed the smell from furniture, carpet, paint. when the machine runs, the smell will blow out	Run machine for 2-5 minutes, the strange smell will disappear.

Chapter II Remote control battery installation

- (1) Open the cover of battery case in remote control.
- (2) According to the polarity tips, install batteries into remote control correctly. (positive pole to “+”, negative pole to “-“).

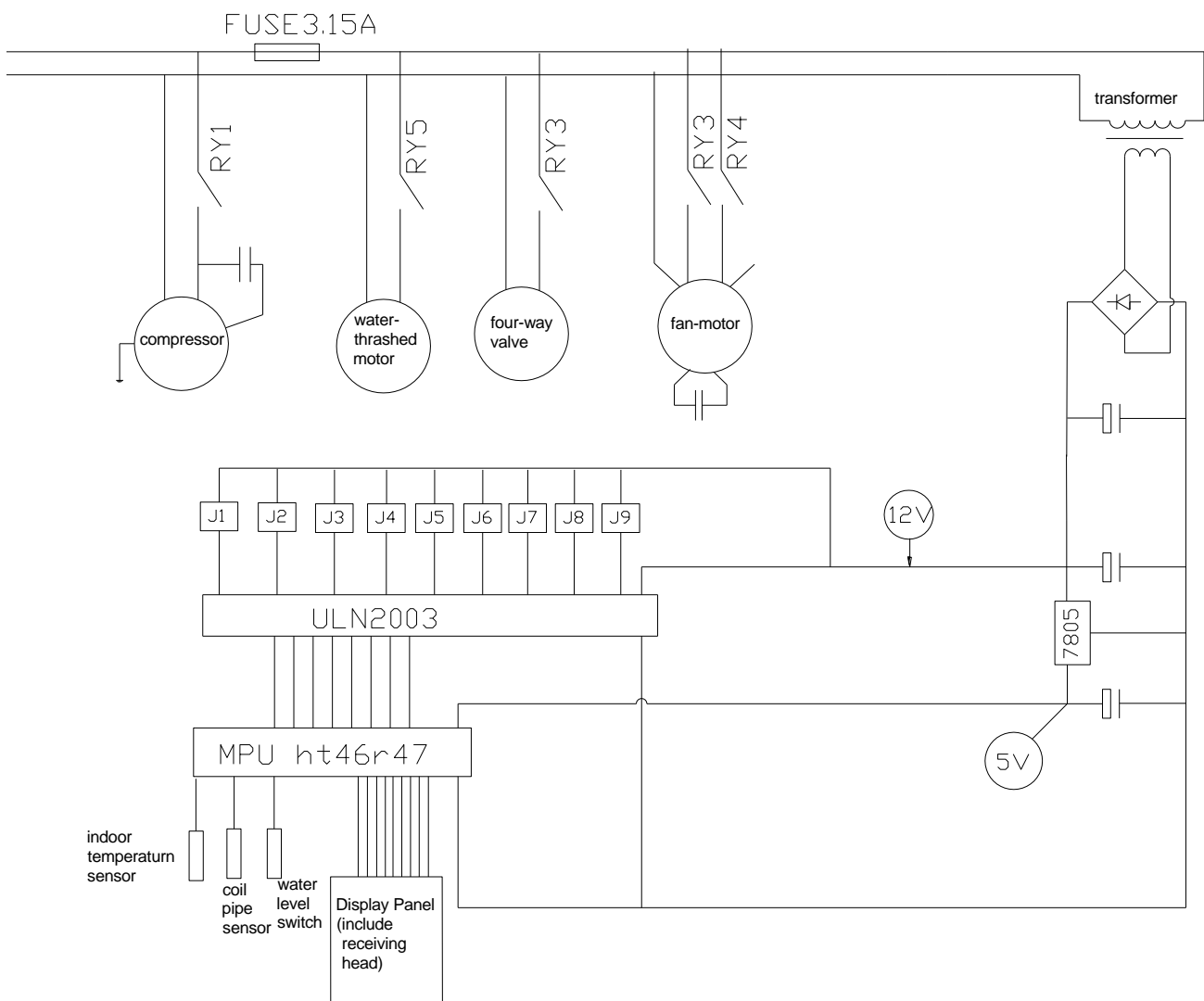


Section Two

Trouble Shooting

Chapter I Electronic Control Theory

First of all, let's get a simple knowledge of electronic control theory, so that to seize the key points of problems quickly and deal with problems more efficiently. An electronic schematic diagram as following (this is a typical schematic diagram, for special machine , please note the circuit diagram attached to the machine):



