SERVICE MANUAL

SANYO

FILE NO. A-4929

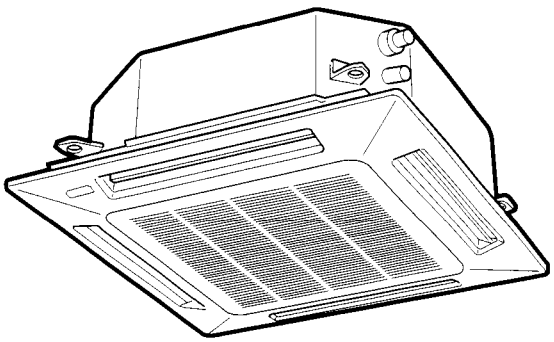
SPW - X252G5 / SPW - C251G5
SPW - X252G5 / SPW - C251G8

SPLIT SYSTEM AIR CONDITIONER

INDOOR MODEL No.	PRODUCT CODE No.	OUTDOOR MODEL No.	PRODUCT CODE No.
SPW - X252G5	1 854 009 68	SPW - C251G5	1 854 005 96
		SPW - C251G8	1 854 005 30

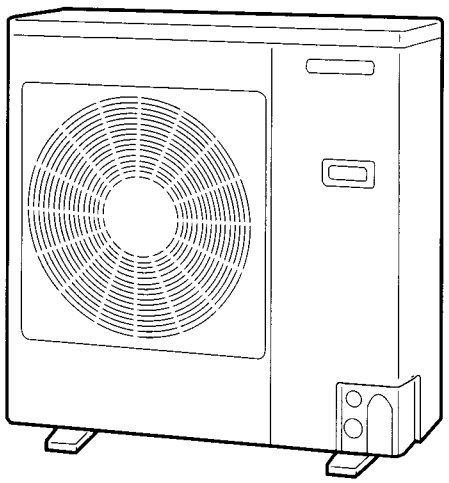
Section
1
2
3
4
5

Indoor Unit



SPW - X252G5

Outdoor Unit



SPW - C251G5
SPW - C251G8

IMPORTANT!
Please Read Before Starting

This air conditioning system meets strict safety and operating standards. As the installer or service person, it is an important part of your job to install or service the system so it operates safely and efficiently.

For safe installation and trouble-free operation,you must:

- Carefully read this instruction booklet before beginning.
- Follow each installation or repair step exactly as shown.
- Observe all local, state, and national electrical codes.
- Pay close attention to all warning and caution notices given in this manual.

WARNING

This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

CAUTION

This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

If Necessary, Get Help

These instructions are all you need for most installation sites and maintenance conditions. If you require help for a special problem, contact our sales/service outlet or your certified dealer for additional instructions.

In Case of Improper Installation

The manufacturer shall in no way be responsible for improper installation or maintenance service, including failure to follow the instructions in this document.

SPECIAL PRECAUTIONS

When Wiring

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY A QUALIFIED, EXPERIENCED ELECTRICIAN SHOULD ATTEMPT TO WIRE THIS SYSTEM.

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause **accidentaly injury or death**.
- **Ground the unit** following local electrical codes.
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.

When Transporting

Be careful when picking up and moving the indoor and outdoor units. Get a partner to help, and bend your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut your fingers.

When Installing

...In a Room

Properly insulate any tubing run inside a room to prevent "sweating" that can cause dripping and water damage to walls and floors.

...In Moist or Uneven Locations

Use a raised concrete pad or concrete blocks to provide a solid, level foundation for the outdoor unit. This prevents water damage and abnormal vibration.

...In an area with High Winds

Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable air baffle.

...In a Snowy Area (for Heat Pump-type Systems)

Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.

When Connecting Refrigerant Tubing

- Keep all tubing runs as short as possible.
- Use the flare method for connecting tubing.
- Apply refrigerant lubricant to the matching surfaces of the flare and union tubes before connecting them, then tighten the nut with a torque wrench for a leak-free connection.
- Check carefully for leaks before starting the test run.

NOTE:

Depending on the system type, liquid and gas lines may be either narrow or wide. Therefore, to avoid confusion the refrigerant tubing for your particular model is specified as either "narrow" or "wide" rather than as "liquid" or "gas".

When Servicing

- Turn the power OFF at the main power box (mains) before opening the unit to check or repair electrical parts and wiring.
- Keep your fingers and clothing away from any moving parts.
- Clean up the site after you finish, remembering to check that no metal scraps or bits of wiring have been left inside the unit being serviced.

WHO SHOULD USE THIS MANUAL

This service manual is made to assist the service technician apply his knowledge and training to this model air conditioner. This manual is written both for **experienced service persons** and **those who are new** to air conditioning service. To help those with less experience or who are new to this kind of unit we have included more explanations of basic procedures in simple language than is usual in some service manuals. The **experienced technician** will of course find he knows many of these things already and can go directly to the procedures and information he needs; the less experienced technician will better understand what to do even before he arrives on the job, and therefore be better able to work by himself as well as assist the more experienced technician.

TABLE OF CONTENTS

Introduction: *Read Me First!*

This manual will help you understand and service the air conditioner. To help you find the information you need, we have divided it into 5 main sections. Each section is divided into chapters with charts, tables and explanations to help you find and repair problems.

- ❑ **Section 1: Specifications,** tells you about the physical and electrical make up of the unit, as well as its heating and cooling capacities. Look in this section to find the correct values for components and functions.
- ❑ **Section 2: Processes and Functions,** explains each different part of the cooling and heating cycle, and how each control function reacts to changing conditions to keep the room at the set temperature range.
- ❑ **Section 3: Electrical Data**, which has fold-out schematic and wiring diagrams so you can find the parts you need to check when something is wrong, and see how they should be connected.
- ❑ **Section 4: Service Procedures,** has two main parts, a *diagnostic* chapter to help you find the specific component to replace or adjust, and a chapter with specific procedures and values to guide you in checking the electrical components in the unit.
- ❑ **Section 5: Instruction Manual,** is the same manual the user will have, and it contains general information about how to set and use the features of this particular air conditioner. Knowing this information will help you tell the owner how to use and care for this air conditioner, and also help you install and set the unit correctly.

HOW TO USE THIS MANUAL

You can use this manual both as a *reference* to find specific information about the capacity, functions and construction of this unit, and as a source of information to help you set up and maintain the unit.
When this unit is not working properly, and the cause is not known, you can use the procedures in **Section 3: Servicing Procedures** to find the problem, fix it, and restore the unit to its proper functioning.

This air conditioner has many helpful self diagnostic features to help you identify problem areas quickly.

So you will be ready when a problem happens, we suggest you look this manual over and become familiar with it by following these steps:

1. **Look at the TABLE OF CONTENTS** to get an idea of what is in this manual and where to find it.
2. **Look at the chapter about TROUBLE SHOOTING**, so you are familiar with the way the flow charts work. They are designed to guide you quickly through the possible causes for each kind of problem that is likely to happen to the Unit. Particularly read the introduction to this section, and the parts about the self-diagnosis and error codes which show on the display.
3. **Look at the chapter about CHECKING ELECTRICAL COMPONENTS.** You already know about most of these procedures. This chapter gives you the specific values and methods for these components. If you don't know some of these procedures, you can easily learn them here.
4. **Read the Instruction Manual!** The Instruction Manual is included here because it helps you help the user to set the temperature controls properly and know how to take care of any simple problems that may happen, as well as know when to call for service. The Instruction Manual also has illustrations, care, and installation information not found in the rest of the service manual. It is short, and if you read it carefully, you will be able to answer the customers questions easily, and also know the most efficient ways for setting times and temperatures.

Please use this manual to make your work easier, keep the air conditioner functioning well, and keep your customers satisfied.

1. SPECIFICATIONS

1-1 Unit Specifications

MODEL NO.	Indoor Unit			SPW-X252G5
	Outdoor Unit			SPW-C251G8
POWER SOURCE				380 / 400 / 415 V – 3 ø – 50 Hz
PERFORMANCE				Cooling
Capacity			BTU / h kW	25,000 7.33
Air circulation (Hi/Me/Lo)			m^3 / h	1,140 / 1,020 / 840
Moisture removal (High)			Liters / h	4.2
ELECTRICAL RATINGS				
Voltage rating			V	380 / 400 / 415
Available voltage range			V	342 – 456
Running amperes			A	4.9 / 4.8 / 4.7
Power input			W	2,780 / 2,810 / 2,830
Power factor			%	86 / 84 / 83
E.E.R			BTU / Wh	8.99 / 8.90 / 8.83
Starting amperes			A	27 / 29 / 30
FEATURES				
Controls / Temperature control				Microprocessor / I.C. thermostat
Timer				ON / OFF 12-hours
Fan speeds (Indoor unit)				3 and Automatic control
Airflow direction (Indoor unit)				Automatic (Remote control)
Air filter				Washable, easy access
Compressor				Rotary
Refrigerant control				(R22) Capillary tube
Operation sound	Indoor – Hi/Me/Lo		dB-A	37.0 / 35.0 / 31.0
	Outdoor – Hi		dB-A	52.0
Refrigerant tubing connections				Flare type
Max. allowable tubing length at shipment			m(ft)	Max.15 (50)
Limit of tubing length			m(ft)	40 (132)
Limit of elevation difference between the two units			m(ft)	Outdoor unit is higher than indoor unit 40 (132) Outdoor unit is lower than indoor unit 25 (82)
Required additional refrigerant			g / m	25
Refrigerant tube diameter	Narrow tube		mm (in)	6.35 (1 / 4)
	Wide tube		mm (in)	15.88 (5/ 8)
Refrigerant tubingf kit / Accessories				Optional / Mounting plates
DIMENSIONS & WEIGHT				Indoor Unit (include panel) / Outdoor Unit
Unit dimensions	Height		mm(in)	338 (13- 5/16) / 885 (34- 7/ 8)
	Width		mm(in)	930 (36- 5/ 8) / 870 (34- 1/ 4)
	Depth		mm(in)	930 (36- 5/ 8) / 300 (11- 3/ 4)
Net weight			kg(lb)	45 (99) / 66 (145)
Shipping weight			kg(lb)	71 (156) / 80 (176)
Shipping volume			$m^3(ft^3)$	0.724 (25.6) / 0.354 (12.5)

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Rated conditions
Cooling: Indoor air temperature 27°C DB / 19.5°C WB, Outdoor air temperature 35°C DB

1-2 Major Component Specifications

(A) Indoor Unit

Unit Model No.			SPW-X252G5
Source			220/230/240 V – 1 ø – 50Hz
Remote control unit			RCS-31G (W) (Microprocessor)
Controller P.C.B. Ass'y			POW-SX31G (Microprocessor)
Fan (Number...diameter)		mm	Turbo (1...ø 490)
Fan Motor			
Model...Nominal output		W	SFG6X – 41A5P...40W
Source			220/230/240 V – 1 ø – 50Hz
No. of pole...rpm (230V, High)		rpm	6...504
Coil resistance (Ambient temp. 20°C)		Ω	BRN – WHT :113.1, ORG – YEL : 64.5 WHT – VLT :22.95, WHT – PNK : 75.39 VLT – ORG :11.57,
Safety devices			
Operating temp.	Open	°C	130 ± 5°C
	Close	°C	79 ± 11°C
Run capacitor		VAC, μF	440 V, 4 μF
Heat exchanger			
Coil			Aluminum plate fin, Copper tube
Rows...fin pitch		mm	2...2.0
Face area		m^2	0.315
Panel			
Model No.			PNR – X252GA
Dew proof heater			240 V, 47 W
Auto louver motor			M2LA24ZA22
Auto louver motor...Rated		V, W, rpm	240 VAC, 3 W, 2.5 rpm
Coil resistance (at 25°C)		Ω	15,620 Ω ± 15 %

(B) Outdoor Unit

MODEL No.			SPW – C251G5		SPW-C251G8	
Source			220/230 /240 V – 1 ø – 50 Hz		380/400/415 V – 3 ø 50Hz	
Compressor			Rotary (Hermetic)		Rotary (Hermetic)	
Model...Code No.			C-R221H5V...1		C-R224H8S...1	
Nominal output		W	2,220		2,200	
Compressor oil		CC	1,350		1,350	
Coil resistance (at 25 °C)		Ω	C-R : 0.76, C-S : 2.76		R-S : 5.54, S-T: 5.54, T-R : 5.54	
Refrigerant amount at shipment		g	R 22 / 2,400		R 22 / 3,700	
Safety device			Internal type	External type	Internal type	External type
Overload relay models			—	OL –D24	—	FMSA – 1Z612
Operating temperature	Open	°C	160 ± 5	150 ± 5	120 ± 5	—
	Close	°C	87 ± 11	63 ± 10	98 ± 11	—
Operating ampere (at 25 °C)		A	—	Trip in 6/ 16sec. at 59 A	—	6 A, 110%
Run capacitor		V, μF	400, 40 μF		—	
Crank case heater		V, W	240 V, 30 W			
High pressure switch			ACB- JB22			
Set pressure	OFF	kg/cm²	$30^{+2.0}_{-0.5}$			
	ON	kg/cm²	24 ± 2.0			
Fan Number...diameter		mm	Propeller (1... ø 460)			
Fan motor						
Model...Nominal output (W)			SFC6T-71A5P...70 W			
No. of pole...rpm (230 V, High)			6...859 rpm			
Coil resistance (Ambient temperature 20°C)		Ω	BRN - WHT : 58.4, YEL - PNK : 12.4 WHT - YEL : 66.3			
Safety device						
Operating temperature	Open	°C	130 ± 8			
	Close	°C	79 ± 15			
Run capacitor		VAC, μF	440V, 4 μF			
Heat exchanger						
Coil			Aluminum plate fin, Copper tube			
Rows...fin pitch		mm	2...2.0			
Face area		m²	0.616			

1-3 Other Component Specifications

(A) Indoor Unit

			SPW – X252G5
Power Transformer			ATR – L122BVAS1
Rated		Primary	AC 230 V, 50Hz
		Secondary	19V, 0.63 A
		Capacity	12 VAC
Coil resistance		Ω	WHT - WHT : 235.5, BRN-BRN : 1.7 (at 25 °C)
Thermistor (Coil sensor)			PTC - 51H - S1
Coil resistance		Ω	60°C : 13.8 ± 5% , 90°C : 5.1 ± 5% 70°C : 9.7 ± 5% , 100°C : 3.8 ± 5% 75°C : 8.2 ± 5% , 110°C : 2.8 ± 5% 80°C : 7.0 ± 5% , 120°C : 2.2 ± 5% 85°C : 5.9 ± 5% , 130°C : 1.7 ± 5%
Drain pump			WP20SL - 14
Rated			AC 230 V, 14.7 W
Float switch			FS - 3502 - 202
Rated (Contact rated)			AC 230 V, 50 W
Synchronized Motor			M2LA24ZA22

(B) Outdoor Unit

		SPW-C251G5	SPW-C251G8
Compressor Motor Mgnetic Contactor		FMCa-1S	FMSA-1Z612
Coil rated		AC 220 / 240 V, 50 Hz	AC 220 / 240 V, 50 Hz
Coil resistance (at 20°C)	Ω	662 ± 15 % (at 25 °C)	588 (at 20 °C)
Relay			
Contact rated	A	AC 220 / 240 V, 28 A (Main) AC 220 / 240 V, 8 A	AC 220 V, 0,3 A
Rated ampere (90 / 120%)	A	6 A	6 A
Auxiliary relay		MCS 240A2F	
Coil rated	A	AC240 V, 50 Hz	
Coil resistance	kW	15.5 ± 15 %	
Contact rated	A	AC250 V, 5A	
Relay		—	RDR – S400
Rated voltage	V		AC 380 / 415 V, 3 ø, 50Hz
Resistance (at 20°C)	kΩ		76.3
Thermostat (Coil sensor)		YTB – S377	
Operating Temperature	°C	27.5 ± 1.5 OFF (Low) $25.5^{+1.5}_{-0.5}$ ON (High)	
Contact rated		AC 250 V, 1 A	

1-4 Dimensional Data

(A) Indoor Unit : SPW-X252G5

Dimension: mm

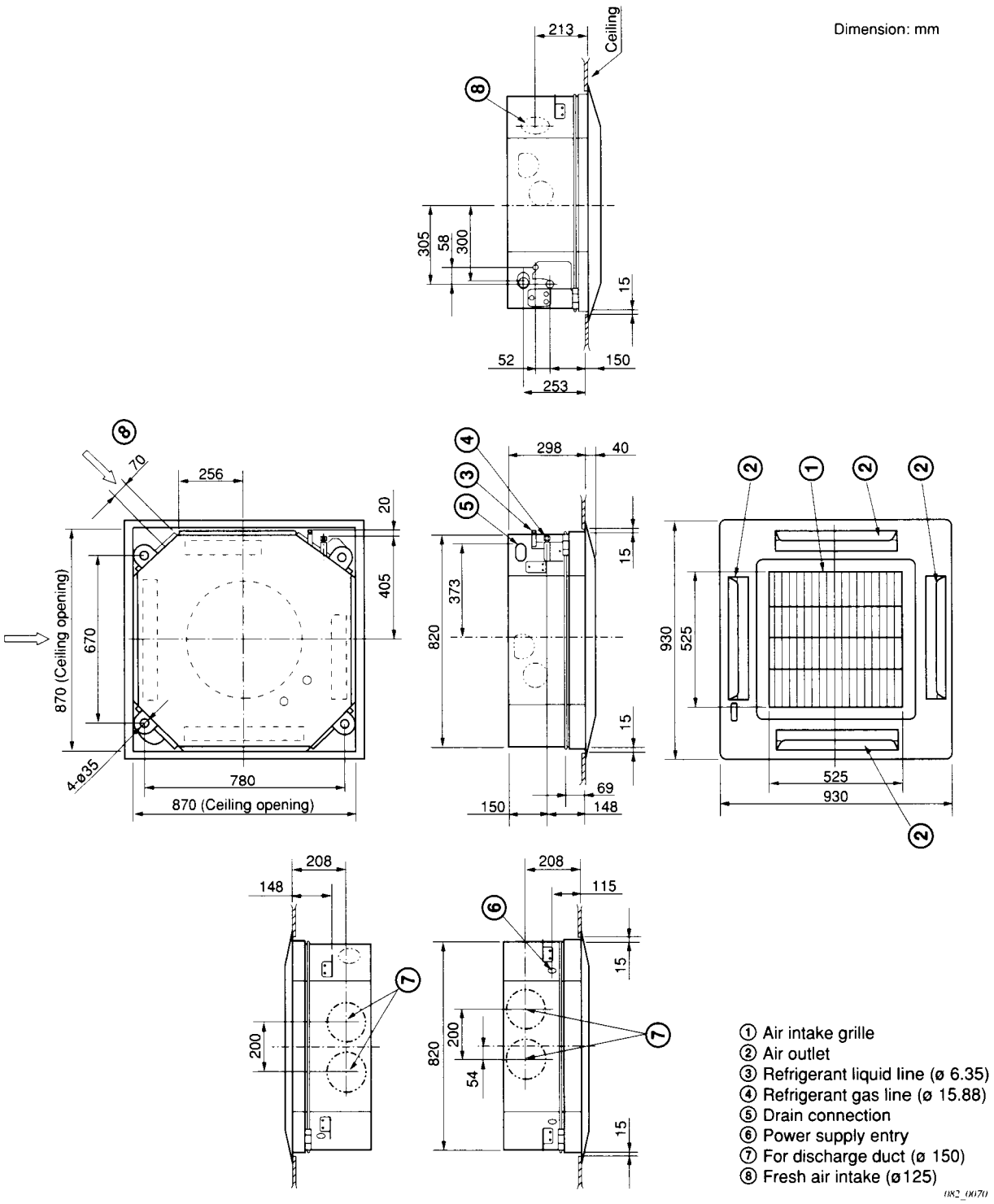
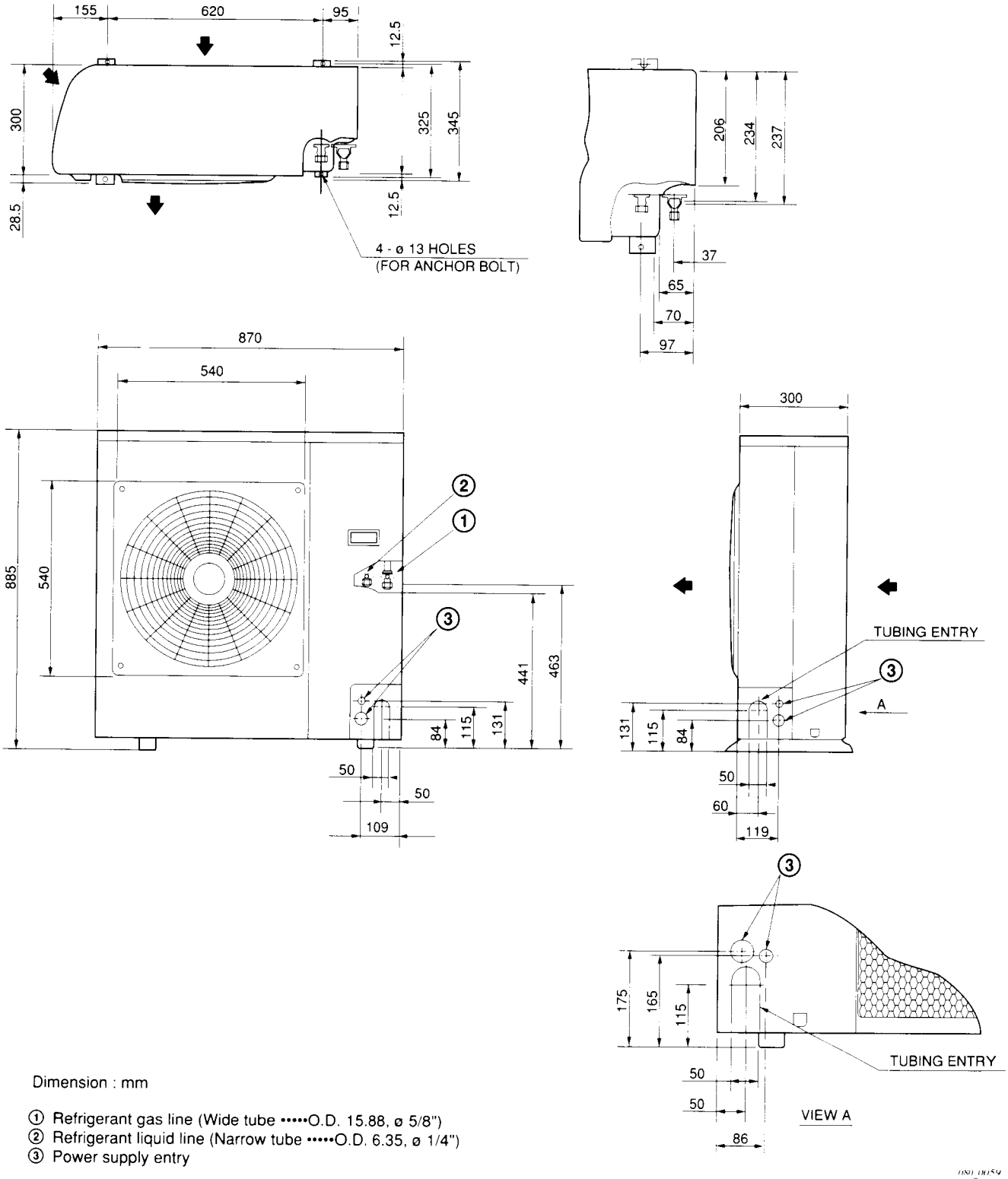


