

TECHNICAL & SERVICE MANUAL

SANYO

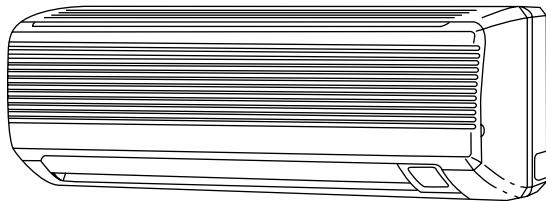
**SAP-K92AH + SAP-C92AH
SAP-K122AH + SAP-C122AH**

FILE NO.

SPLIT SYSTEM AIR CONDITIONER

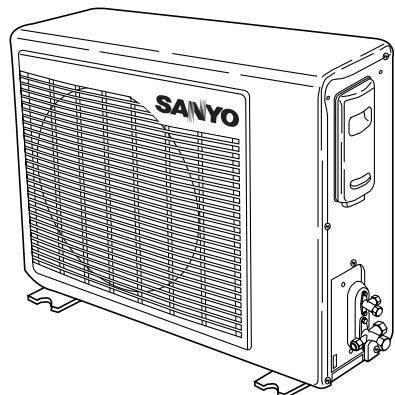
Indoor Model No.	Product Code No.	Destination	Outdoor Model No.	Product Code No.	Destination
SAP-K92AH-S	1 852 083 74	Australia	SAP-C92AH-S	1 852 084 15	Australia
SAP-K122AH-S	1 852 083 75		SAP-C122AH-S	1 852 084 16	

Indoor Unit



**SAP-K92AH
SAP-K122AH**

Outdoor Unit



**SAP-C92AH
SAP-C122AH**

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



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 accidental 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 Ceiling or Wall

Make sure the ceiling/wall is strong enough to hold the units weight. It may be necessary to construct a strong wood or metal frame to provide added support.

...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

- 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.

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.

Others



CAUTION

- Ventilate any enclosed areas when installing or testing the refrigeration system. Escaped refrigerant gas, on contact with fire or heat, can produce dangerously toxic gas.
- Confirm upon completing installation that no refrigerant gas is leaking. If escaped gas comes in contact with a stove, gas water heater, electric room heater or other heat source, it can produce dangerously toxic gas.

Table of Contents

	Page
1. OPERATING RANGE	1
2. SPECIFICATIONS	
2-1. Unit Specifications	2
2-2. Major Component Specifications.....	4
2-3. Other Component Specifications.....	8
3. DIMENSIONAL DATA.....	9
4. REFRIGERANT FLOW DIAGRAM	11
5. PERFORMANCE DATA	
5-1. Performance charts	12
5-2. Air Throw Distance Chart	14
5-3. Cooling Capacity	16
5-4. Heating Capacity	18
6. ELECTRICAL DATA	
6-1. Electrical Characteristics	19
6-2. Electric Wiring Diagram	21
7. INSTALLATION INSTRUCTIONS	
7-1. Installation Site Selection	23
7-2. Remote Control Unit Installation Position	25
7-3. Recommended Wire Length and Diameter	26
8. FUNCTION	
8-1. Room Temperature Control	27
8-2. Dry Operation	29
8-3. Automatic Switching between Cooling and Heating	29
8-4. Freeze Prevention	30
8-5. Compressor overcurrent protection	30
8-6. Overload Prevention	31
8-7. Cold Draft Prevention	32
8-8. Defrosting Operation	33
8-9. Outdoor Fan Speed Control	34
9. TROUBLESHOOTING	
9-1. Check before and after troubleshooting	35
9-2. Air conditioner does not operate	36
9-3. Some part of air conditioner does not operate	40
9-4. Air conditioner operates, but abnormalities are observed	42
9-5. If a sensor is defective	44
10. CHECKING ELECTRICAL COMPONENTS	
10-1. Measurement of Insulation Resistance	45
10-2. Checking Continuity of Fuse on PCB Ass'y.....	46
10-3. Checking Motor Capacitor	46
11. MAINTENANCE	
11-1. Changing Address of Remote Control Unit in Indoor Unit	47
APPENDIX	48

1. OPERATING RANGE

	Temperature	Indoor Air Intake Temp.	Outdoor Air Intake Temp.
Cooling	Maximum	32°C D.B. / 23°C W.B.	43°C D.B.
	Minimum	19°C D.B. / 14°C W.B.	19°C D.B.
Heating	Maximum	27°C D.B.	24°C D.B. / 18°C W.B.
	Minimum	16°C D.B.	-8°C D.B. / -9°C W.B.