From above circuit diagram we can see that the whole diagram is divided into two parts: strong power part and weak power part, and electric transformer is the cut-off point. Strong power part before transformer while weak power part after transformer.

For strong power part, the phase line enters through 30A compressor relay RY1, then passes fuse, fan motor, four-way valve, water motor. Fan motor is made up of tap motor and centrifugal fan. There are high fan speed and low fan speed, and be controlled by two 5A relay (RY3 and RY4) respectively. RY3 for high speed while RY4 for low speed. Water motor is shaded-pole motor and is controlled by relay RY2. Four-way valve is controlled by RY5.

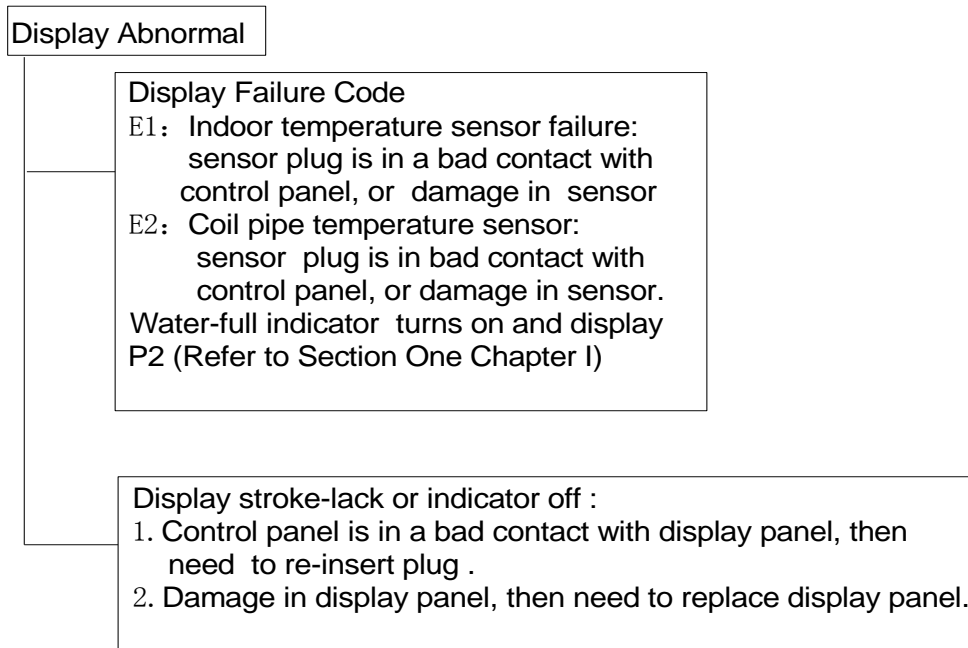
For weak power part, it can be divided into two parts: power supply part and control part. The part of power supply goes out through transformer output-port, then passes four bridge rectifiers of commutation diode, capacitive E1 wave filtering , and get volts d.c. about 12V , to supply relay and drive integrated package ULN2003, the other way go through current-limiting resistance RR1 and 5V stabilized voltage 7805 to supply SCM , peripheral circuit and display power. The core of control part is HT46R47. Its input

parts are keys, receiving head, room temperature sensor , evaporator temperature sensor and water-level detecting circuit; its output parts are control relay, buzzer and status display.