Fig. 1

(B) Outdoor Unit : SPW-C251G5, SPW-C251G8



Dimension : mm

① Refrigerant gas line (Wide tube •••••O.D. 15.88, ø 5/8")
② Refrigerant liquid line (Narrow tube •••••O.D. 6.35, ø 1/4")
③ Power supply entry

Fig. 2

1-5 Refrigerant Flow Diagram

Indoor Unit : SPW-X252G5

Outdoor Unit : SPW-C251G5
SPW-C251G8

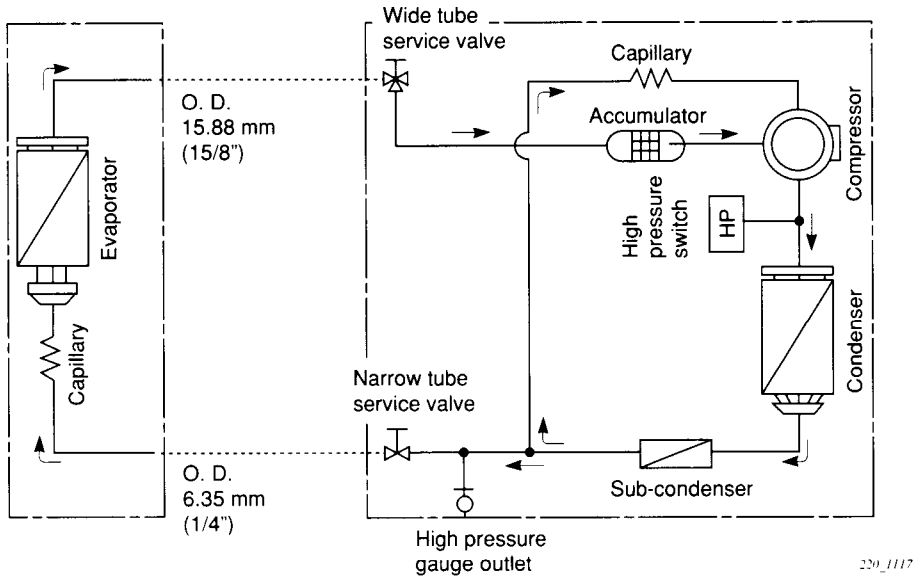


Fig. 3

1-6 Operating Range

	Temperature	Indoor air intake temp.	Outdoor air intake temp.
Cooling	Maximum	35°C DB / 22°C WB	50°C DB
	Minimum	19°C DB / 14°C WB	19°C DB

2. PROCESSES AND FUNCTIONS

2-1 Room Temperature Control

The Unit adjusts room temperature by cycling the compressor (in the outdoor unit) ON and OFF. This process is controlled by the **thermostat** located in the indoor unit. The diagrams on this and the next page show how each part of the system acts as the temperature of the room changes and the thermostat calls for the compressor to start (**thermo ON**) or stop (**thermo OFF**). Diagram A) tells about the cooling cycle, and Diagram B) tells about the heating cycle.

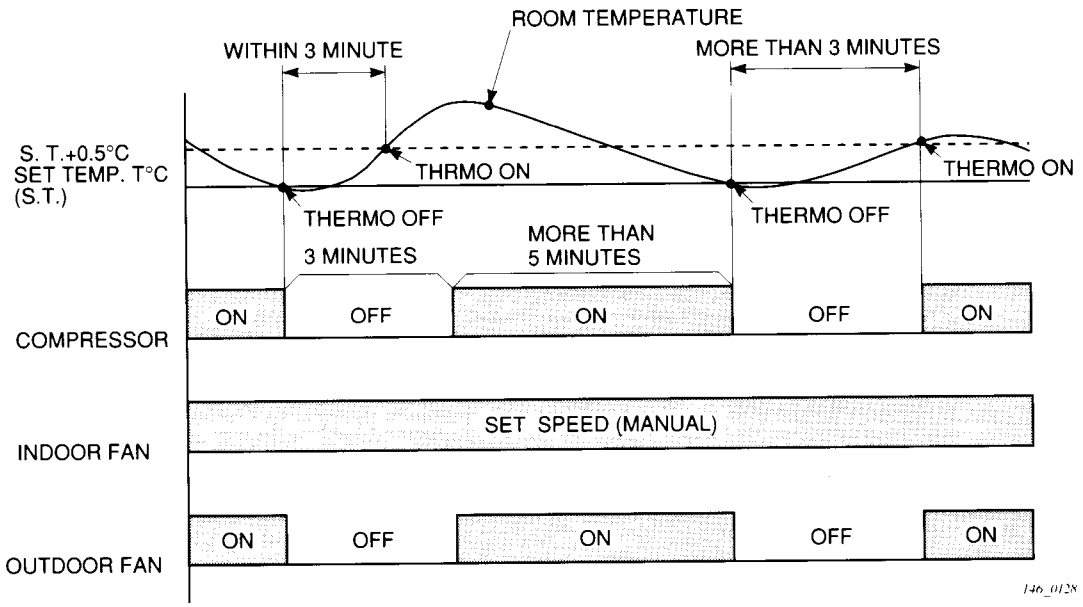


Fig. 4

Chart Summary and Explanations

- ❑ Once the compressor **starts**, it keeps running for 5 minutes.
- ❑ Once the compressor **stops**, it will not start running again for 3 minutes.
- ❑ If you **change** the operation mode during the cooling cycle, the control circuit **stops** the compressor for 3 minutes.
- ❑ For 5 minutes after the compressor is first turned on, and for 3 minutes after it is turned off, the compressor is not controlled by the room sensor.
- ❑ **Thermo ON:** When room temperature goes to 2°C above the set temperature T°, (T°+2°C):

  Compressor → **ON**
- ❑ **Thermo OFF**: When the room temperature is equal to or below the set temperature T°:

  Compressor → **OFF**

2-2 Freeze Prevention

Freeze Prevention keeps the indoor heat exchange coil from freezing. Freezing reduces the efficiency of the unit, and frost buildup on the coil blocks cool air circulation from the indoor unit's fan.

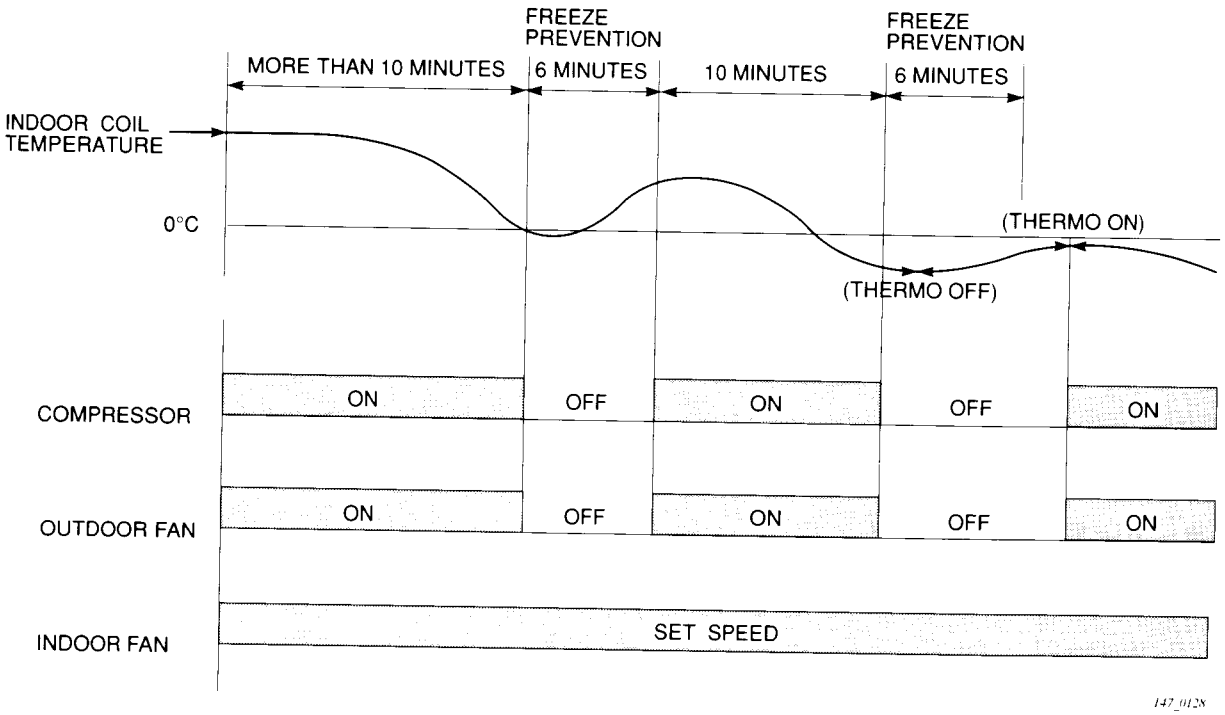


Fig. 5

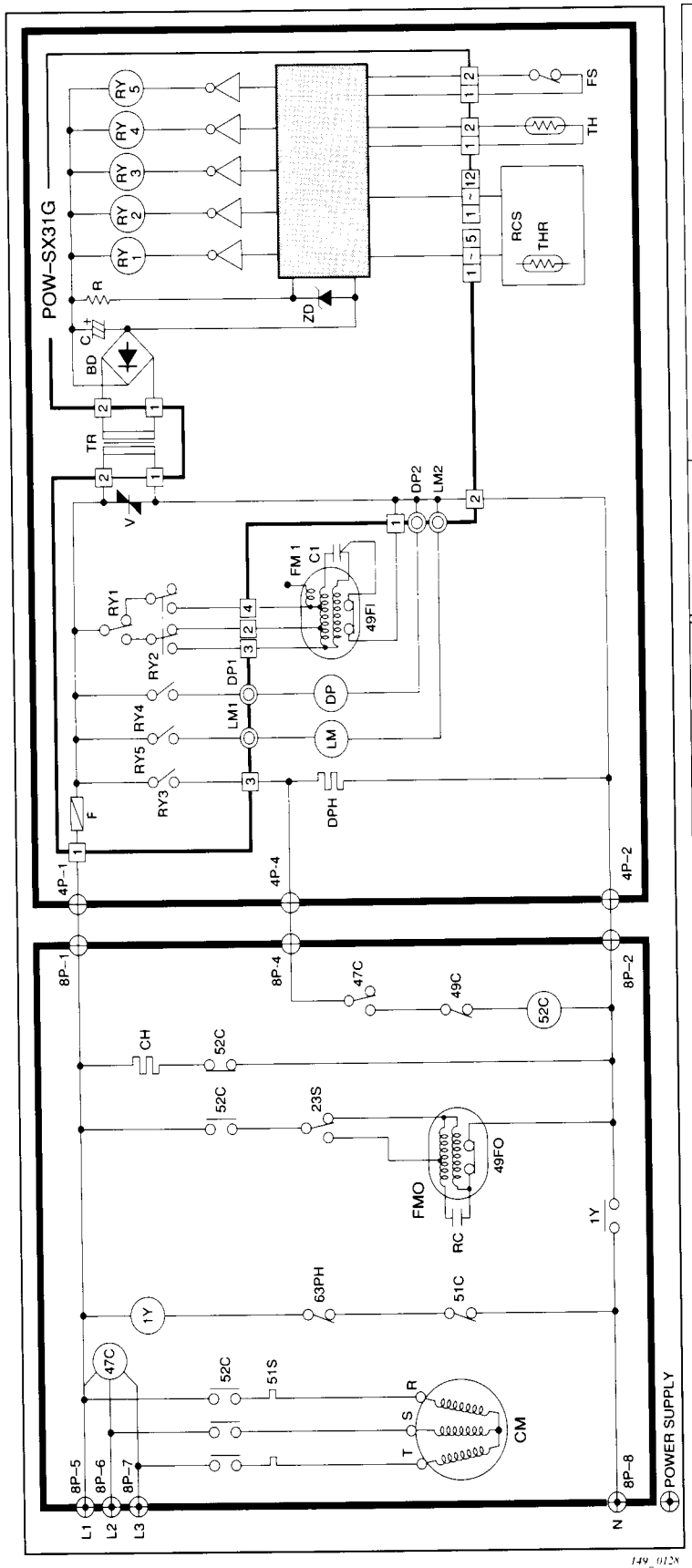
2

Chart Explanations and notes

- This chart shows when the **electronic refrigerant control valve** opens to regulate the temperature of the indoor unit coil to prevent freezing.
- Freeze prevention is controlled by the temperature of the indoor heat exchanger coil as sensed by either sensor **E1** (located at the entrance of the coil) or sensor **E2** (located in the middle of the coil). Whichever sensor has the lower temperature controls the freeze prevention cycle.
- When the coil temperature falls below 2°C, the electronic refrigerant control valve opens in 5 intervals at 30 steps/30seconds until the temperature reaches 3°C.
- If the refrigerant control is not effective and the temperature continues to drop and stays below 0°C for 2 minutes consecutively, the control circuit stops the compressor. The compressor does not start again until the temperature rises above 3°C.
  The minimum time the compressor stops for is 3 minutes.
- The Freeze Prevention function does not become active until 8 minutes after the compressor starts.

3-1 Schematic Diagram

(a) SPW-X252G5/SPW-C251G8



SYMBOLS	DESCRIPTION
OUTDOOR UNIT	
47C	NEGATIVE PHASE RELAY
51 C	COMPRESSOR MOTOR OVERCURRENT RELAY
CM	COMPRESSOR MOTOR
1Y	AUXILIARY RELAY
63PH	HIGH PRESSURE SWITCH
23S	FAN SPEED CONTROL THERMOSTAT
FMO	OUTDOOR FAN MOTOR
49FO	OUTDOOR FAN MOTOR THERMAL PROTECTOR
RC	CAPACITOR
CH	CRANK CASE HEATER
49C	COMPRESSOR MOTOR THERMAL PROTECTOR
52C	COMPRESSOR MOTOR MAGNETIC CONTACTOR

SYMBOLS	DESCRIPTION
INDOOR UNIT	
DPH	DEW PROOF HEATER
LM	LOUVER MOTOR
DP	DRAIN PUMP
FMI	INDOOR FAN MOTOR
49FI	INDOOR FAN MOTOR THERMAL PROTECTOR
C1	RUNNING CAPACITOR
TR	POWER TRANSFORMER
FS	FLOAT SWITCH
TH	THERMISTOR (INDOOR COIL)
RCS	REMOTE CONTROL UNIT RCS-31G (W)
THR	ROOM THERMISTOR
POW-SX31G	CONTROLLER P.C.B. ASS'Y
F	FUSE 250 V 3A
RY1, 2, 3, 4, 5	AUXILIARY RELAY

Fig. 8

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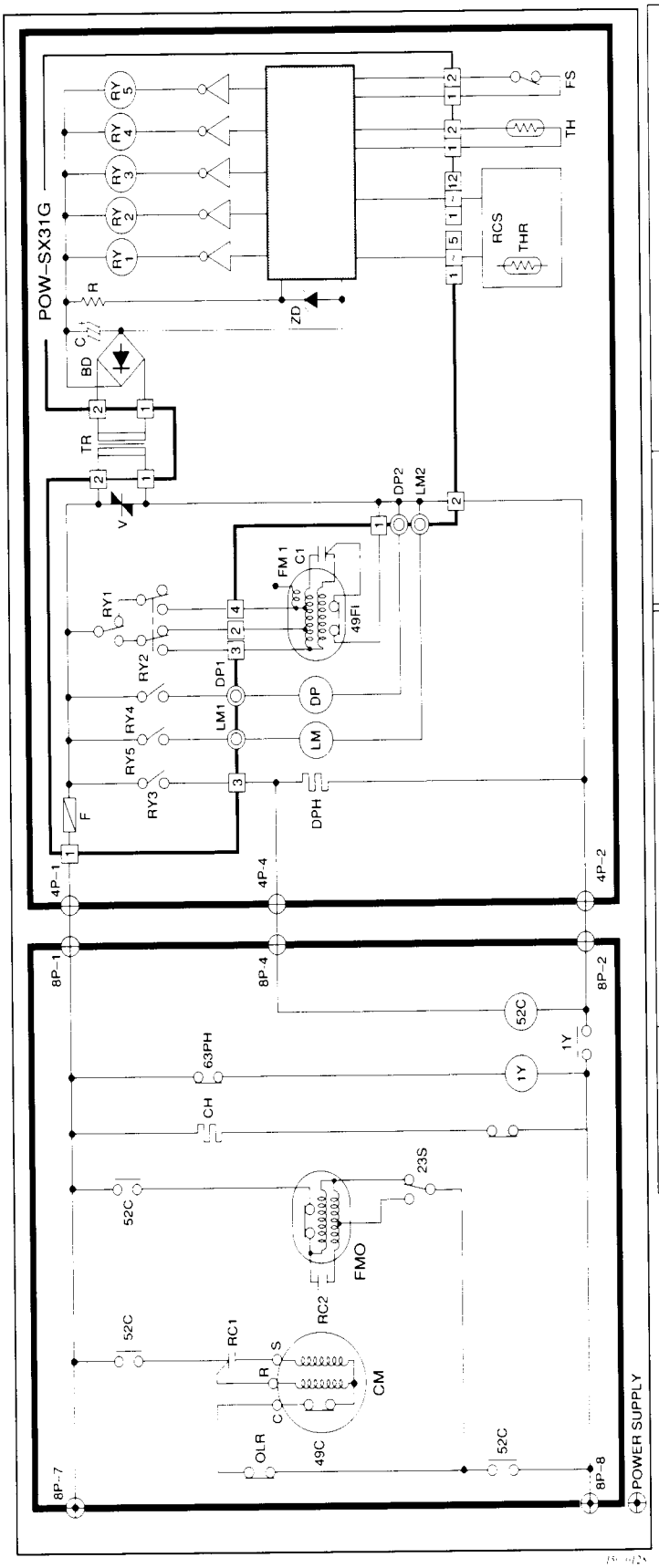
(b) SPW-X252G5/SPW-C251G5