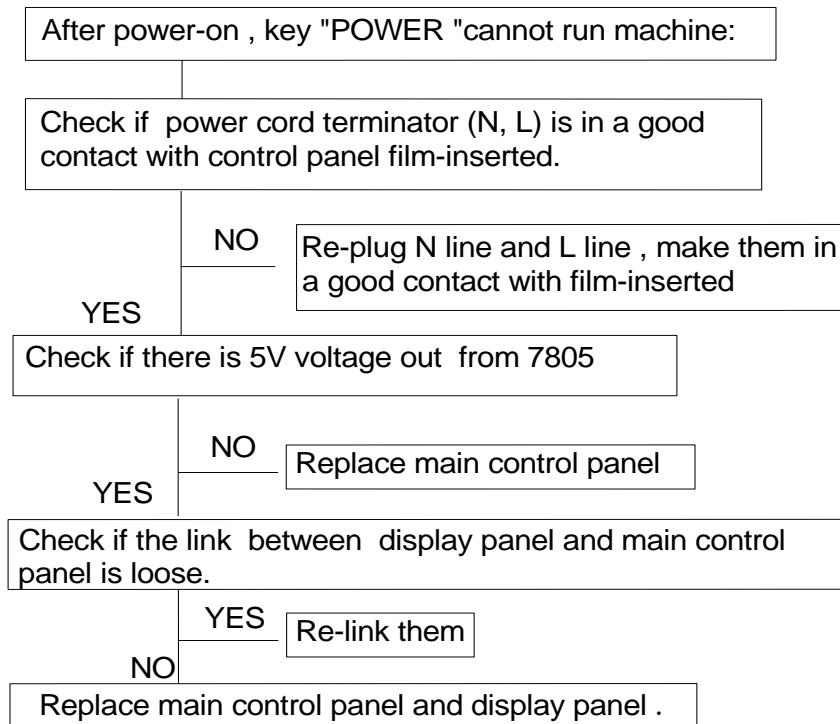
Keys, LED or LCD are man-machine conversation windows. By keys we can change machine work status; LED or LCD displays machine current work status. Remote control receiver: when controlled by remote control, the remote control receiver gets the control signals from remote control, then sends them to SCM. Evaporator temperature sensor sends the surface temperature of evaporator to SCM. Water-level detecting circuit detects if water tank is full, and sends the signals to SCM. Analyzed by SCM process, control signals is sent out through drive ICULN2003 to control relay's ON/OFF. Then the machine can work well under SCM uniform control.