SYMBOLS	DESCRIPTION
OUTDOOR UNIT	
OLR	OVERLOAD RELAY
CM	COMPRESSOR MOTOR
49C	CM INTERNAL OVERLOAD PROTECTOR
RC1	CAPACITOR
FMO	OUTDOOR FAN MOTOR
49FO	FMO INTERNAL OVERLOAD PROTECTOR
RC2	CAPACITOR
23S	THERMOSTAT
CH	CRANK CASE HEATER
63PH	HIGH PRESSURE SWITCH
1Y	RELAY
52C	MAGNETIC CONTACTOR

SYMBOLS	DESCRIPTION
INDOOR UNIT	
DPH	DEW PROOF HEATER
LM	LOUVER MOTOR
DP	DRAIN PUMP
FMI	INDOOR FAN MOTOR
49FI	INDOOR FAN MOTOR THERMAL PROTECTOR
C1	RUNNING CAPACITOR
TR	POWER TRANSFORMER
FS	FLOAT SWITCH
TH	THERMISTOR (INDOOR COIL)
RCS	REMOTE CONTROL UNIT RCS-31G (W)
THR	ROOM THERMISTOR
POW-SX31G	CONTROLLER PCB ASS'Y
F	FUSE 250 V 3A
RY1, 2, 3, 4, 5	AUXILIARY RELAY

Fig. 9

3-2 Electric Wiring Diagram

(a) SPW-X252G5 / SPW-C251G8

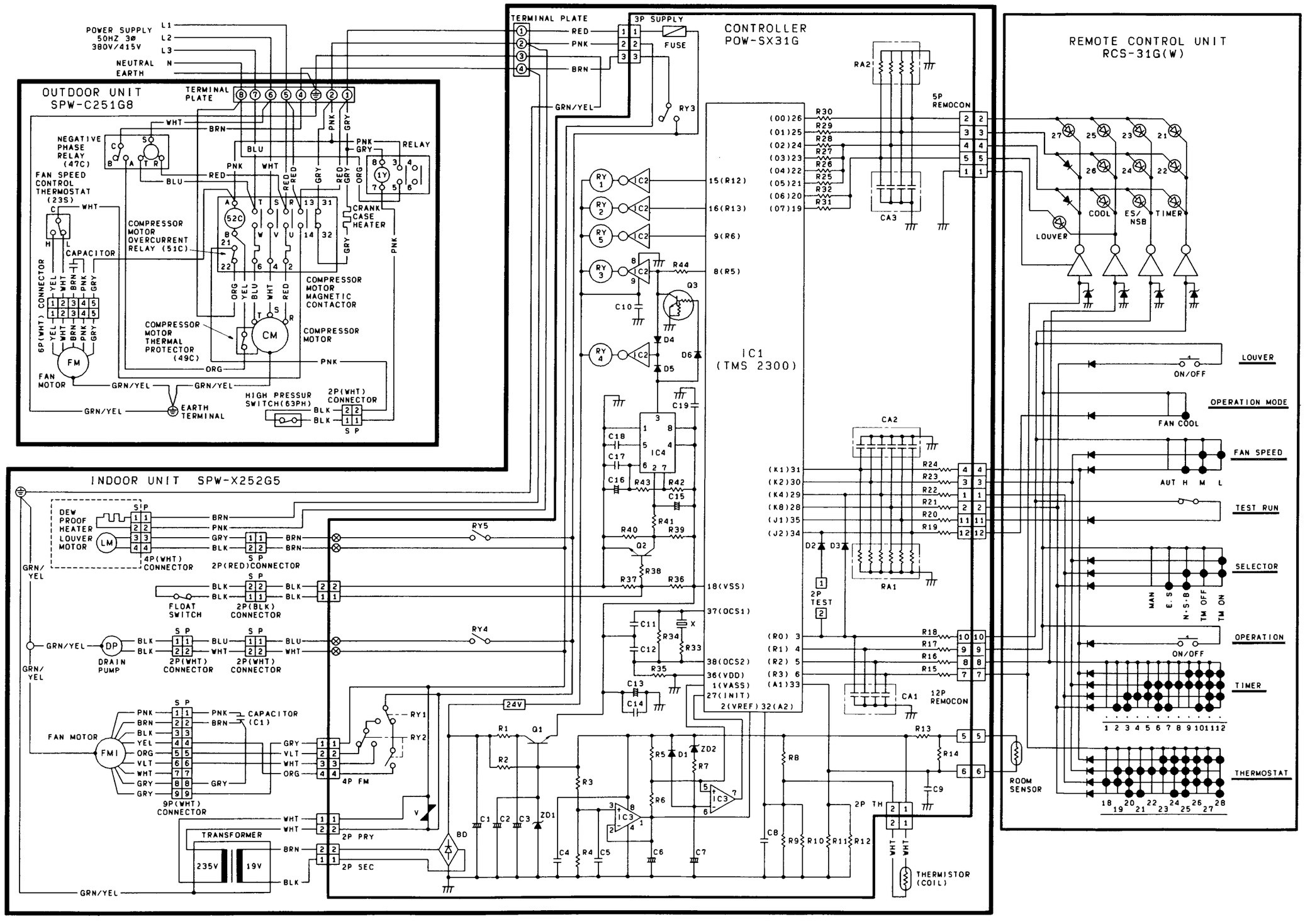


Fig. 10

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(b) SPW-X252G5 / SPW-C251G5

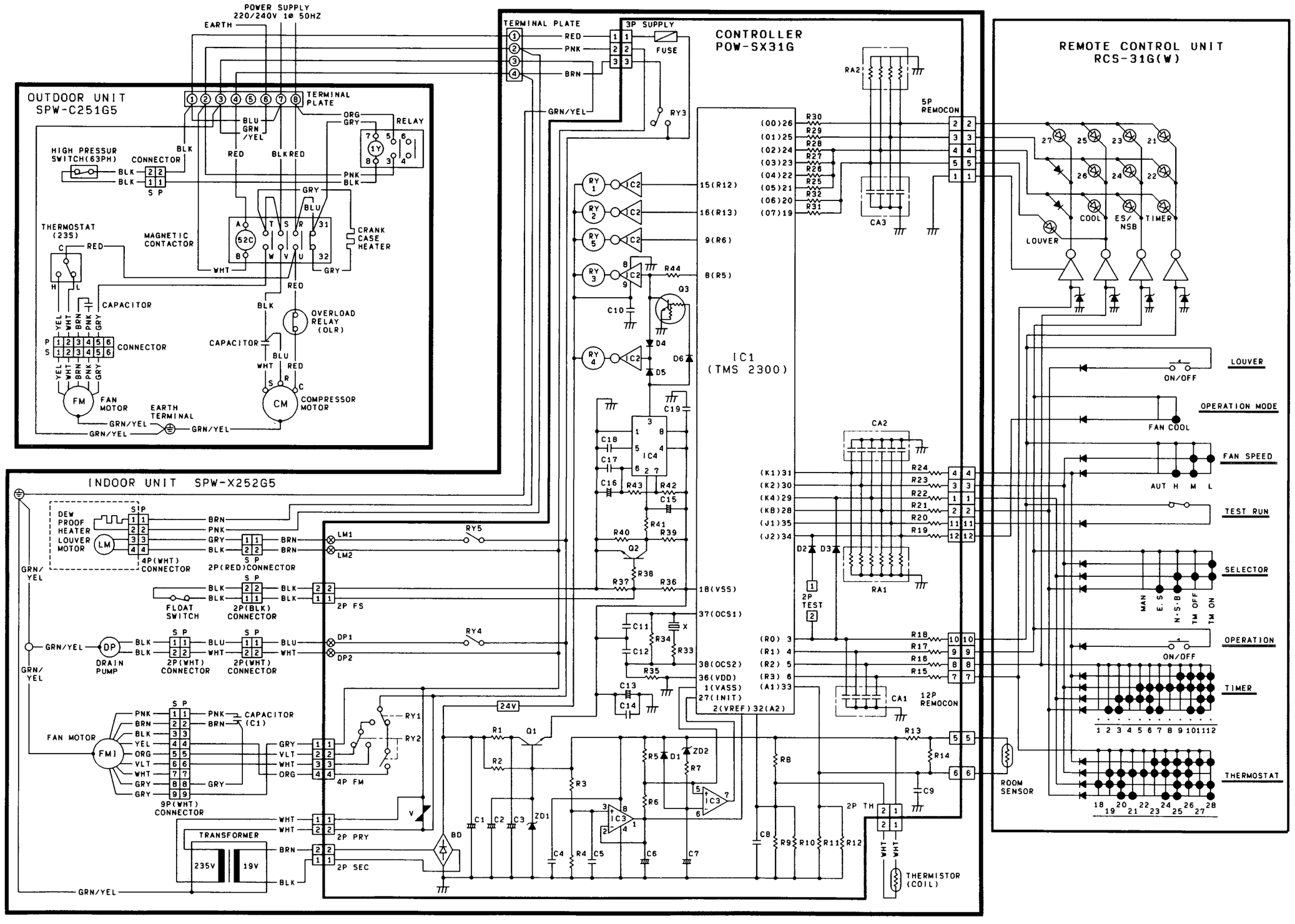


Fig. 11

SM700128

3-3 Indoor Unit P.C.B. Ass'y Component List (POW-SX31G)

SYMBOLS	DESCRIPTION	SPECIFICATIONS
R1	RESISTOR	100Ω 1W ±5%
R2	RESISTOR	1.5K 1W ±5%
R3	RESISTOR	30K 1/4W ±1%
R4	RESISTOR	56K 1/4W ±1%
R5	RESISTOR	1.5K 1/4W ±1%
R6	RESISTOR	1.3K 1/4W ±1%
R7	RESISTOR	56K 1/4W ±5%
R8	RESISTOR	110K 1/4W ±1%
R9	RESISTOR	200K 1/4W ±1%
R10	RESISTOR	510K 1/4W ±1%
R11	RESISTOR	15K 1/4W ±1%
R12	RESISTOR	22K 1/4W ±1%
R13	RESISTOR	180Ω 1/4W ±1%
R14	RESISTOR	7.5K 1/4W ±5%
R15	RESISTOR	240Ω 1/4W ±5%
R16	RESISTOR	240Ω 1/4W ±5%
R17	RESISTOR	240Ω 1/4W ±5%
R18	RESISTOR	240Ω 1/4W ±5%
R19	RESISTOR	470Ω 1/4W ±5%
R20	RESISTOR	470Ω 1/4W ±5%
R21	RESISTOR	470Ω 1/4W ±5%
R22	RESISTOR	470Ω 1/4W ±5%
R23	RESISTOR	470Ω 1/4W ±5%
R24	RESISTOR	470Ω 1/4W ±5%
R25	RESISTOR	390Ω 1/4W ±5%
R26	RESISTOR	390Ω 1/4W ±5%
R27	RESISTOR	390Ω 1/4W ±5%
R28	RESISTOR	390Ω 1/4W ±5%
R29	RESISTOR	270Ω 1/4W ±5%
R30	RESISTOR	270Ω 1/4W ±5%
R31	RESISTOR	390Ω 1/4W ±5%
R32	RESISTOR	390Ω 1/4W ±5%
R33	RESISTOR	100Ω 1/4W ±1%
R34	RESISTOR	56K 1/4W ±1%
R35	RESISTOR	3.3K 1/4W ±1%
R36	RESISTOR	3.3K 1/4W ±5%
R37	RESISTOR	2.2K 1/4W ±5%
R38	RESISTOR	2.2K 1/4W ±5%
R39	RESISTOR	5.6K 1/4W ±5%
R40	RESISTOR	100K 1/4W ±5%
R41	RESISTOR	2.2K 1/4W ±5%
R42	RESISTOR	620K 1/4W ±5%
R43	RESISTOR	470Ω 1/4W ±5%
R44	RESISTOR	1.0K 1/4W ±5%
C1	CAPACITOR	470μF 50V
C2	CAPACITOR	10μF 50V
C3	CAPACITOR	22μF 50V
C4	CAPACITOR	223 50V
C5	CAPACITOR	223 50V
C6	CAPACITOR	1μF 50V
C7	CAPACITOR	10μF 50V
C8	CAPACITOR	223 50V
C9	CAPACITOR	104 50V
C10	CAPACITOR	223 50V

SYMBOLS	DESCRIPTION	SPECIFICATIONS
C11	CAPACITOR	270PF±10% 50V
C12	CAPACITOR	100PF±10% 50V
C13	CAPACITOR	22μF 16V
C14	CAPACITOR	427 50V
C15	CAPACITOR	1μF 50V
C16	CAPACITOR	1000μF 50V
C17	CAPACITOR	223 50V
C18	CAPACITOR	104 50V
C19	CAPACITOR	223 50V
RA1	RESISTOR ARAY	56K 6BIT
RA2	RESISTOR ARAY	10K 4BIT
CA1	CAPACITOR ARAY	472 4BIT
CA2	CAPACITOR ARAY	472 6BIT
CA3	CAPACITOR ARAY	102 4BIT
BD	BRIDGE DIODE	DBA10C
ZD1	ZENER DIODE	GZB9.1B
ZD2	ZENER DIODE	GZA2.4X
D1	DIODE	DS442X
D2	DIODE	DS442X
D3	DIODE	DS442X
D4	DIODE	DS442X
D5	DIODE	DS442X
D6	DIODE	DS442X
IC1	IC	M52074RL
IC2	IC	LB 1234
IC3	IC	LA 6458D
IC4	IC	HA 17555PS
Q1	TRANSISTOR	2SD313EF
Q2	TRANSISTOR	2SC536EF
Q3	TRANSISTOR	2SC3402

SYMBOLS	DESCRIPTION
12P REMOCON	SMK W-P5112
5P REMOCON	SMK W-P5105
4P FM	2-173270-4
3P SUPPLY	2-173270-3
2P PRY	8-173270-2
2P SEC	5273-02A
2P TH	5273-02A-RE
2P FS	5273-02A-GR
2P TEST	171825-2
RY1	RELAY MC24D2-0 DC24V
RY2	RELAY VB24TBU DC24V
RY3	RELAY LZG-24HE DC24V
RY4	RELAY LZG-24HE DC24V
RY5	RELAY LZG-24HE DC24V
FUSE	FUSE 250V 3A UL
X	CERAMIC OSCILLATOR
V	VARAITOR SNRA420K-UL

4. SERVICE PROCEDURES

4-1 Trobleshooting

(1) Check before and after Troubleshooting

Many problems may happen because of wiring or power supply problems, so you should check these areas first. Problems here can cause false results in some of the other tests, and so should be corrected first.

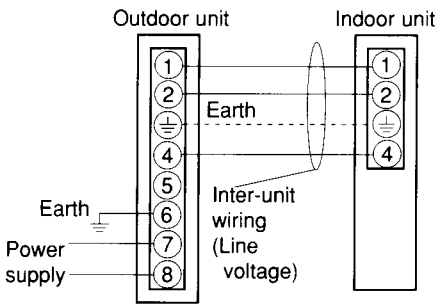
①. Check power supply wiring

❑ Check that power supply wires are correctly connected to terminal No. 1 through No. 4 on the 6P terminal plate in the indoor unit and No.5 through No.8 on the 8P terminal in the outdoor unit.

②. Check inter-unit wiring

❑ Check that inter-unit control wiring (DC low voltage) is correctly connected between the indoor unit and outdoor unit.

SPW-C251G5—SPW-X252G5



SPW-X252G5—SPW-C251G8

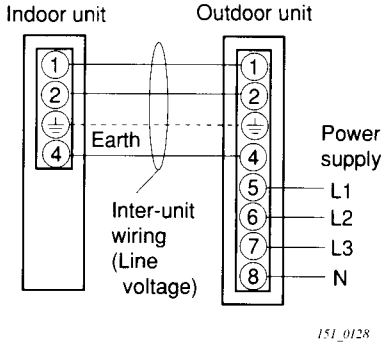


Fig. 12

③. Check power supply

❑ Check that voltage is within the specified range (±10% of the rating).
❑ Check that power is being supplied.

WARNING

If the following troubleshooting must be done with power being supplied, be careful about any uninsulated live part that can cause ELECTRIC SHOCK.

④. Check the lead wires and connectors in indoor and outdoor units.

❑ Check that the coating of lead wires is not damaged.
❑ Check that lead wires are firmly connected at the terminal plate.
❑ Check that wiring is correct.

⑤ Reference

- Condition of general cooling operation (Thermo. ON)
  SWEEP.....ON
  Indoor fan speed....HIGH

Outdoor unit: SPW-C251G5 Indoor unit: SPW-X252G5

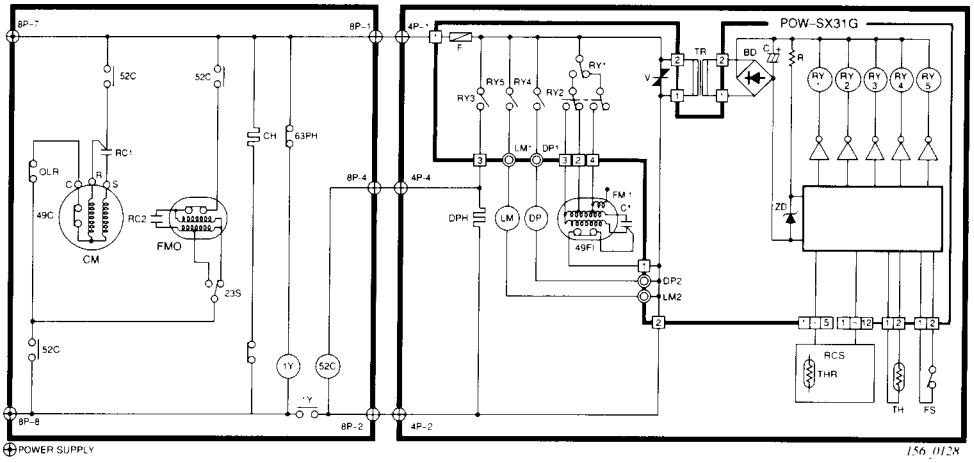


Fig. 13

Outdoor unit: SPW-C251G8 Indoor unit: SPW-X252G5

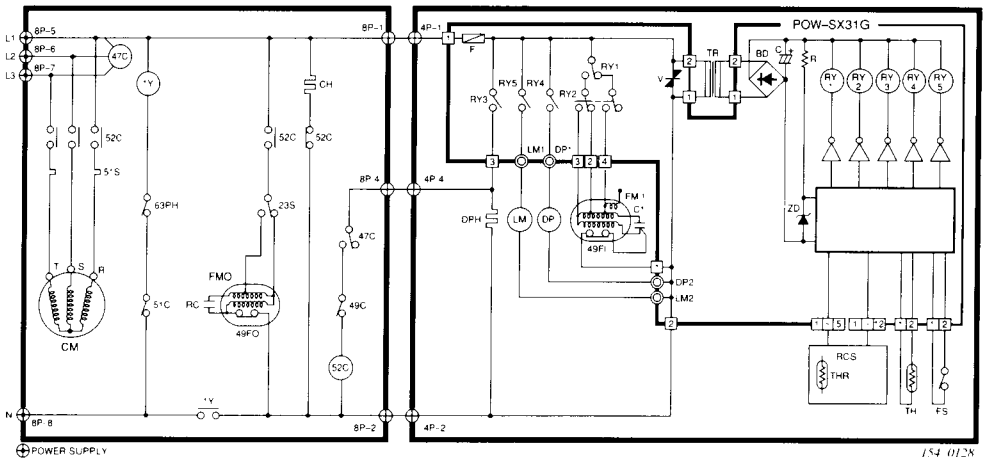


Fig. 14

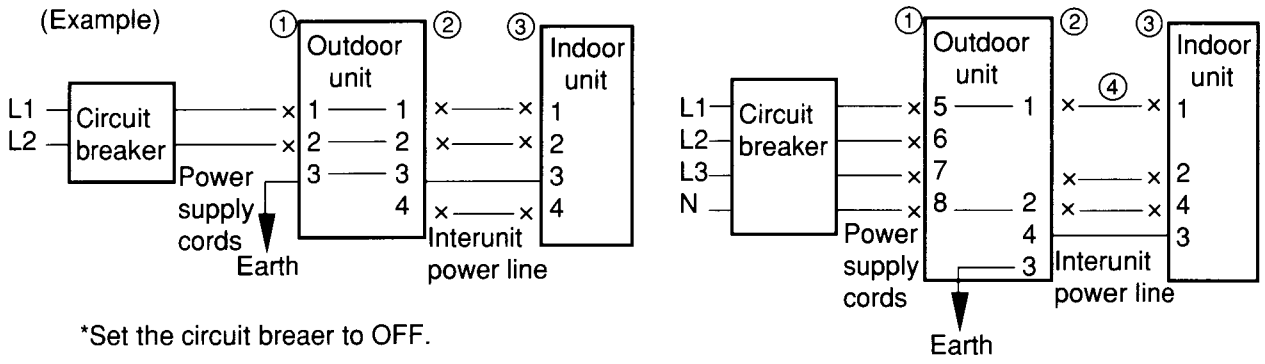
(2) Air conditioner does not operate

① Circuit breaker trips (or fuse blows).

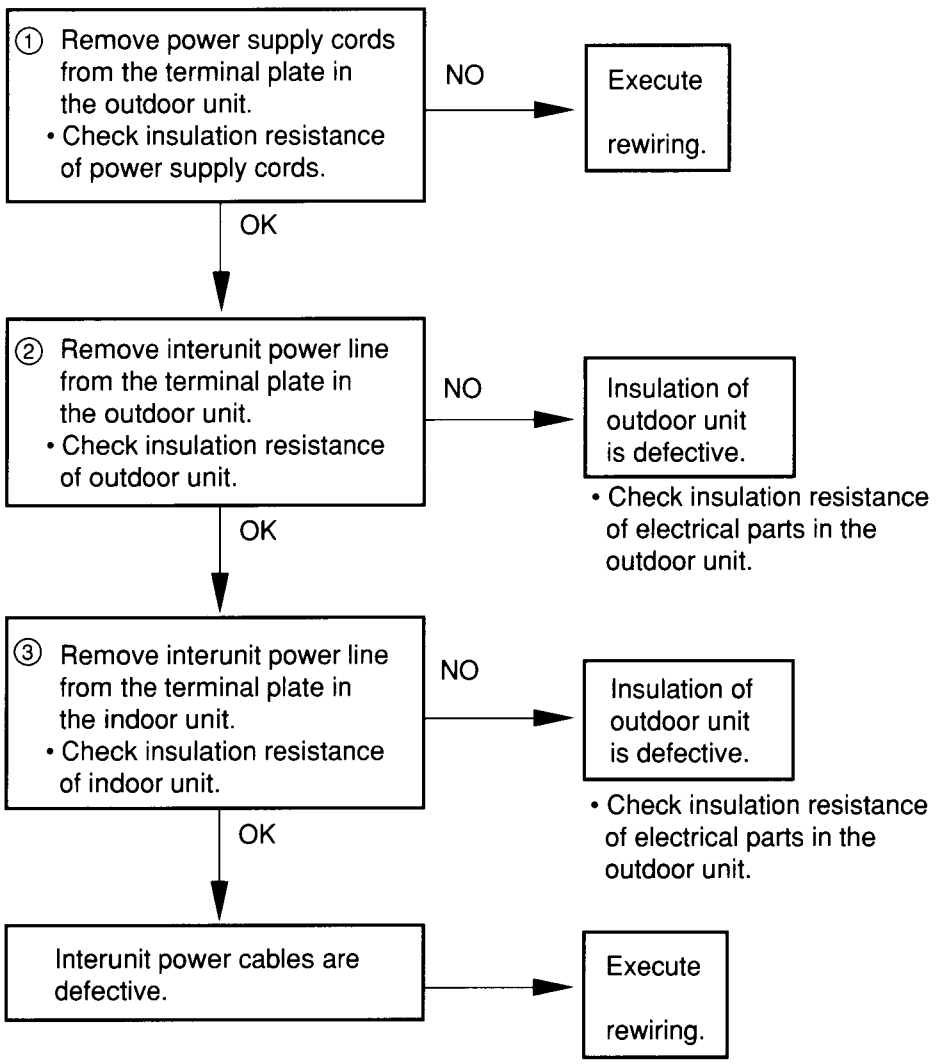
(a) When the circuit breaker is set to ON, it is tripped soon.

- There is a possibility of ground fault.
- Check insulation resistance.

  If resistance value is 1MΩ or less, it is a defect of insulation (NO).



*Set the circuit breaer to OFF.



158_0128

(b) Circuit breaker trips when the operation button is depressed.

- There is a possibility of short circuit.

Outdoor unit: SPW-C251G5 Indoor unit: SPW-X252G5

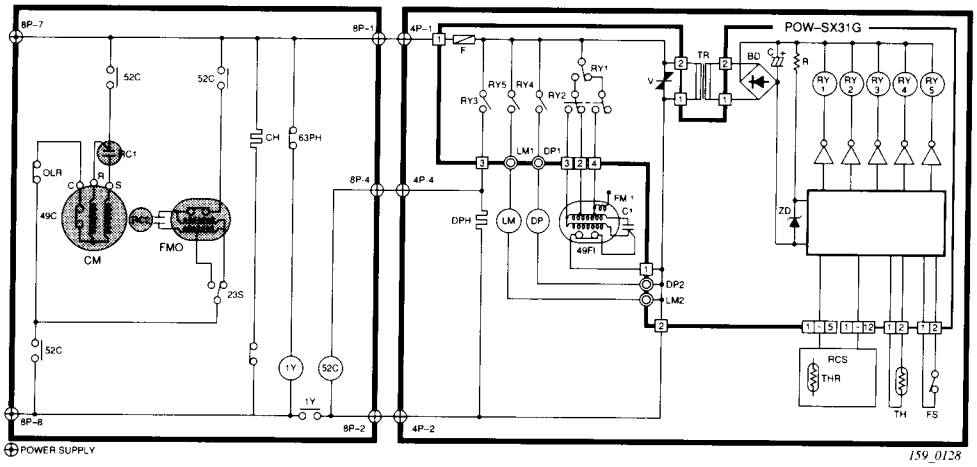


Fig. 15

Outdoor unit: SPW-C251G8 Indoor unit: SPW-X252G5

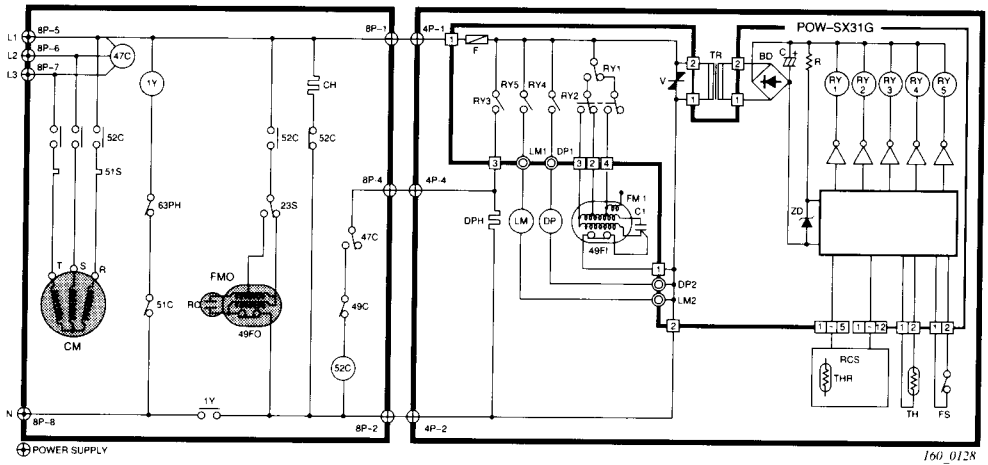
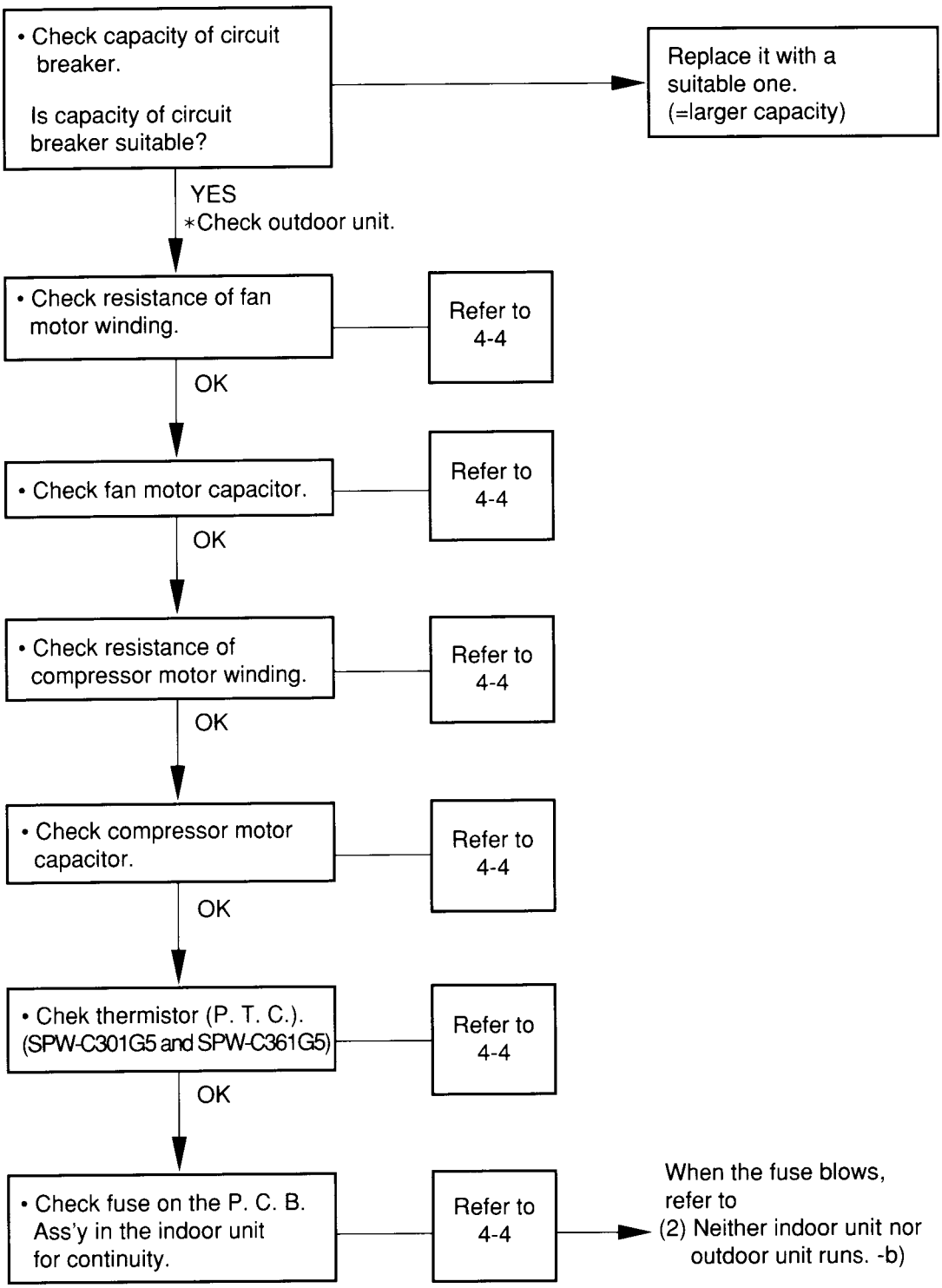


Fig. 16

(Circuit breaker trips when the operation button is depressed.)

* Set the circuit breaker to OFF.



NOTE:
In case of defect,
replace the respective part.

161_0128

② Neither indoor unit nor outdoor unit runs.

Outdoor unit: SPW-C251G5 Indoor unit: SPW-X252G5

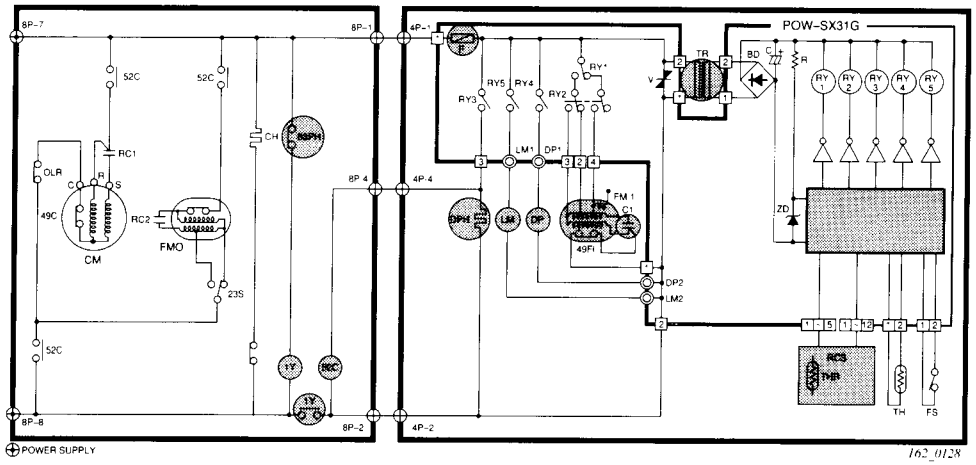


Fig. 17

Outdoor unit: SPW-C251G8 Indoor unit: SPW-X252G5

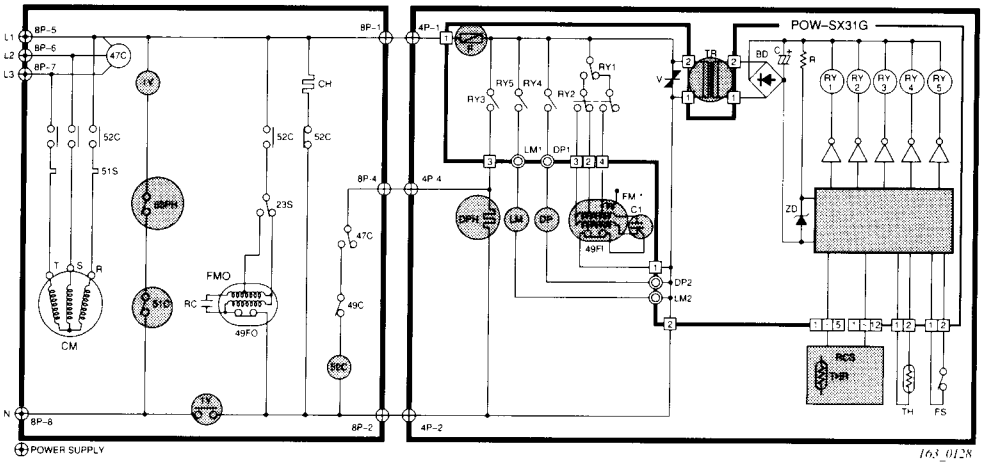
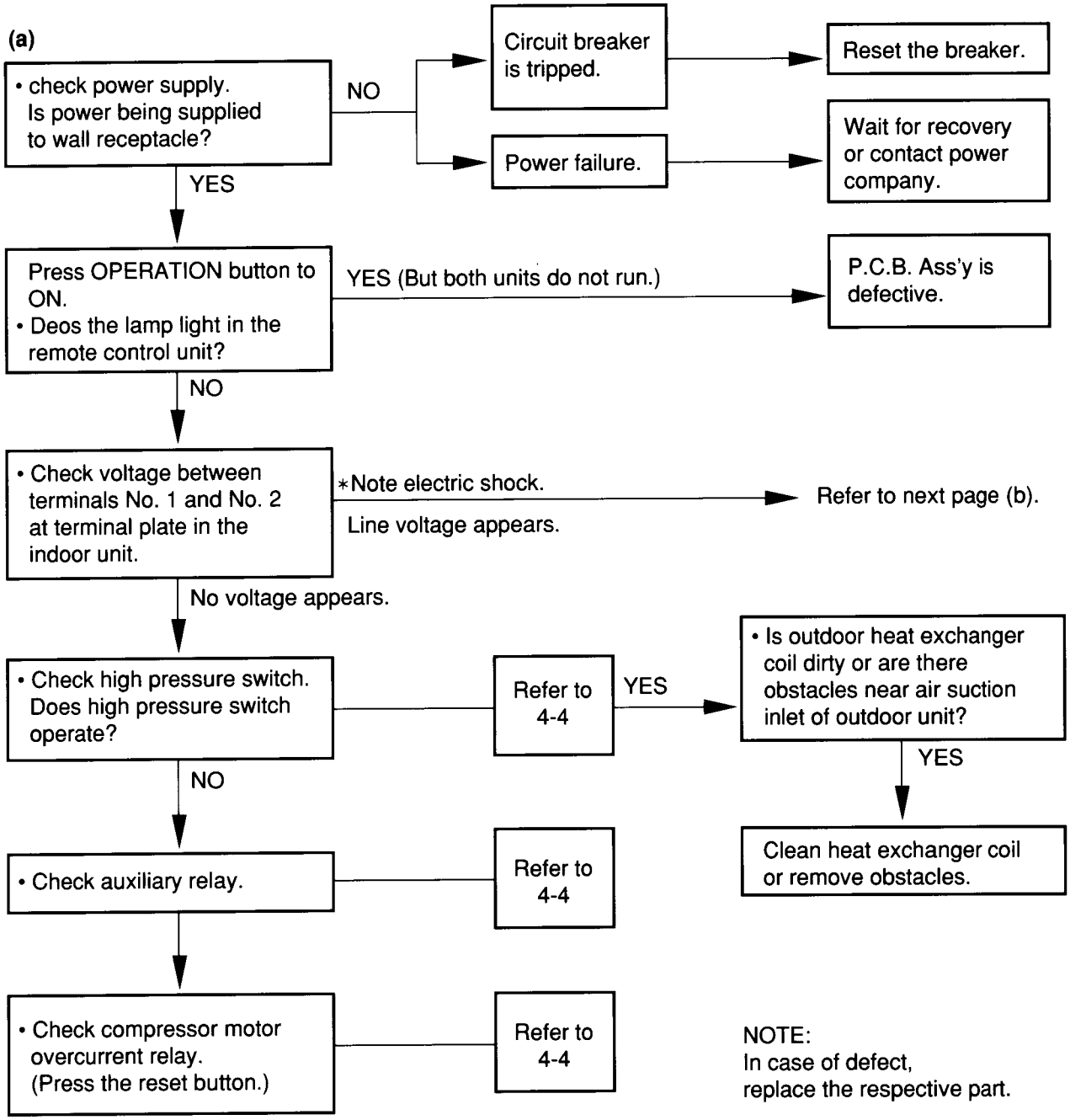


Fig. 18

4

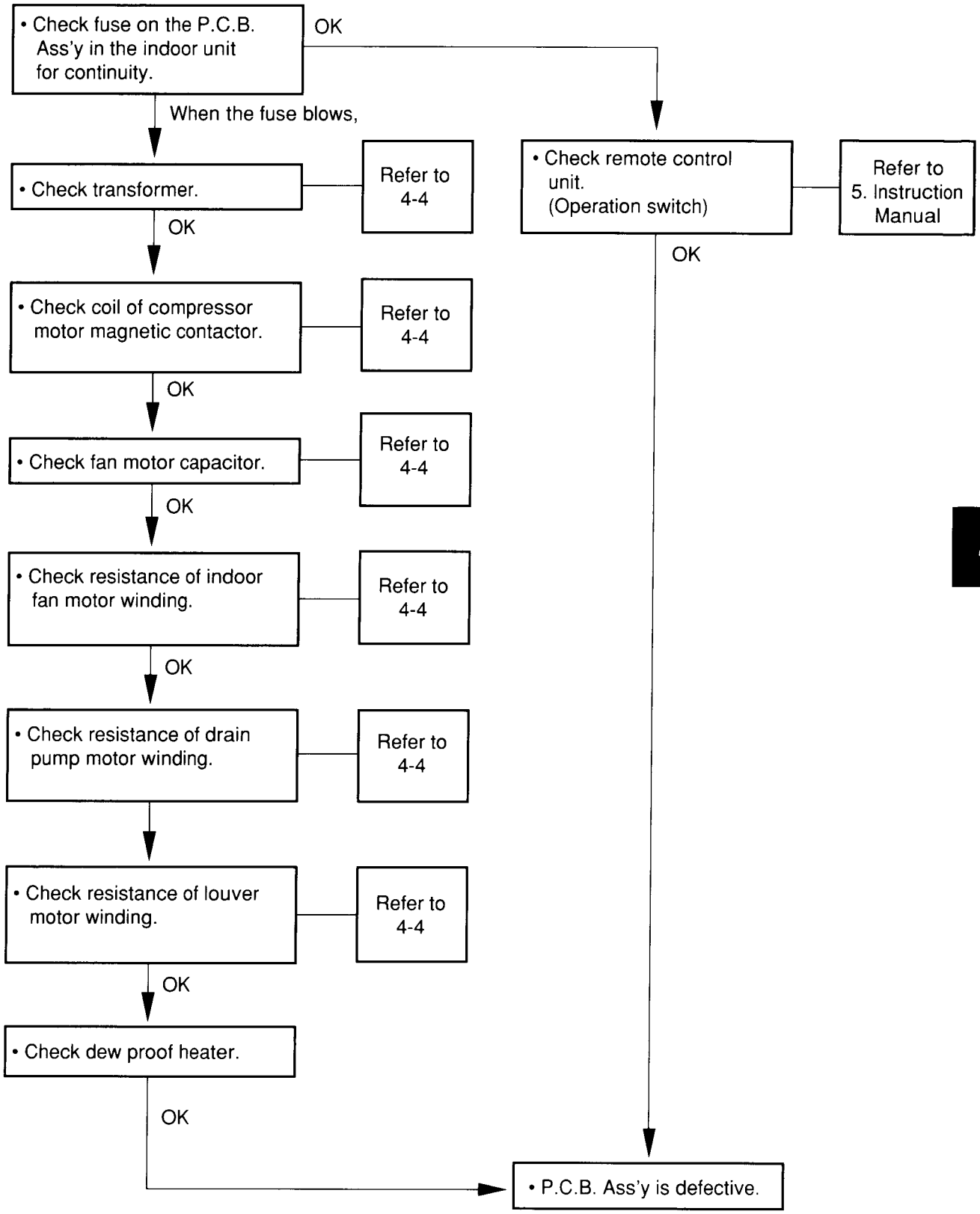
(Neither indoor unit nor outdoor unit runs.)