Chapter II Typical Trouble Analysis

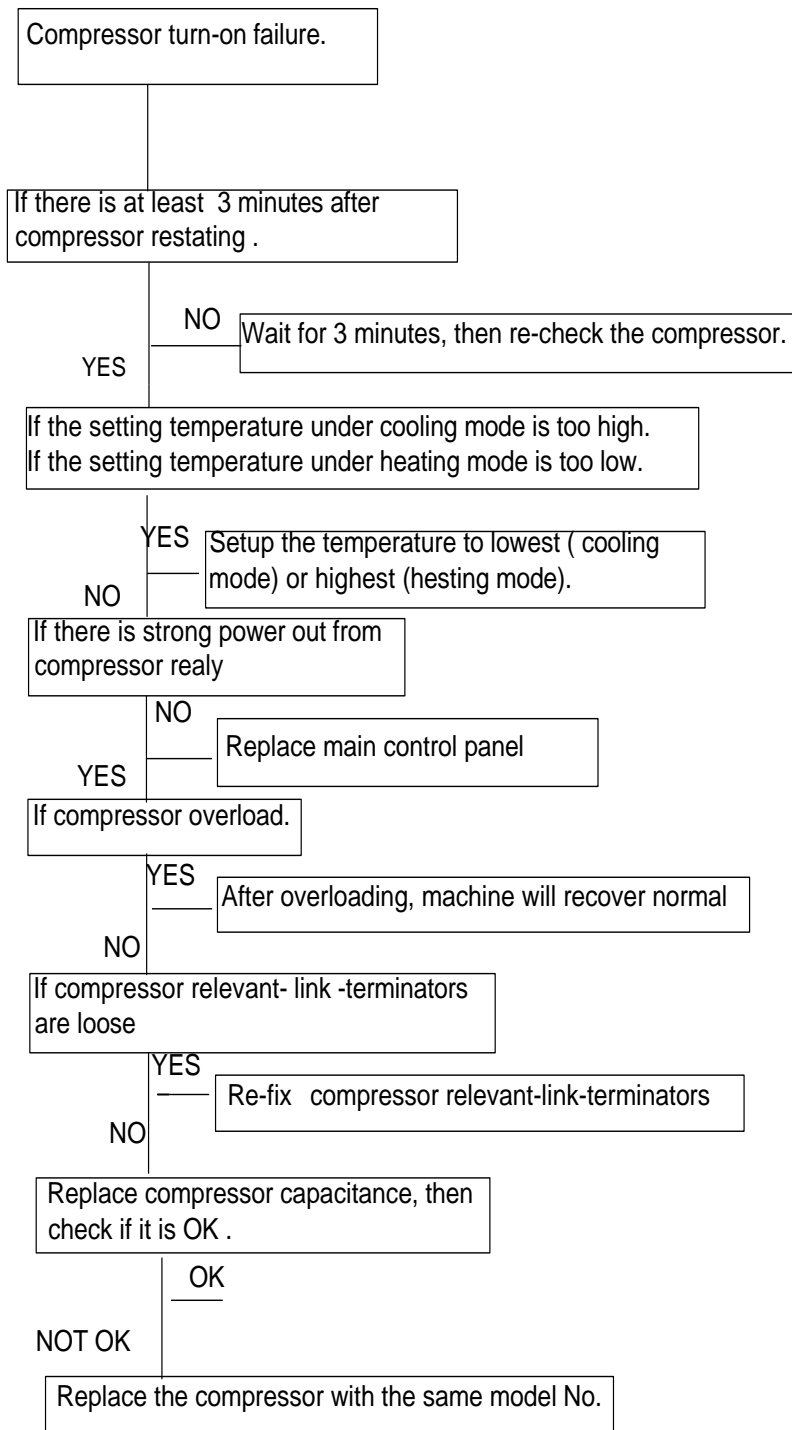
Trouble Detecting Flow for Abnormal Display