Following causes are considered.
- Power is not supplied.
- Remote control unit is defective.
- P.C.B. Ass'y is defective.
- Short circuit has occured and the fuse blows.



164_0128

(b)



NOTE:
In case of defect,
replace the respective part.

4

(3) Some part of air conditioner does not operate.

① Only indoor fan does not run.

Outdoor unit: SPW-C251G5 Indoor unit: SPW-X252G5

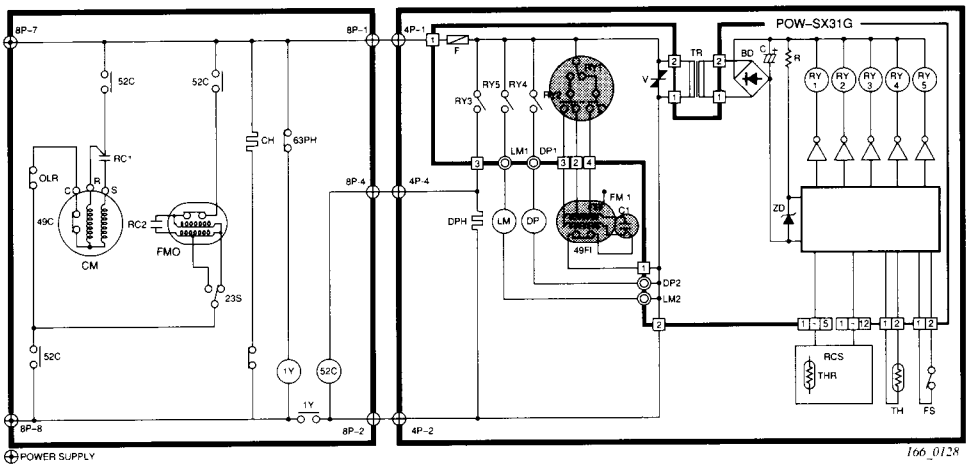


Fig. 19

Outdoor unit: SPW-C251G8 Indoor unit: SPW-X252G5

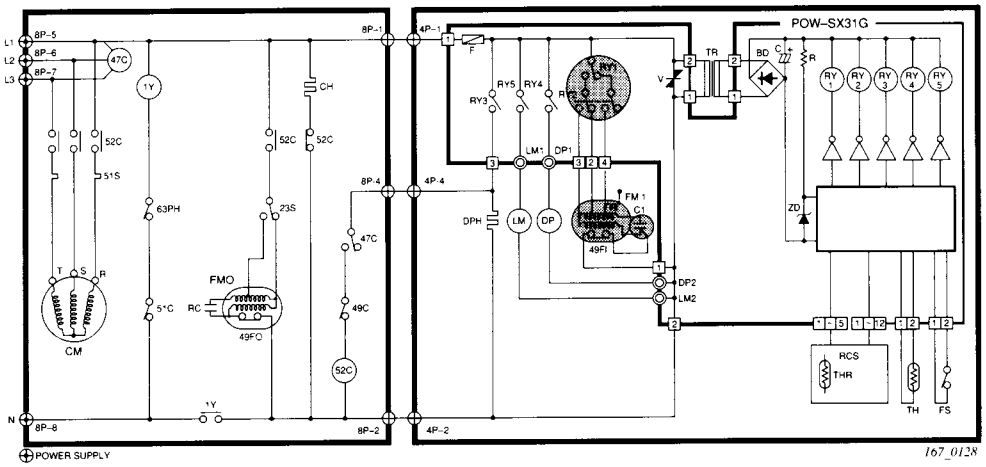
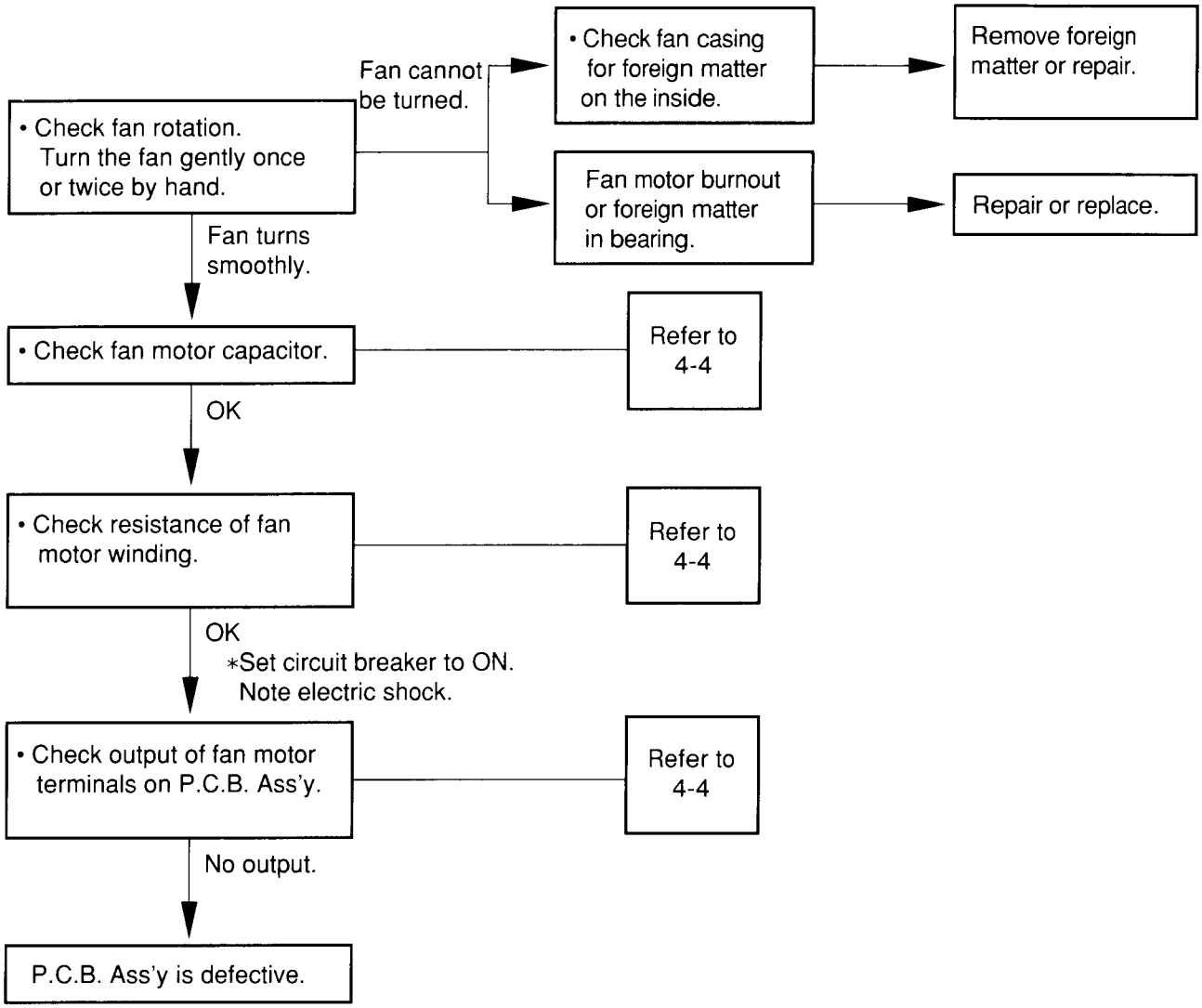


Fig. 20

(Only indoor fan does not run.)



NOTE:
In case of defect,
replace the respective part.

168_0128

4

② Neither outdoor fan nor compressor runs.

Outdoor unit: SPW-C251G5 Indoor unit: SPW-X252G5

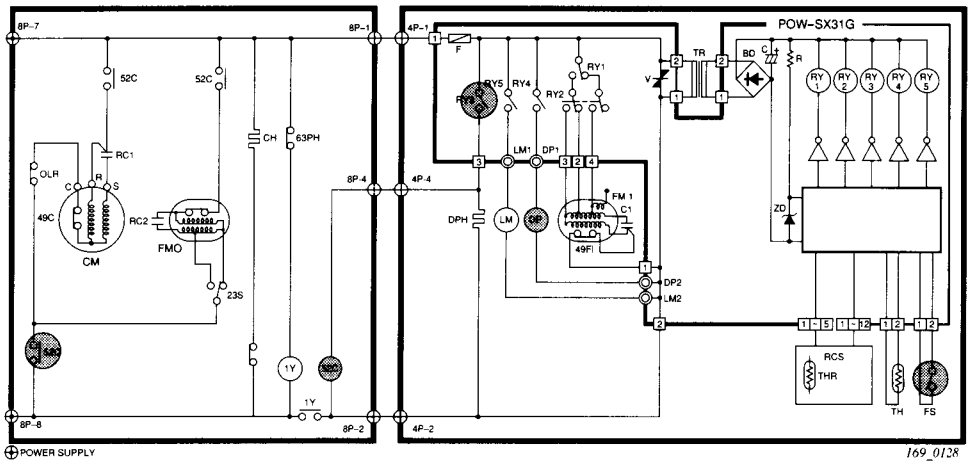


Fig. 21

Outdoor unit: SPW-C251G8 Indoor unit: SPW-X252G5

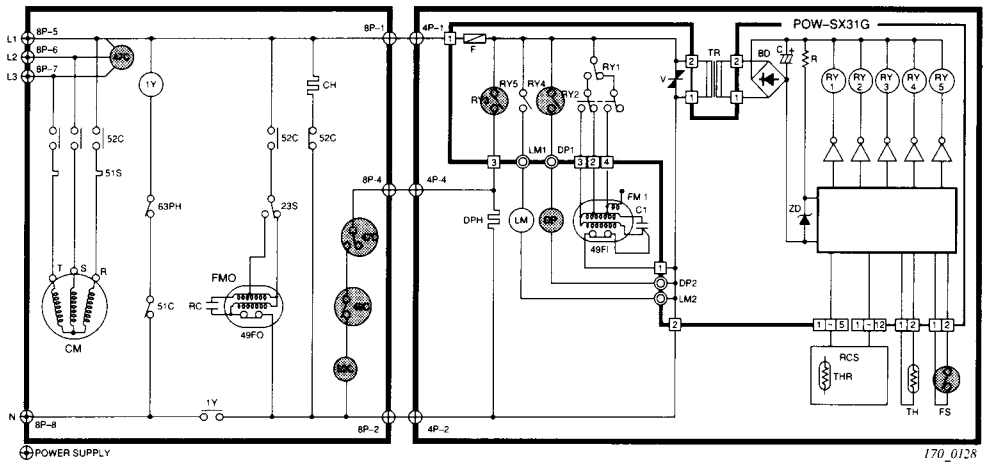


Fig. 22

Rewier the No. 5 and No. 7 terminals on the terminal plate.

↓

Set the circuit breaker to ON and press the OPERATION button.
But ou tdoor fan and compressor do not run.

↓

• Check negative phase relay. — Refer to 4-4

↓ OK

Press the push button of compressor motor magnetic contactor. Do outdoor fan and compressor run?

YES → • Check coil of compressor motor magnetic contactor

↓ NO

Compressor motor magnetic contactor is defective.

NO

→ Refer to " ③ Only outdoor fan does not run. "

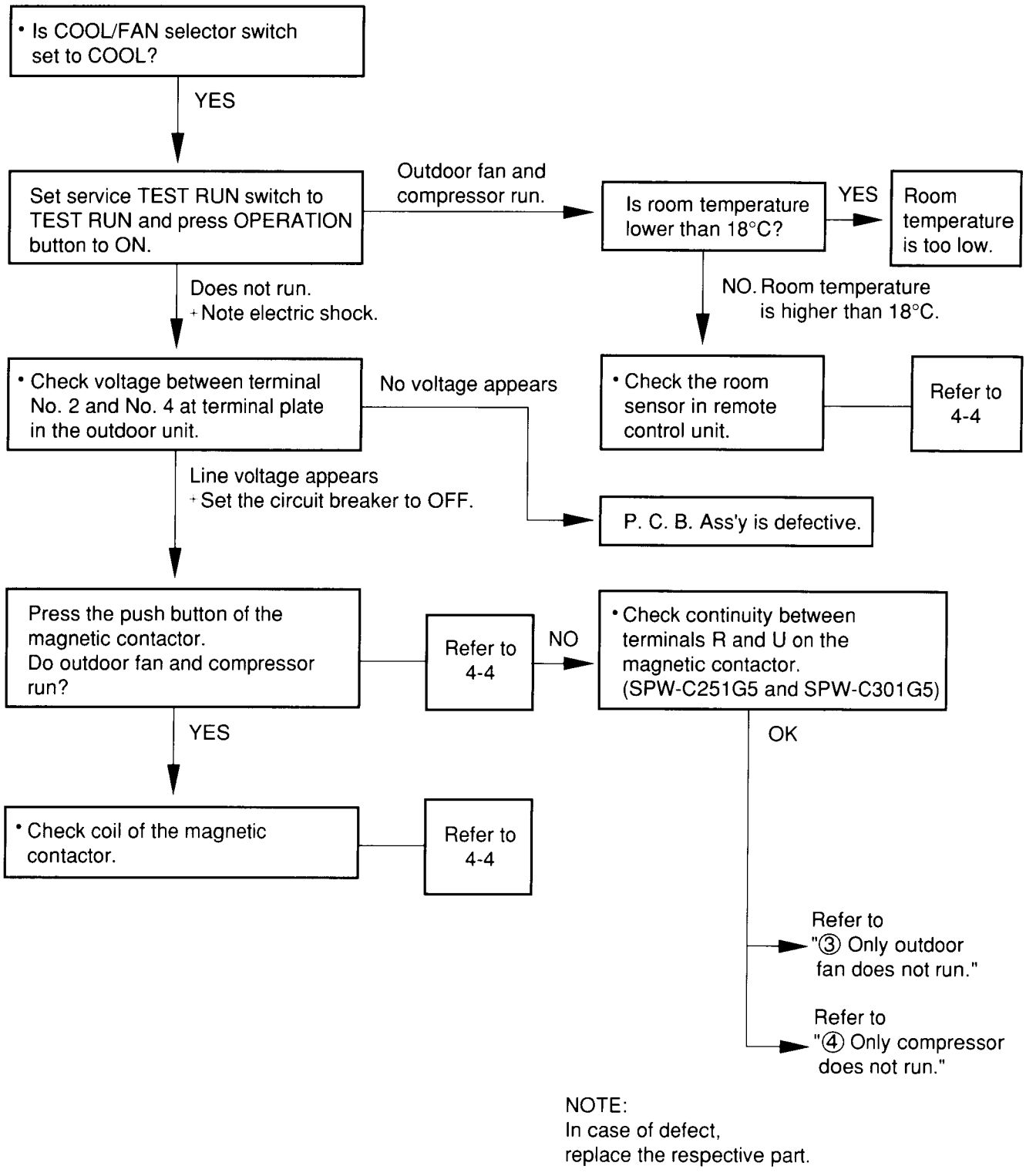
→ Refer to " ④ Only compressor does not run. "

Note:
In case of defect, replace the respective part.

(Neither outdoor fan nor compressor runs.)

Note: Check following points at first.

1. Is setting temperature of thermostat suitable?
2. Has 3 minutes timer operated? (No operation for 3 minutes after power ON.)
3. Has freeze prevention been operating? (Wait for about 6 minutes.)
4. Is operation mode cooling mode?
5. Has drain pump been operating? (Wait for about 12 minutes.)



NOTE:
In case of defect,
replace the respective part.

172_0128

③ Only outdoor fan does not run.

Outdoor unit: SPW-C251G5 Indoor unit: SPW-X252G5

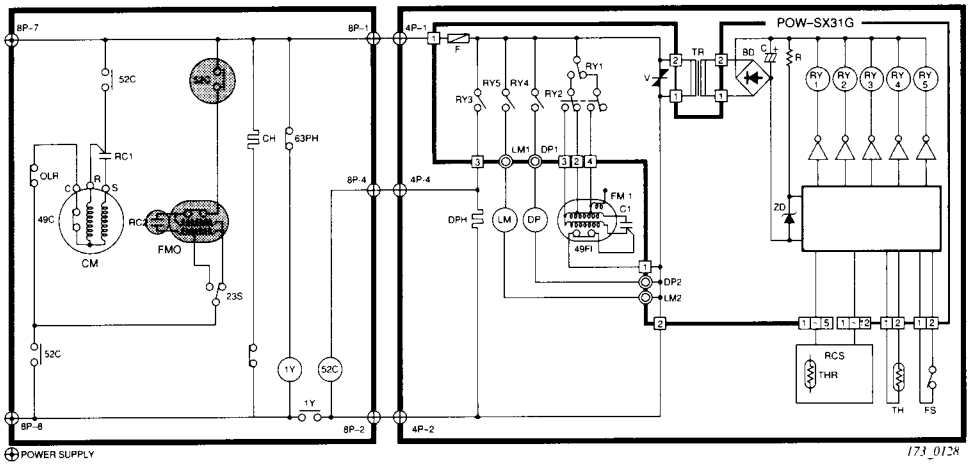


Fig. 23

Outdoor unit: SPW-C251G8 Indoor unit: SPW-X252G5

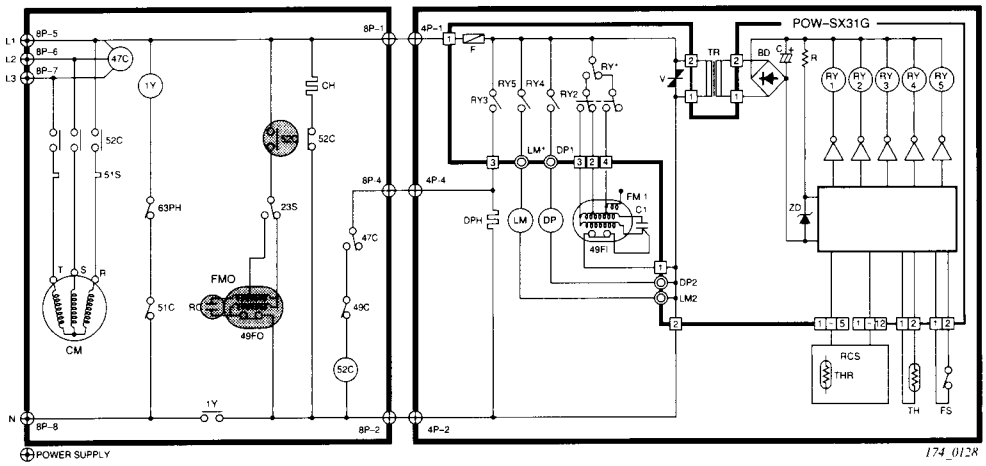
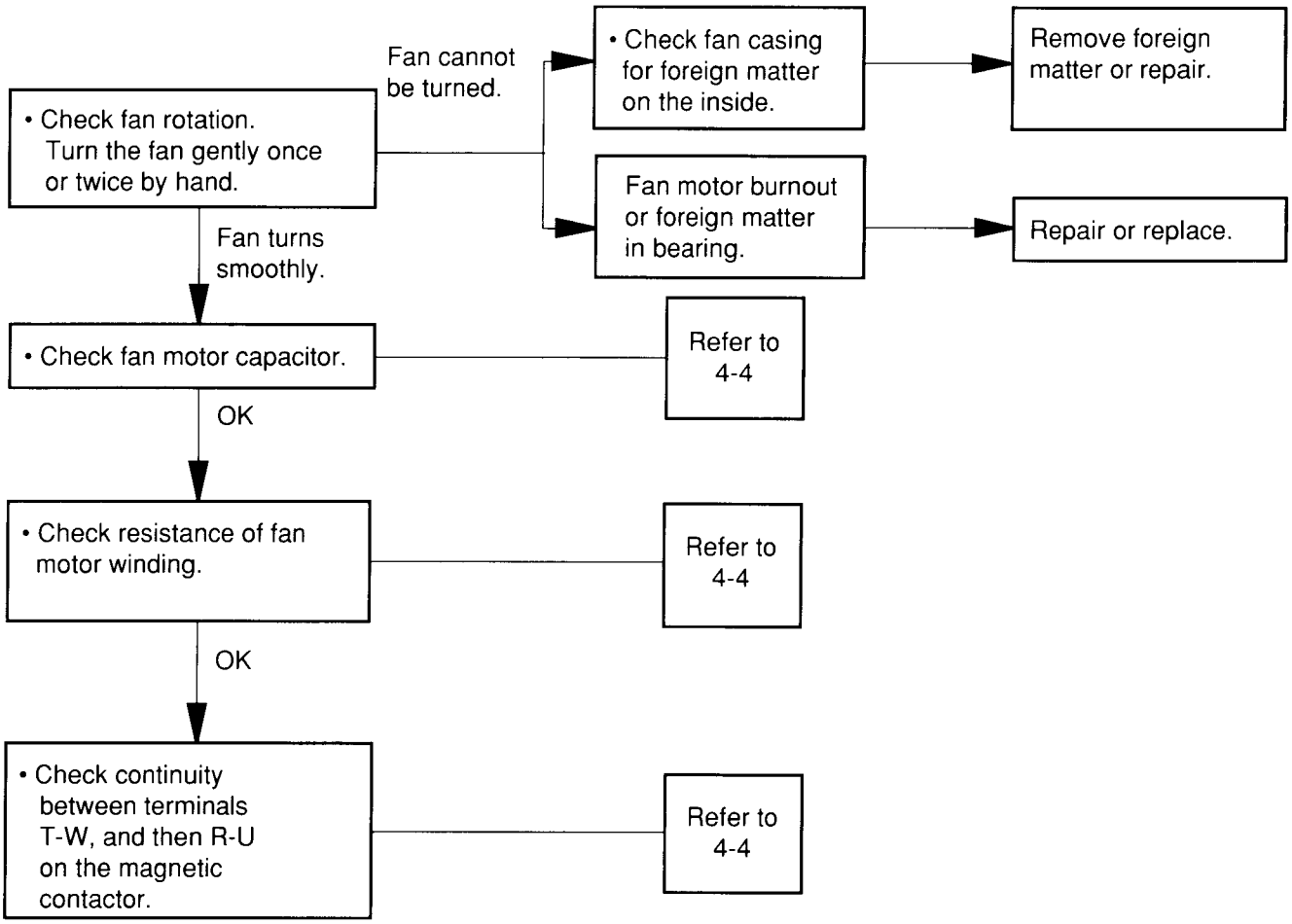


Fig. 24

(Only outdoor fan does not run.)



NOTE:
In case of defect,
replace the respective part.

244_0128

4

④ Only compressor does not run.

Outdoor unit: SPW-C251G5 Indoor unit: SPW-X252G5

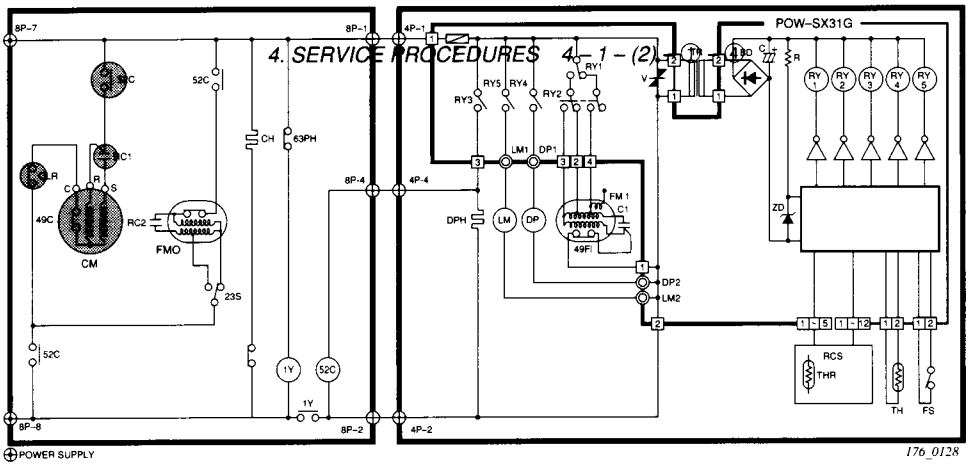


Fig. 25

Outdoor unit: SPW-C251G8 Indoor unit: SPW-X252G5

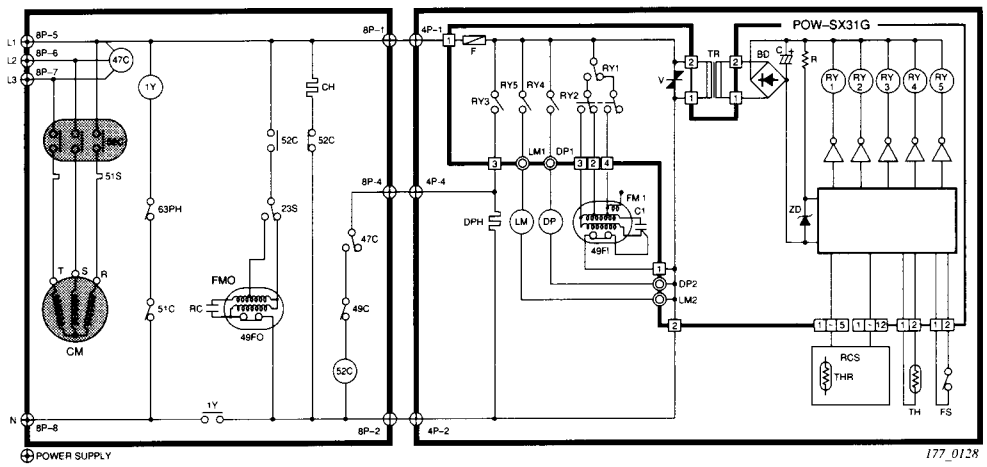
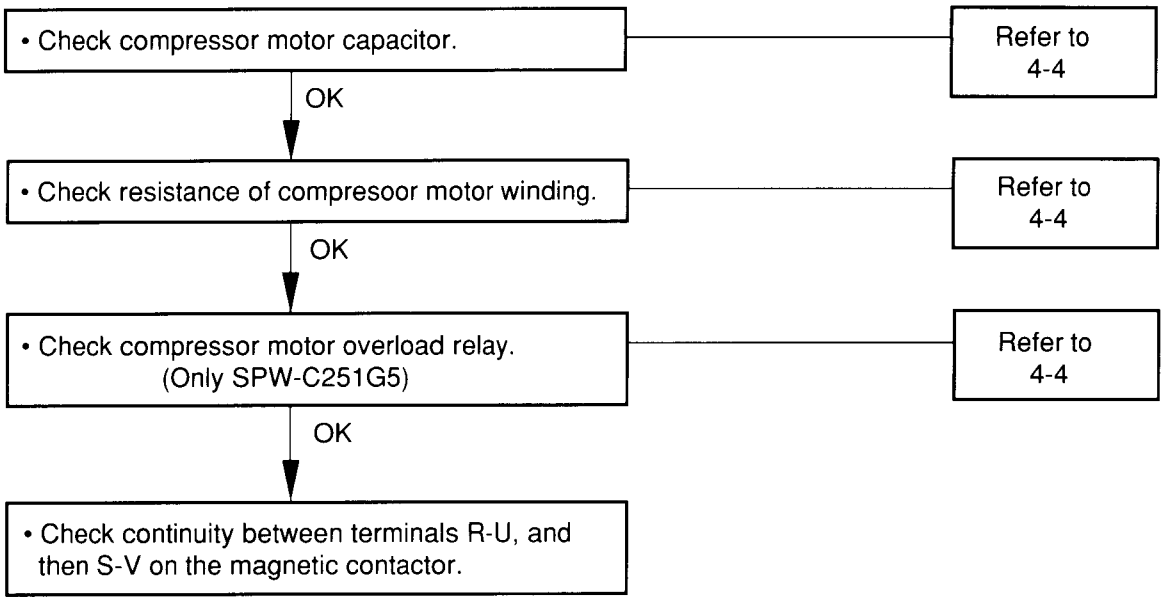
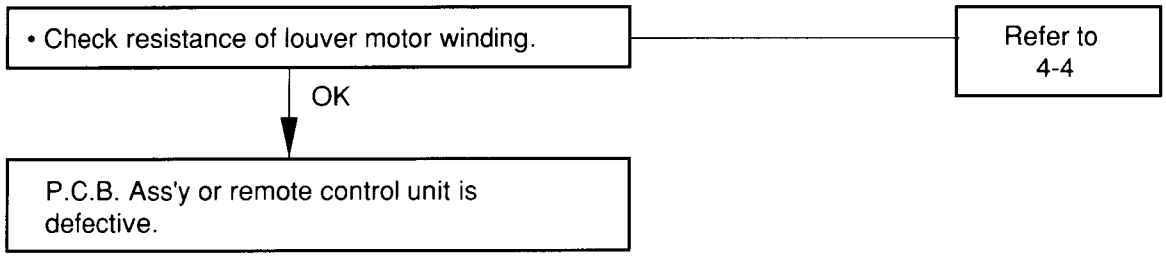


Fig. 26

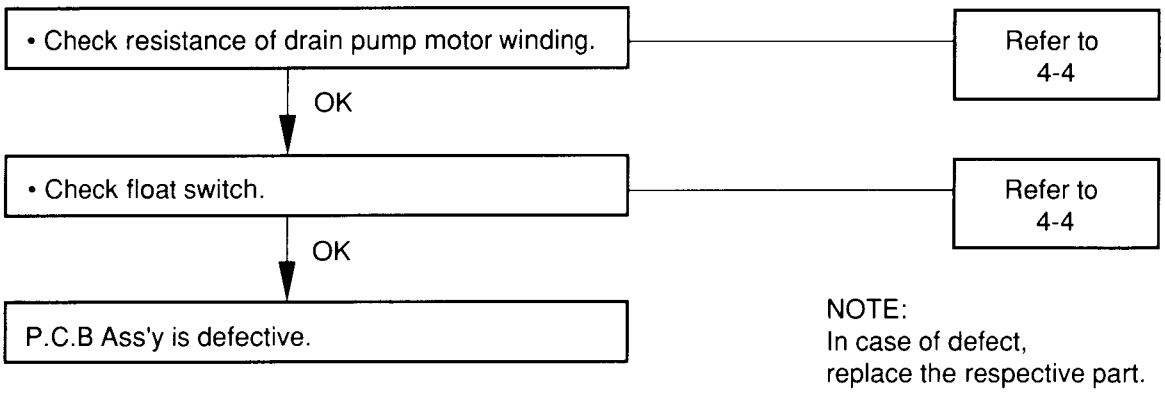
(Only compressor does not run.)



⑤ Only louver motor does not run.



⑥ Only drain pump does not run.



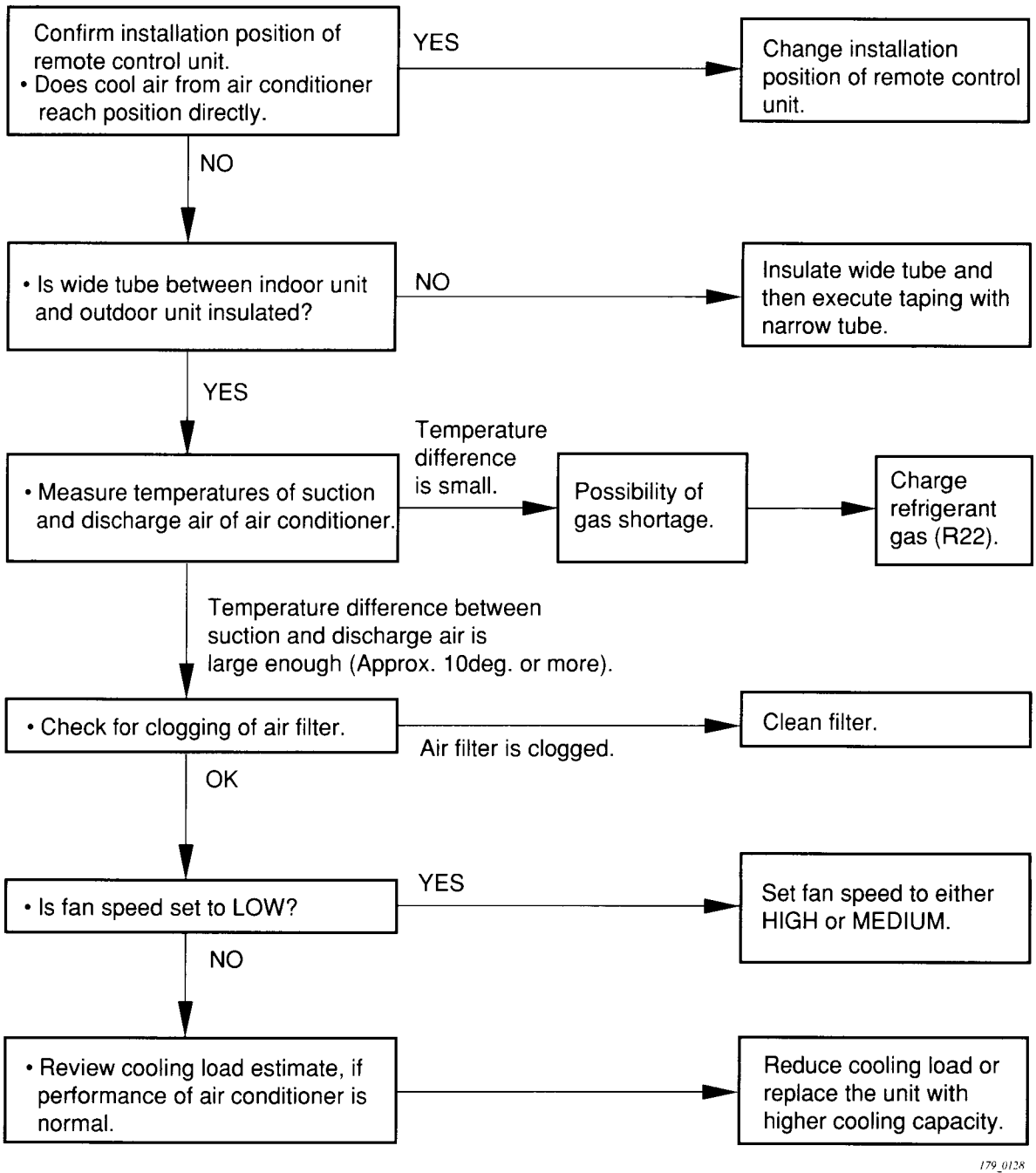
NOTE:
In case of defect,
replace the respective part.

178_0128

(4) Air conditioner operates, but abnormalities are observed.

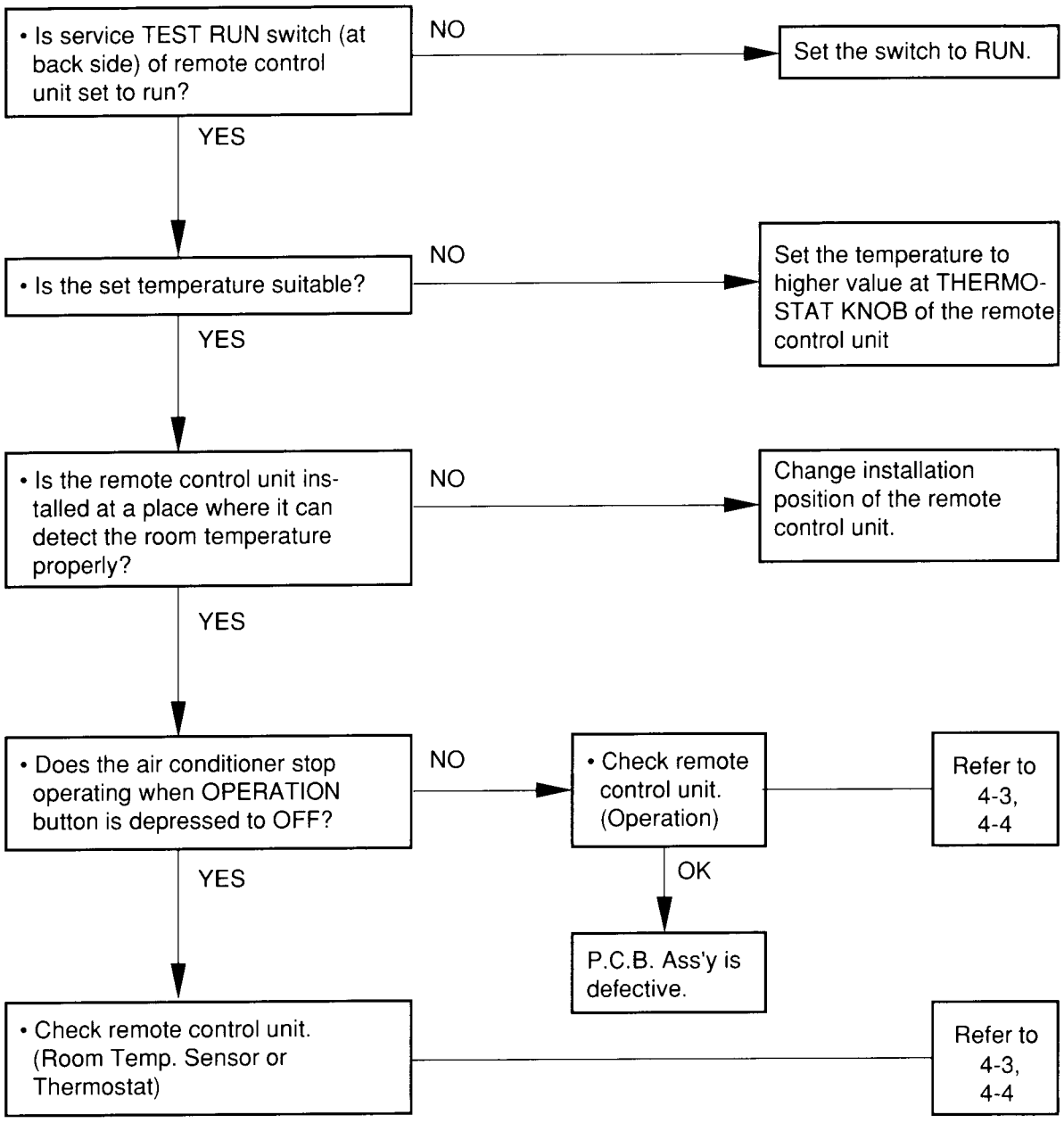
① Poor cooling.