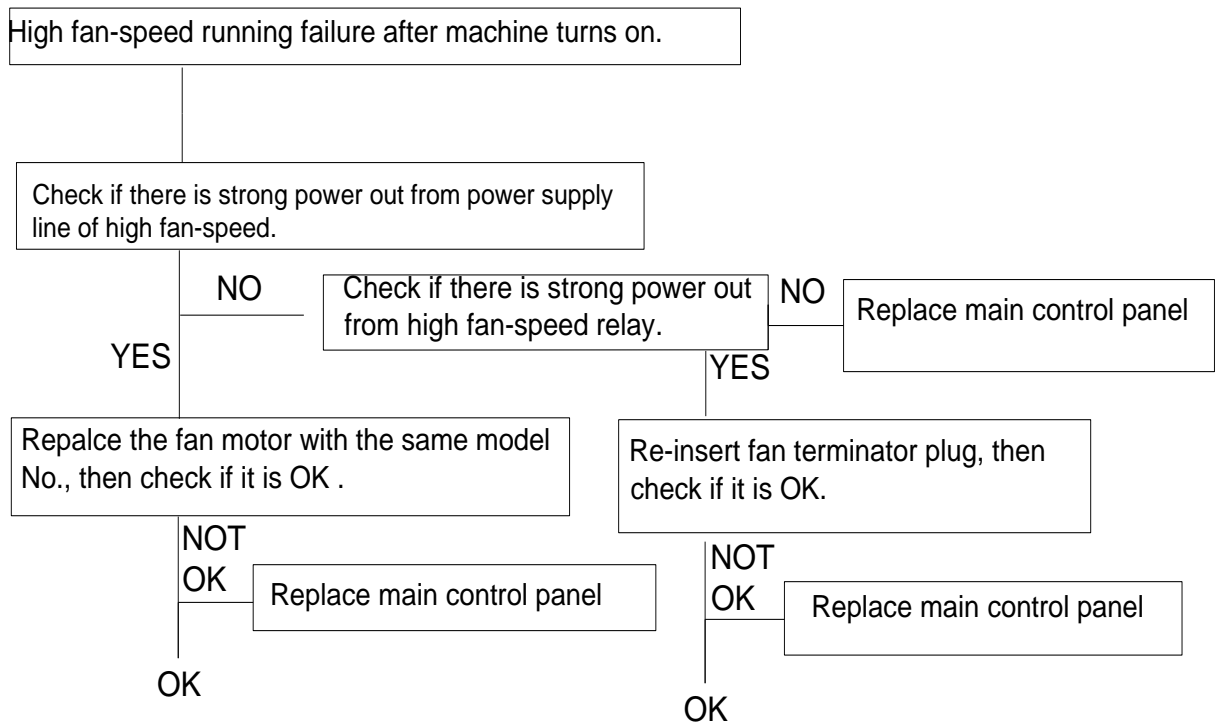
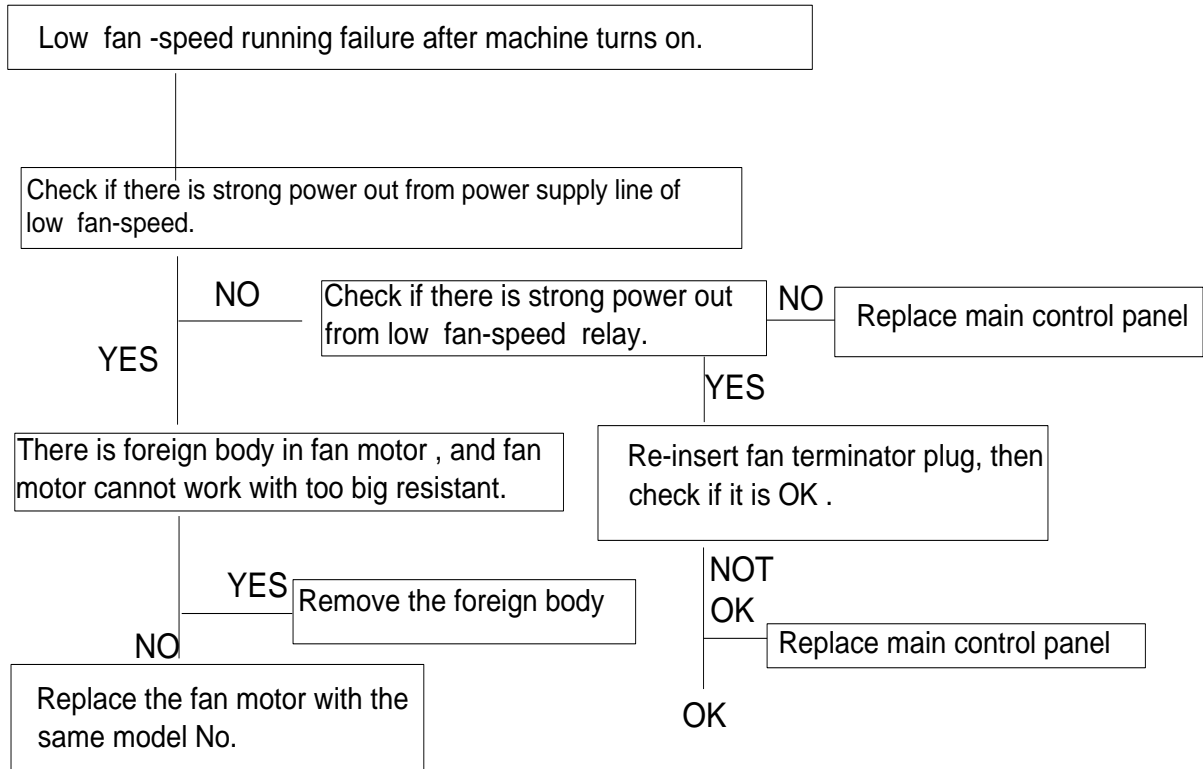
Trouble Shooting Flow for Machine Turn-On Failure



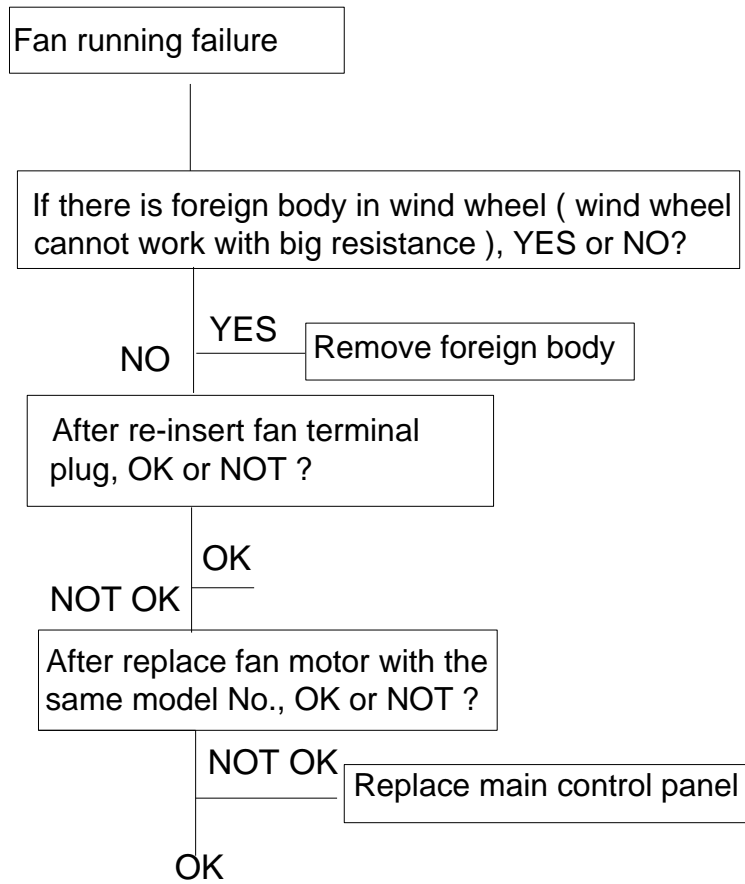
Trouble Shooting Flow for Compressor Turn-On Failure