(Only compressor does not run.)



179_0128

② Excessive cooling.



Note:
In case of defect,
replace the respective part.

4

4-2 If some sensor is defective.

① Indoor (heat exchanger) coil temp. Sensor is defective.

(a) Open

Even the air conditioner does not Thermo. OFF.

Compressor and outdoor fan repeat ON for 10 minutes and OFF for 6 minutes.

(b) Shortage

When the water be dehumidified is frozen in the indoor coil,

"Freeze Prevention" does not operate.

② Room temp. Sensor (in the remote control unit) is defective.

(a) Open (=Always Thermo. OFF)

Neither outdoor fan nor compressor runs.

(b) Shortage (=Always Thermo. ON)

Outdoor fan and compressor do not stop. — Excessive cooling.

4-3 Operation of major electrical parts

Operation Mode (Function)		Operation	Indoor unit and Remote Control unit						Oudoor unit	
			Indicator lamps					Fan	Fan	Compressor
			Room Temp.	Cool	Timer	Night setback Energy saver	Sweep			
Cool	Manual	Thermo. ON	○	○				○	○	○
		Thermo. OFF	○	○				○		
	Energy saver	Thermo. ON	○	○		○		○	○	○
		Thermo. OFF	○	○		○				
	Night setback	Thermo. ON	○	○		○		○	○	○
		Thermo. OFF	○	○		○				
	Timer (set)	ON Timer			○					
		OFF Timer	○	○	○			○	○	○
	Freeze prevention		○	○				○		
Fan			○					○		
Flap	Sweep	Cool	○	○*		○*		○	○*	○*
		Fan	○					○		
	Stop	Cool	○	○*		○*		○	○*	○*
		Fan	○					○		

NOTE ○* Refer to Cool Mode.

4-4 Checking the Electrical Components

(1) Measurement of Insulation Resistance

- The insulation is in good condition if the resistance exceeds 1 MΩ.

① Power Supply Wires

Clamp the earthed wire of the Power Supply wires with a lead clip of the insulation resistance tester and measure the resistance by placing a probe on either of the power wires. (**Fig. 27**)

Then measure the resistance between the earthed wire and the other power wires. (**Fig. 27**)

See **Fig. 12**.

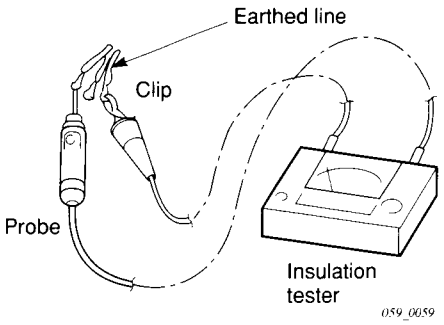


Fig. 27

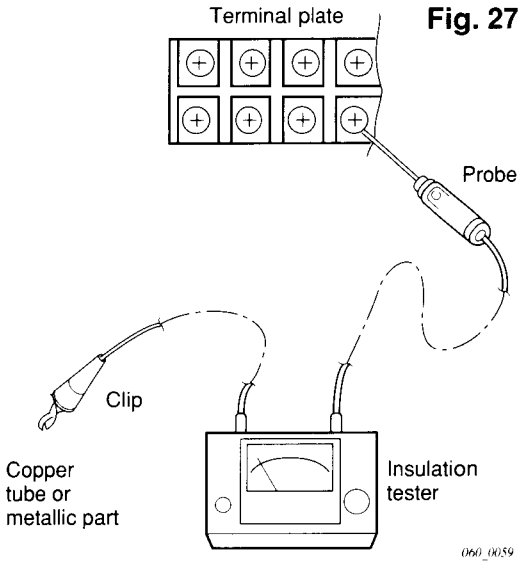


Fig. 28

② Indoor Unit

Clamp an aluminum plate fin or copper tube with the lead clip of the insulation resistance tester and measure the resistance by placing a probe on ①, and then ②, and then ③ on the 6P terminal plate (**Fig. 28**)

③ Outdoor Unit

Measure the resistance on ⑤ and then ⑥, and then ⑦ on the 8P terminal plate in the same manner as explained above (2). (**Fig. 28**)

See **Fig. 12**.

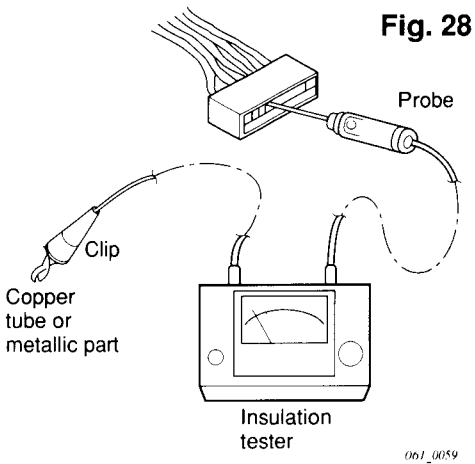


Fig. 29

④ Measurement of Insulation Resistance for Electrical parts

- Disconnect the connector of the desired electric part from terminal plate, P.C.B. A'ssy, etc. (**Fig. 29**)
- Similary, disconnect the lead wires from compressor, capacitor, etc. (**Fig. 30**)
- Measure the resistance in the same manner as illustrated on the right.

  Refer to Electrical Wiring Diagram.

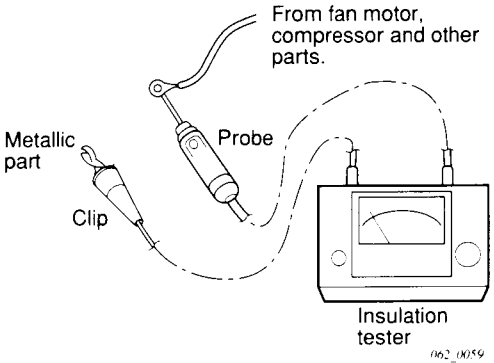


Fig. 30

NOTE
If the probe does not enter the hole because the hole is too narrow, use a probe with a thinner pin.

(2) Checking of Protective Devices

- Disengage the connector, which consists of P (plug) and S (socket) when you want to check the protective device.
- Then check continuity among plug's (and/or socket's) terminal as in **Fig. 31**.
- Normality of the protective device can be judged by the following table.
  The Protective Device is proved normal if there is a continuity between terminals.

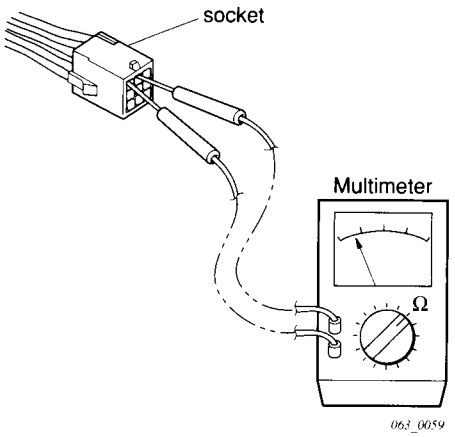


Fig. 31

① Indoor fan motor thermal protector (49FI) . . . . . Indoor unit

- Disconnect 8P connector (WHT) which leads to the indoor fan motor (FMI).
- Check the socket's terminals between No. 3 (GRY lead wire) and No. 4 (GRY lead wire).

② Compressor motor thermal protector (49C) . . . . . Outdoor unit

- Disconnect both 8P connector (WHT) and 12P connector (WHT) in the outdoor unit.
- Check terminal between 8P plug's No. 3 (GRY lead wire) and 12P socket's No. 10 (GRY lead wire).

③ Outdoor fan motor thermal protector (49FO) . . . . . Outdoor unit

- Disconnect both 8P connector (WHT) which leads to the outdoor fan motor (FMO).
- Check socket's terminal between No. 3 (GRY lead wire) and No.4 (GRY lead wire).

(3) Checking of Electrical Parts

① **Power transformer (TR1) ..... Indoor unit** *Measure the coil resistance.

- Primary ; Measure the resistance between No.1 and No.2 (WHT lead wires) terminals of 2P (WHT) socket jointed to power transformer.
- Secondary 10.8V ; Measure the resistance between No.1 and No.2 (YEL lead wires).
  13.5V ; Measure the resistance between No.3 and No.4 (BRN lead wires).
  11.2V ; Measure the resistance between No.5 and No.6 (RED lead wires).

Refer to "1–3–(A) Other component specifications".

② **Indoor fan motor (FMI) ..... Indoor unit** *Measure the coil resistance.

- Measure the resistance between each terminal of 8P (WHT) socket jointed to the indoor fan motor.

Refer to "1–2–(A) Major component specifications".

③ **Outdoor fan motor (FMO) ..... Outdoor unit** *Measure the coil resistance.

- Measure the resistance in the same manner as explained above (3).

Refer to "1–2–(B) Major component specifications".

④ **Fan motor capacitor ..... Both in indoor and outdoor unit**

- Remove the lead wires from the capacitor terminals, and then place a probe on the capacitor terminals as shown in **Fig. 32**. Observe the deflection of the pointer, setting the resistance measuring range of the multimeter to the maximum value.
- The capacitor is "good" if the pointer bounces to a great extent and then gradually returns to its original position.

NOTE
The range of deflection and the deflection time differ according to the capacity of the capacitor.

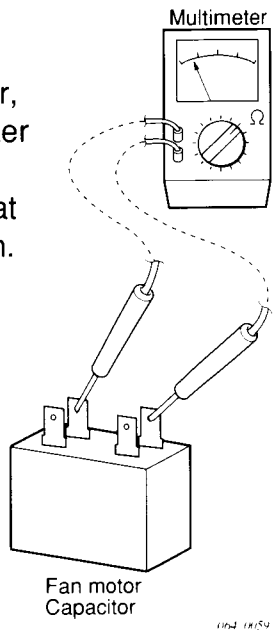


Fig. 32

⑤ Fuse on indoor

*Check the continuity.

- Remove the P.C.B. A'ssy from the electrical component box. Then pull out the fuse from the P.C.B. A'ssy. (**Fig. 33**)

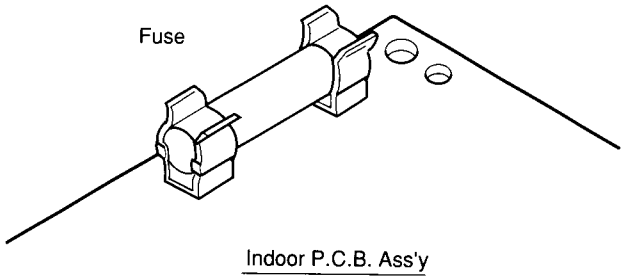


Fig. 33

- Then check for continuity of the fuse by using the multimeter. (**Fig.34**)

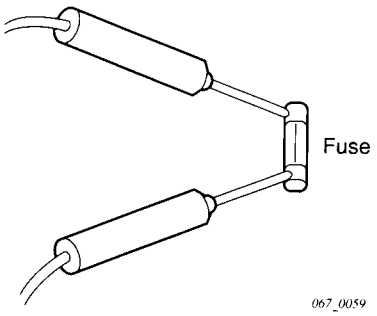


Fig. 34

(4) Arrangement of Electrical Components

- Indoor unit

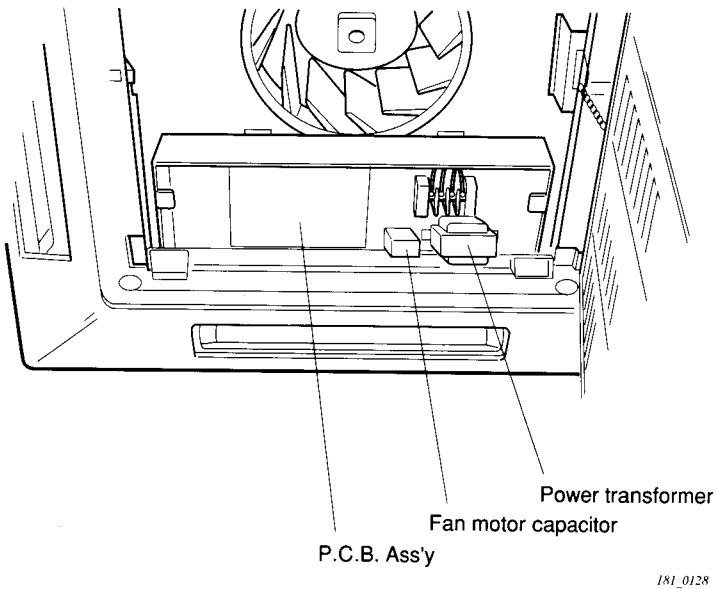


Fig. 35

- Outdoor unit

SPW-C251G5

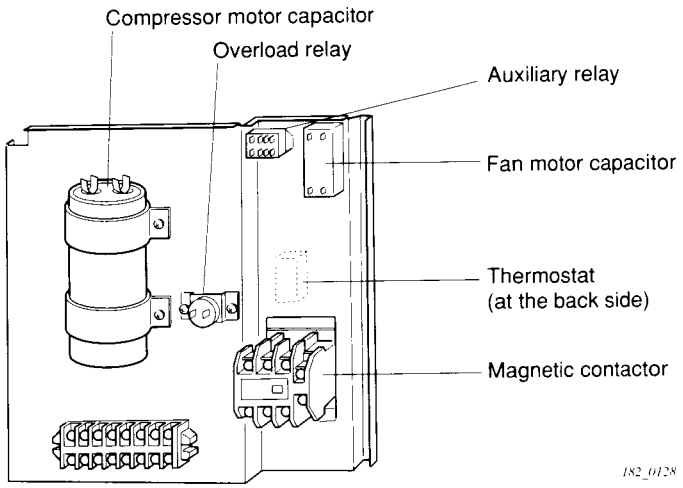


Fig. 36

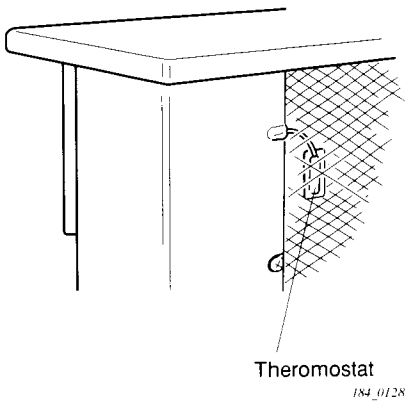


Fig. 37

- Outdoor unit

SPW-C251G8

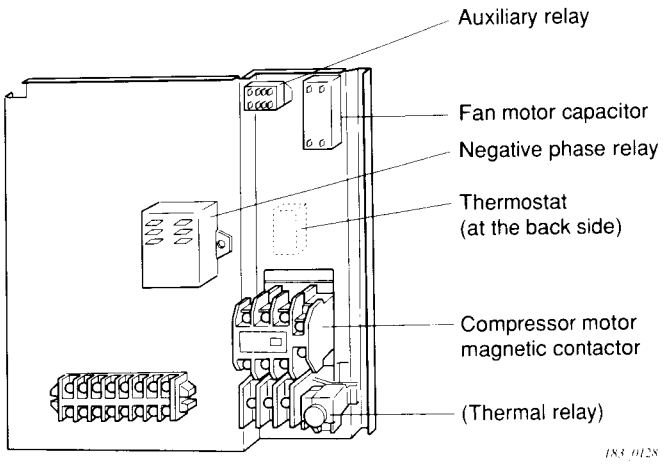


Fig. 38

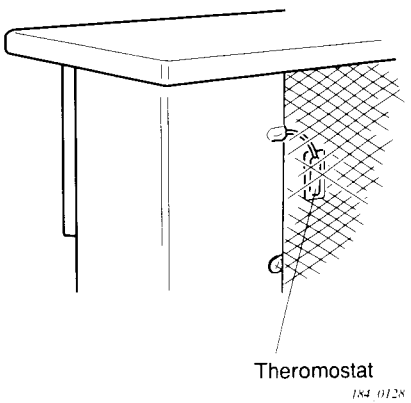


Fig. 39

4

(5) Thermistor Characteristic Curve

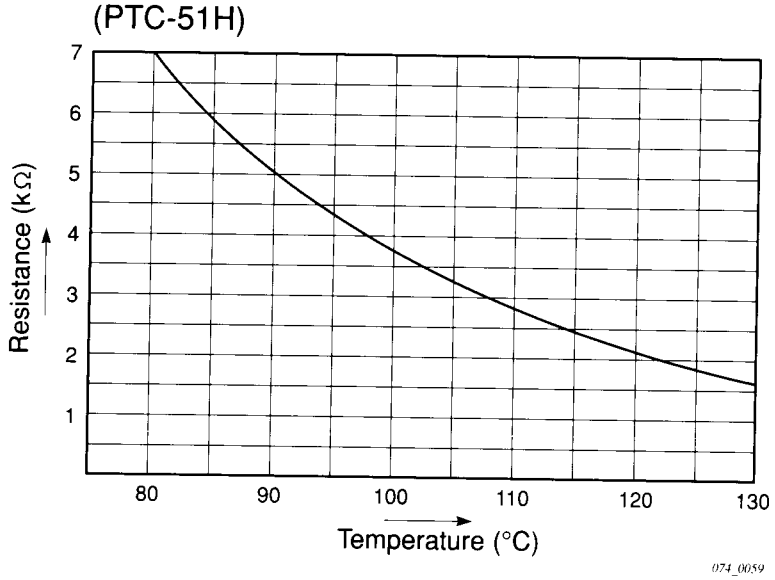


Fig. 40

5. INSTRUCTION MANUAL

Contents

Product Information

If you have problems or questions concerning your Air Conditioner, you will need the following information. Model and serial numbers are on the name plate.

Model No. _____ Serial No. _____

Date of purchase _____

Dealer's address _____

Phone number _____

Alert Symbols

The following symbols used in this manual alert you to potentially dangerous conditions to users, service personnel or the appliance:

WARNING **This symbol refers to a hazardous or unsafe practice which can result in severe personal injury or death.**

CAUTION **This symbol refers to a hazardous or unsafe practice which can result in personal injury or product or property damage.**

Installation Location

- **We recommend that this air conditioner be installed properly by qualified installation technicians in accordance with the Installation Instructions provided with the unit.**
- Before installation, check that the voltage of the electric supply in your home or office is the same as the voltage shown on the name plate.

WARNING

- **Do not install this air conditioner where there are fumes or flammable gases, or in an extremely humid space such as a greenhouse.**
- **Do not install the air conditioner where excessively hot heat-generating objects are located.**

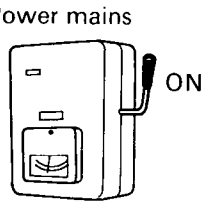
Avoid: To protect the air conditioner from heavy corrosion, avoid installing the outdoor unit where salty sea water can splash directly onto it or in sulphurous air near a spa.

Electrical Requirements

1. All wiring must conform to local electrical codes. Consult your dealer or a qualified electrician for details.
2. Each unit must be properly grounded with a ground (or earth) wire or through the supply wiring.
3. Wiring must be done by a qualified electrician.

CAUTION

To warm up the system, the power mains must be turned on at least five (5) hours before operation. Leave the power mains ON unless you will not be using this appliance for an extended period.



Safety Instructions

- **Read this booklet carefully before using this air conditioner. If you still have any difficulties or problems, consult your dealer for help.**
- **This air conditioner is designed to give you comfortable room conditions. Use this air conditioner only for its intended purpose as described in this Instruction Manual.**

WARNING

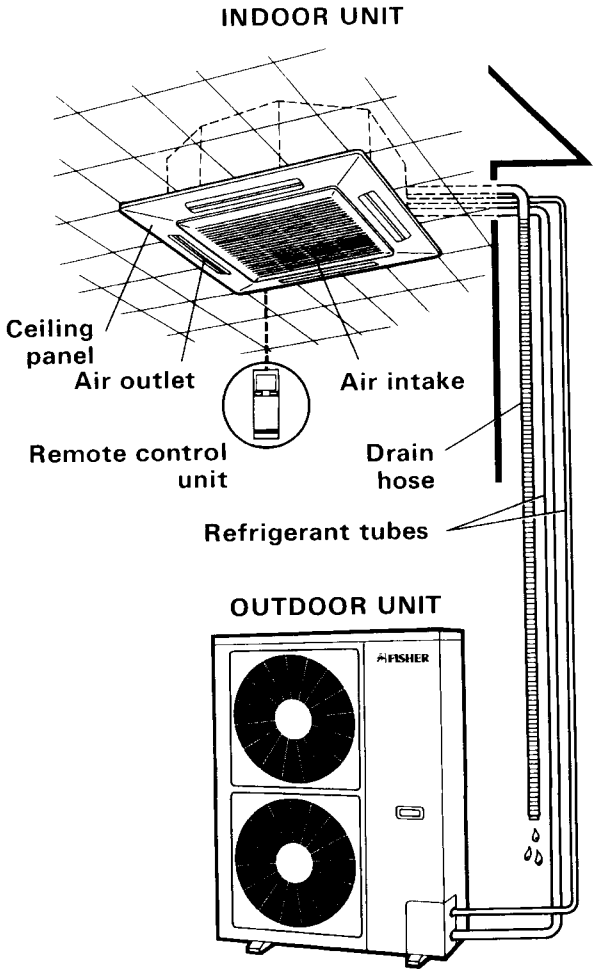
- **Never use or store gasoline or other flammable vapors or liquids near the air conditioner — doing so is very dangerous.**
- **This air conditioner has no ventilator for taking in fresh air from outdoors. You must open doors or windows frequently when you use gas or oil heating appliances in the same room, which consume a lot of oxygen from the air. Otherwise there is a risk of suffocation in an extreme case.**

CAUTION

- **Do not turn the air conditioner on and off from the power mains switch. Use the ON/OFF operation button.**
- **Do not stick anything into the air outlet of the air conditioner. Doing so is dangerous because the fan is rotating at high speed.**
- **Do not let children play with the air conditioner.**
- **Do not cool or heat the room too much if babies or invalids are present.**

Names of Parts

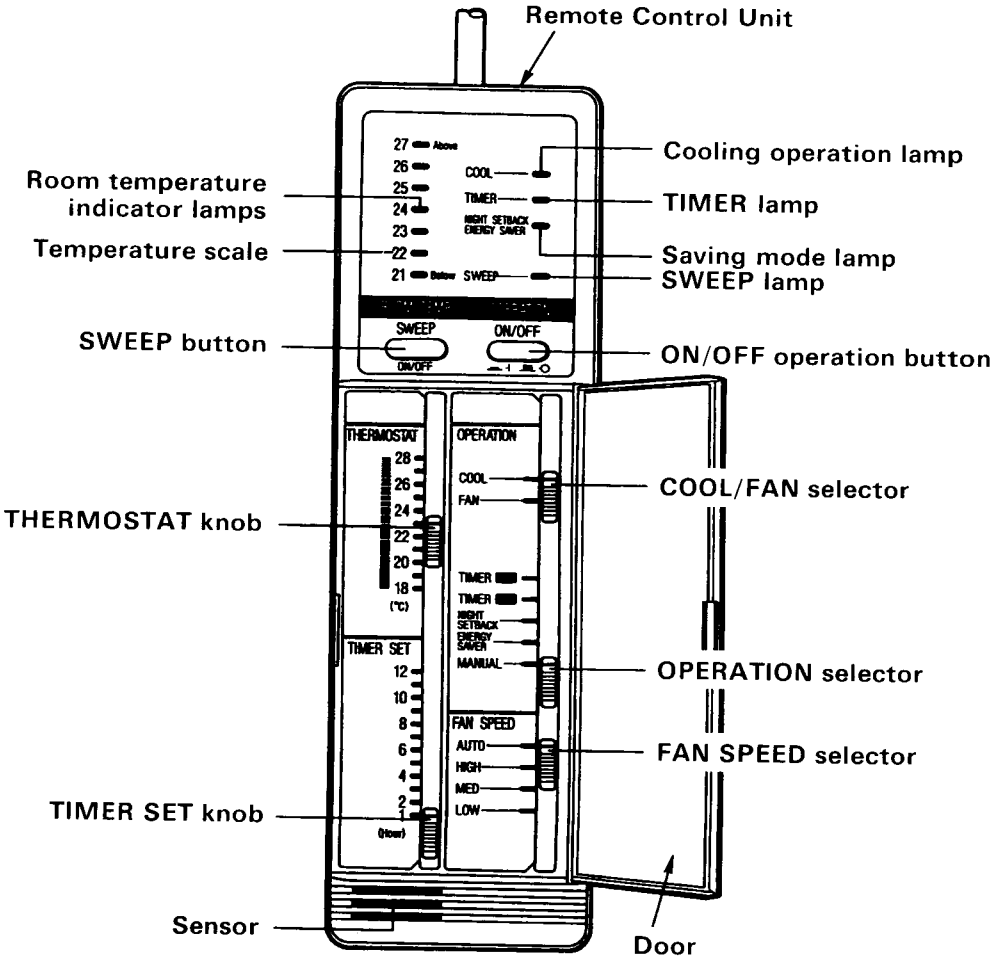
This air conditioner consists of an indoor unit and an outdoor unit.



NOTE This illustration is based on the external view of a standard model. Consequently, the appearance may differ from that of the air conditioner which you have selected.

Ceiling panel	This incorporates the air intake, air filter, air outlet and the automatic air sweeping mechanism.
Air outlet	Conditioned air is blown out of the air conditioner through the four air outlets. The direction of airflow can be adjusted as desired using remote control unit.
Remote control unit	The wall mountable remote control unit consists of display and various control buttons.
Air intake	The air from the room is drawn into this section and passed through the air filters which remove dust.
Drain hose	Moisture in the room condenses and drains off through this hose.
Refrigerant tubes	The indoor and outdoor units are connected by copper tubes through which refrigerant gas flows.
Outdoor (condensing) unit	The outdoor unit contains the compressor, fan motor, heat exchanger coil, and other electrical components.

Controls and Indicators



ON/OFF operation button	This button is used to turn the air conditioner on and off.
Cooling operation lamp	This lamp lights when the "COOL" mode is selected.
TIMER lamp	This lamp lights when the system is operating on the timer.
Saving mode lamp	This lamp lights when the NIGHT SETBACK or ENERGY SAVER mode is selected.
SWEEP lamp	This lamp lights when the SWEEP button is turned on.
Room temperature indicator lamps	These lamps indicate the approximate room temperature at the location of the remote control unit.
Temperature scale	The numbers constitute the temperature scale for cooling (°C).
SWEEP button	This button is used to make the flap move up and down automatically to deliver cool air to every corner of the room.
COOL/FAN selector	Use this control to select "COOL" mode or "FAN(only)" mode without cooling.

Controls and Indicators (continued)

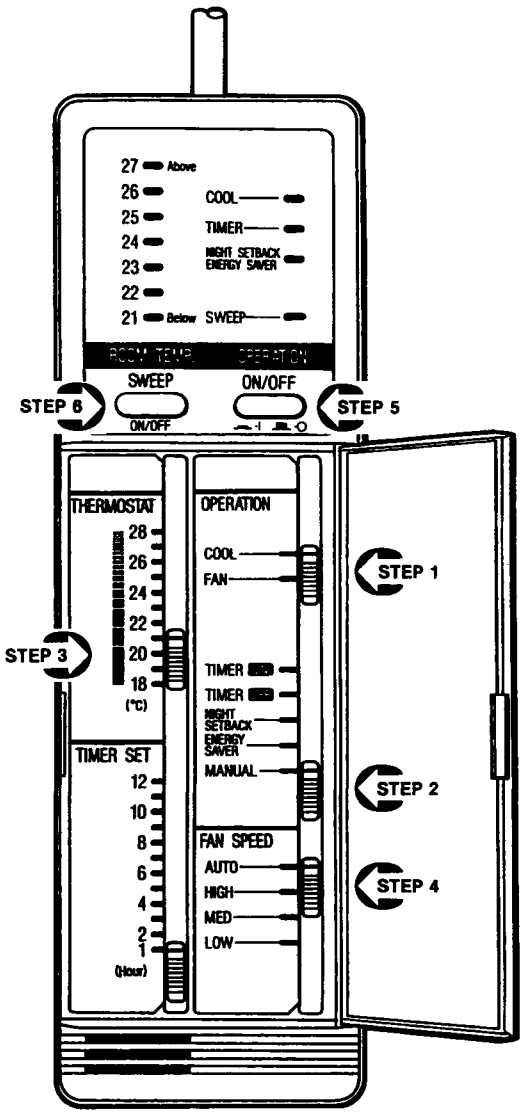
OPERATION selector	This control has five options: **TIMER ON:** Used to start the system at the set time. **TIMER OFF:** Used to stop the system at the set time. **NIGHT SETBACK:** Used for programmed energy saving operation at night. **ENERGY SAVER:** Used for programmed energy saving operation during the day. **MANUAL:** Used for conventional temperature control operation using the thermostat.
FAN SPEED selector	**AUTO:** The air conditioner automatically decides the fan speed. **HIGH :** High fan speed **MED :** Medium fan speed **LOW :** Low fan speed
THERMOSTAT knob	You can regulate the room temperature as desired by adjusting this knob.
TIMER SET knob	This control is used to set the time at which you wish the air conditioner to go on or off. Each number on the scale indicates a number of hours.
SENSOR	The sensor detects any change in the room temperature.

Operation

1. Cooling

A. Manual Cooling

The Manual mode is used for normal cooling operation.



STEP 1: Set the COOL/FAN selector knob to COOL.

STEP 2: Set the OPERATION selector knob to MANUAL.

STEP 3: Set the THERMOSTAT knob to the desired temperature.

STEP 4: Set the FAN SPEED as desired.

STEP 5: Press the ON/OFF operation button. To stop the air conditioner, press the ON/OFF operation button again.

STEP 6: When you wish to circulate conditioned air throughout the entire room, press the SWEEP button so that it locks (ON state). The SWEEP lamp lights during sweeping. To stop sweeping, press the SWEEP button again to unlock (OFF state).

NOTE

1. This appliance has a built-in 3-minute time delay circuit to ensure reliable operation. If the ON/OFF operation button is pressed, the compressor will start running after three minutes.
   In the event of power failure, the unit will stop. When the power is restored, the unit will re-start automatically after three minutes.
2. To prevent the appliance from malfunctioning, do not set the selector knob between the two indicated positions. Make sure that it clicks into position.

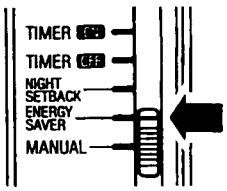
SM700128

Operation (continued)

B. Energy Saving Modes

B.1 Energy Saver mode

STEP 1: Set the OPERATION selector knob to ENERGY SAVER before turning the system on.

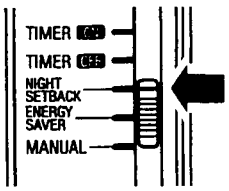


STEP 2: Press the ON/OFF operation button. The ENERGY SAVER and COOL lamps will light.

To cancel the Energy Saver mode, move the selector to MANUAL.

B.2 Night Setback mode

STEP 1: Set the OPERATION selector knob to NIGHT SETBACK before turning the system on.

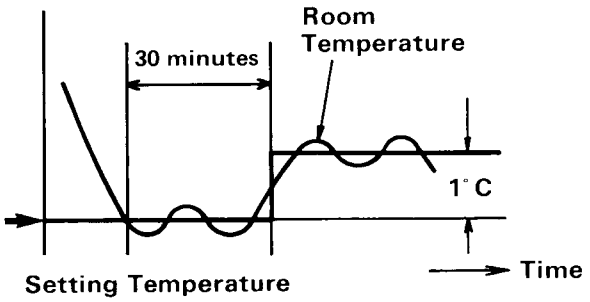


STEP 2: Press the ON/OFF operation button. The NIGHT SETBACK and COOL lamps will light.

To cancel the Night Setback mode, move the selector to MANUAL.

What does the Energy Saver mode do?

By selecting this mode and then pressing the ON/OFF operation button, the air conditioner will perform cooling operation until the temperature in the room reaches the set value, then the thermostat will cause the unit to pause. After about 30 minutes, the air conditioner will automatically raise the set temperature 1°C as shown in the diagram below. This enables you to save energy without sacrificing comfort. This function is convenient for when the room is vacant or gentle cooling is needed in the daytime.



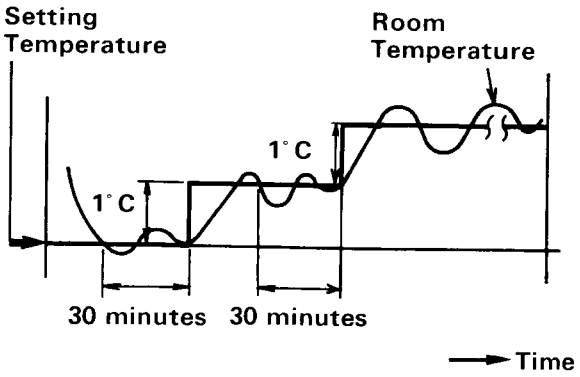
5

Operation (continued)

What does the Night Setback mode do?

By selecting this mode and then pressing the ON/OFF operation button, the air conditioner will perform cooling operation until the temperature in the room reaches the set value, then the thermostat will cause the unit to pause.

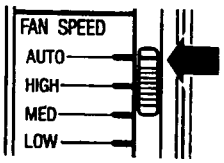
After about 30 minutes, the air conditioner will automatically raise the set temperature 1°C. When the room temperature reaches the newly set value, the thermostat will cause the unit to pause. After about 30 minutes, the temperature is again raised by 1°C as shown below. This enables you to save energy. This function is convenient for when leaving the air conditioner on all night or when gentle cooling is needed.



2. Adjusting the Fan Speed

A. Automatic

Simply set the FAN SPEED selector to the "AUTO" position.



A microcomputer in the air conditioner automatically controls the fan speed when the AUTO mode is selected. When the air conditioner starts operating, the difference between the room temperature and the set temperature is detected by the microcomputer, which then automatically switches the fan speed to the most suitable level.
Cooling

When difference between room temperature and set temperature is	FAN SPEED
2°C and over	High
Between 2 and 1°C	Medium
Below 1°C	Low

B. Manual

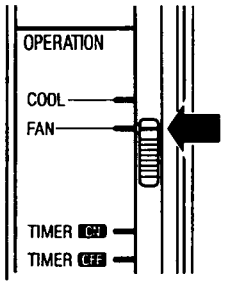
If you want to adjust the fan speed manually during cooling, just set the FAN SPEED control as desired [HIGH, MED, or LOW].

Operation (continued)

3. Fan Only

If you want to circulate air without any temperature control, follow these steps:

STEP 1: Set the COOL/FAN selector knob to FAN.



STEP 2: Press the ON/OFF operation button.

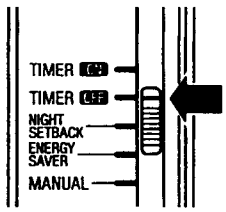
4. Using the Timer

A. TIMER OFF Mode

The system stops at the set time.

STEP 1: Set the TIMER SET knob to the desired time.
When the timer is set to 6, for instance, the system stops after six hours.

STEP 2: Set the OPERATION selector knob to TIMER OFF.



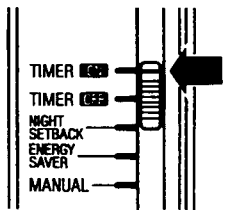
The TIMER lamp will light.

B. TIMER ON Mode

The system starts at the set time.

STEP 1: Set the TIMER SET knob to the desired time.
When the timer is set to 6, for instance, the system starts after six hours.

STEP 2: Set the OPERATION selector knob to TIMER ON.



STEP 3: Press the ON/OFF operation button. The TIMER lamp will light.

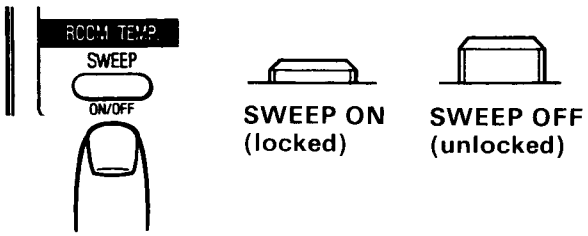
5

Operation (continued)

5. Adjusting the Air Flow Direction

A. To sweep the air automatically

If you wish to circulate air throughout the entire room, press down the SWEEP button so that it locks (ON state).
The SWEEP lamp lights during sweeping.



B. To fix the air flow direction

To set the air flow in a specific direction, wait until the flap is in the desired position, then press the SWEEP button once again (up position); the flap will stop its sweeping motion, and the air flow will be set in the direction the flap was in when the button was pressed.

Power failure during timer operation

If a power failure occurs, the time counted up to that point will become void. After the power is restored, the timer again starts counting up to the set time.

Care and Cleaning

WARNING

For safety's sake, be sure to turn the appliance off and also to disconnect it from the power mains before cleaning it. Do not pour water on the unit to clean it. This will damage the internal components and cause an electric shock hazard.

Indoor Unit

Casing and Grille

Clean the casing and grille of the indoor unit with a vacuum cleaner brush, or wipe them with a clean soft cloth.

If these parts are stained, use a clean cloth moistened with a mild liquid detergent. When cleaning the grille, be careful not to force the vanes out of place.

CAUTION

Never use solvents, or harsh chemicals. Do not wipe the plastic parts with very hot water.

Air filter

The air filter collects dust and other particles from the air and should be cleaned about once every six months. If the filter gets blocked, the efficiency of the air conditioner drops greatly.

NOTE

The frequency with which the filter should be cleaned depends on the environment in which the unit is used.

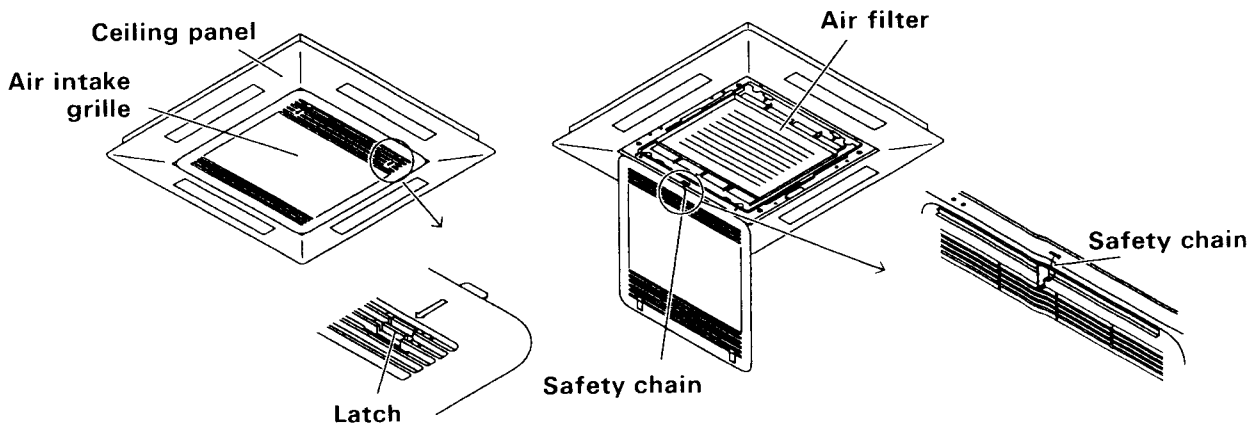
How to remove the filter

1. Press on the two latches of the air intake grille with your thumb in the direction of the arrow to open the grille.
2. Open the air intake grille downward.

CAUTION

When cleaning the air filter, never remove the safety chain. If it is necessary to remove it for servicing and maintenance inside, be sure to reinstall the safety chain securely (hook on the grille side) after the work.

3. Remove the air filter attached to the ceiling panel.



How to clean the filter

Use a vacuum cleaner to remove light dust. If there is sticky dust on the filter, wash the filter in lukewarm, soapy water, rinse it in clean water, and dry it.

SANYO Electric Co., Ltd.
Osaka, Japan
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