Trouble Shooting Flow for Low/High Fan-Speed Running Failure



Trouble Shooting Flow for Fan Running Failure

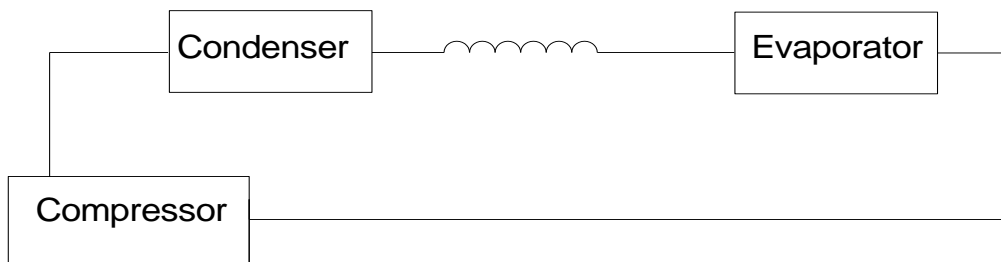


Section Three

Trouble Shooting for Cooling Failure

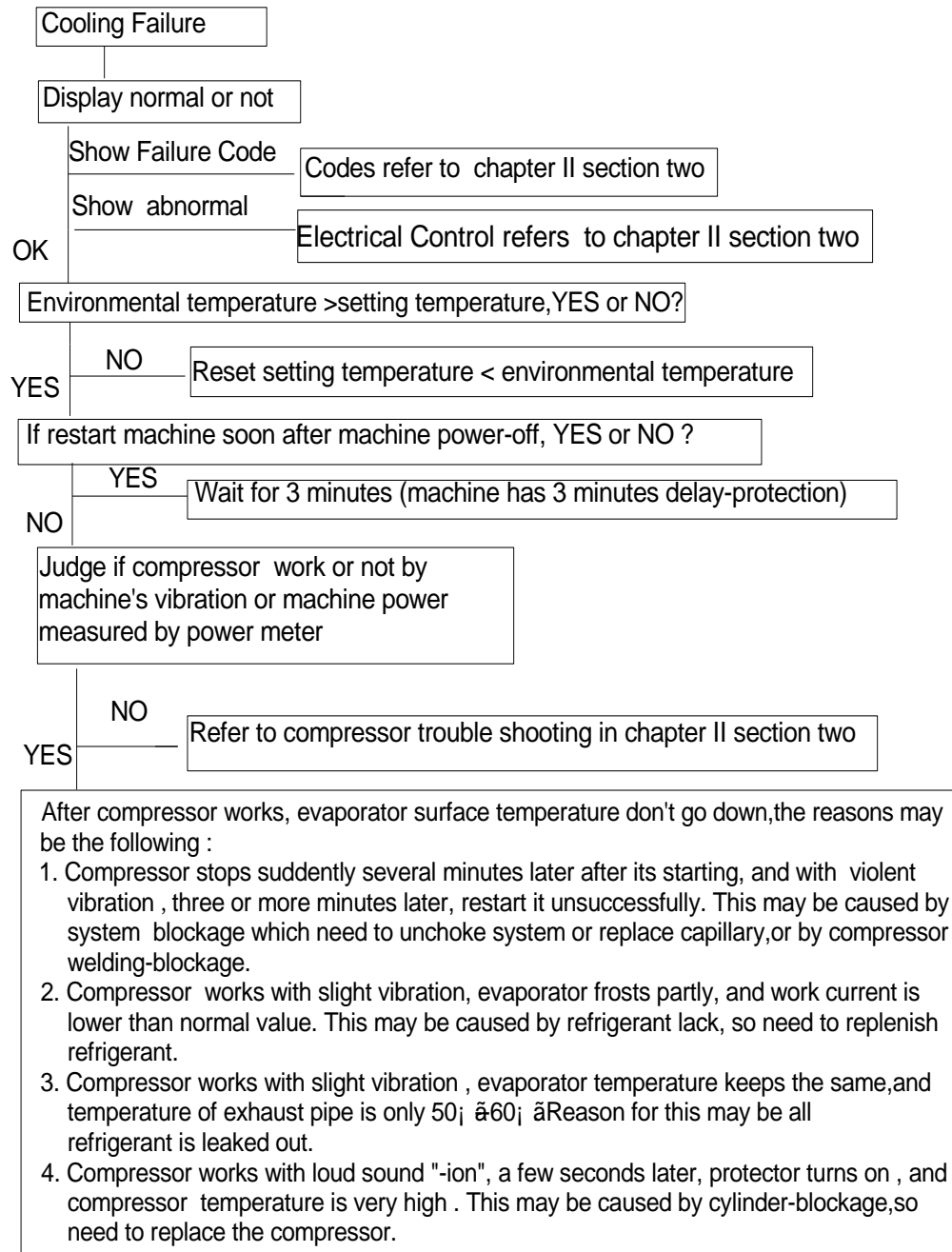
Chapter I Refrigerant Principle

Portable air-conditioning refrigerant system was mainly composed of four parts: compressor, condenser, capillary and evaporator, which are connected by tubes as following:

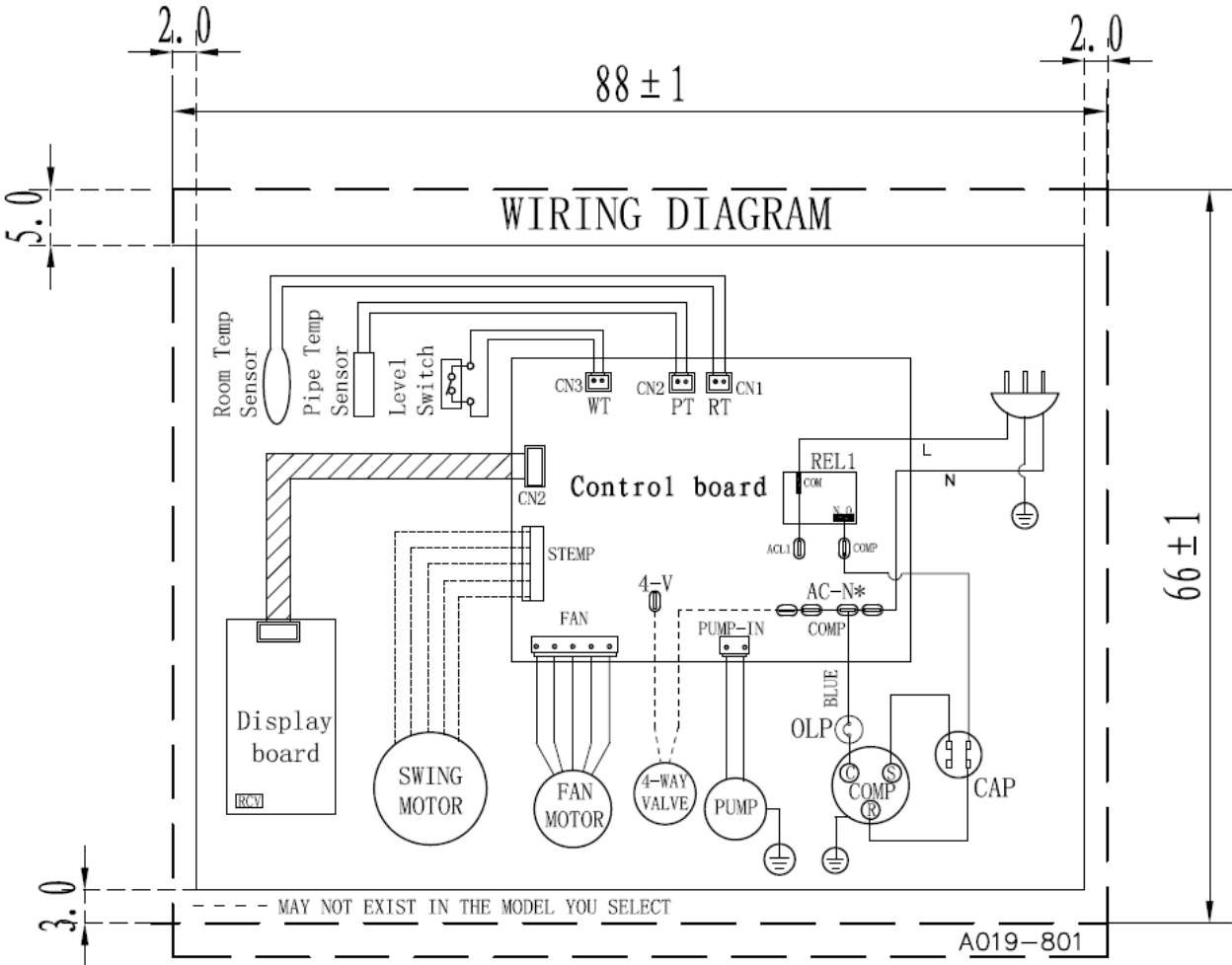


When portable air conditioner starts to work, firstly compressor compresses normal-temperature and low-pressure refrigerant gas to a high-temperature and high-pressure gas, then send it to condenser. In condenser, the high-temperature and high-pressure refrigerant gas will be cooled down to a mesothermal (45°C-50°C) and high-pressure refrigerant liquid by fan, after that the refrigerant passes capillary where it will be decompressed and throttled, and then goes to evaporator where the refrigerant will expand rapidly and absorb heat from environment, at last fans blow out cooling air to cool the room.

Chapter II Trouble Shooting Flow for Cooling Failure



Chapter III Circuit Diagram





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