2. SPECIFICATIONS

2-1. Unit Specifications

Indoor Unit **SAP-K92AH**
 Outdoor Unit **SAP-C92AH**

Power Source		220–240V Single phase 50Hz											
Voltage rating		220/230/240 V											
Performance		Cooling			Heating								
Capacity	kW	2.55	/	2.55	/	2.50	3.20 / 3.25 / 3.20						
	BTU/h	8,700	/	8,700	/	8,500	10,900 / 11,100 / 10,900						
Air circulation (High)	m³/h	430			430								
Moisture removal (High)	Liters/h	0.85			—								
Electrical Rating		Cooling			Heating								
Available voltage range	V	198 ~ 264											
Running amperes	A	4.3	/	4.3	/	4.4	4.3 / 4.3 / 4.4						
Power input	W	930	/	950	/	1,020	920 / 940 / 1,020						
Power factor	%	98	/	96	/	97	97 / 95 / 97						
C.O.P.	W/W	2.74	/	2.68	/	2.45	3.48 / 3.46 / 3.14						
Compressor locked rotor amperes	A	22	/	23	/	24	22 / 23 / 24						
Features													
Controls / Temperature control	Microprocessor / I.C. thermostat												
Control unit	Wireless remote control unit												
Timer	1-hour OFF / 12-hours ON or OFF												
Fan speeds	Indoor / Outdoor	3 and Auto / 1(Hi)											
Airflow direction (Indoor)	Horizontal	Manual											
	Vertical	Auto											
Air filter	Washable, Anti-Mold												
Compressor	Rotary (Hermetic)												
Refrigerant / Amount charged at shipment	g	R22 / 880											
Refrigerant control	Capillary tube												
Operation sound	Indoor : Hi / Me / Lo	dB-A	39 / 37 / 33		39 / 37 / 33								
	Outdoor : Hi	dB-A	44		44								
Refrigerant tubing connections	Flare type												
Max. allowable tubing length at shipment	m	7.5											
Refrigerant tube diameter	Narrow tube	mm (in.)	6.35(1/4)										
	Wide tube	mm (in.)	9.52(3/8)										
Refrigerant tube kit / Accessories	Optional / Hanging wall bracket												
Dimensions & Weight		Indoor Unit			Outdoor Unit								
Unit dimensions	Height	mm	250		530								
	Width	mm	790		680								
	Depth	mm	174		225								
Package dimensions	Height	mm	242		580								
	Width	mm	850		812								
	Depth	mm	312		315								
Weight	Net	kg	7.0		31.0								
	Shipping	kg	10.0		33.0								
Shipping volume		m³	0.06		0.15								

Remarks:

Rating conditions are:
 Cooling : Indoor air temperature 27°C D.B. / 19°C W.B.
 Outdoor air temperature 35°C D.B. / 24°C W.B.
 Heating : Indoor air temperature 20°C D.B.
 Outdoor air temperature 7°C D.B. / 6°C W.B.

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Indoor Unit **SAP-K122AH**
 Outdoor Unit **SAP-C122AH**

Power Source		220–240V Single phase 50Hz											
Voltage rating		220/230/240 V											
Performance		Cooling		Heating									
Capacity	kW	3.20	/	3.20	/	3.20	3.70	/	3.75	/	3.75		
	BTU/h	10,900	/	10,900	/	10,900	12,600	/	12,800	/	12,800		
Air circulation (High)	m³/h	470		460									
Moisture removal (High)	Liters/h	1.45		—									
Electrical Rating		Cooling		Heating									
Available voltage range	V	198 ~ 264											
Running amperes	A	5.8	/	5.8	/	6.1	5.9	/	5.9	/	6.0		
Power input	W	1,220	/	1,240	/	1,350	1,230	/	1,260	/	1,320		
Power factor	%	96	/	93	/	92	95	/	93	/	92		
C.O.P.	W/W	2.62	/	2.58	/	2.37	3.01	/	2.98	/	2.84		
Compressor locked rotor amperes	A	32	/	33	/	35	32	/	33	/	35		
Features													
Controls / Temperature control		Microprocessor / I.C. thermostat											
Control unit		Wireless remote control unit											
Timer		1-hour OFF / 12-hours ON or OFF											
Fan speeds	Indoor / Outdoor	3 and Auto / Auto (Hi,Lo)											
Airflow direction (Indoor)	Horizontal	Manual											
	Vertical	Auto											
Air filter		Washable, Anti-Mold											
Compressor		Rotary (Hermetic)											
Refrigerant / Amount charged at shipment	g	R22 / 1,010											
Refrigerant control		Capillary tube											
Operation sound	Indoor : Hi / Me / Lo	dB-A	40 / 38 / 36		39 / 38 / 36								
	Outdoor : Hi	dB-A	45		46								
Refrigerant tubing connections		Flare type											
Max. allowable tubing length at shipment	m	7.5											
Refrigerant tube diameter	Narrow tube	mm (in.)	6.35(1/4)										
	Wide tube	mm (in.)	12.7(1/2)										
Refrigerant tube kit / Accessories		Optional / Hanging wall bracket											
Dimensions & Weight		Indoor Unit		Outdoor Unit									
Unit dimensions	Height	mm	250		530								
	Width	mm	790		680								
	Depth	mm	174		225								
Package dimensions	Height	mm	242		580								
	Width	mm	850		812								
	Depth	mm	312		315								
Weight	Net	kg	7.0		34.0								
	Shipping	kg	10.0		36.0								
Shipping volume		m³	0.06		0.15								

Remarks:

Rating conditions are:

Cooling : Indoor air temperature 27°C D.B. / 19°C W.B.

Outdoor air temperature 35°C D.B. / 24°C W.B.

Heating : Indoor air temperature 20°C D.B.

Outdoor air temperature 7°C D.B. / 6°C W.B.

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

2-2. Major Component Specifications

2-2-1. Indoor Unit

Indoor Unit SAP-K92AH

Controller PCB		
Part No.		POW-K2AH
Controls		Microprocessor
Control circuit fuse		250 V 3.15 A
Remote Control Unit		RCS-3HS4E-G
Fan & Fan Motor		
Type		Cross-flow
Q'ty ... Dia. and length	mm	1 ... ø97 / L578
Fan motor model ... Q'ty		IBH-884-020 ... 1
No. of poles ... 50Hz rpm (High)		2 ... 1,280
Nominal output	W	20
Coil resistance (Ambient temp. 20°C)	Ω	WHT-BRN : 201 WHT-VLT : 261
Safety devices	Type	Thermal fuse
Operating temp.	Open °C	130
	Close	—
Run capacitor (on the PCB Ass'y)	μF	1.5
	VAC	440
Flap Motor		
Type		Stepping motor
Model		MP24GA3
Rating		DC 12 V
Coil resistance (Ambient temp. 25°C)	Ω	A pair of each terminal : 380 ± 7%
Heat Exch. Coil		
Coil		Aluminum plate fin / Copper tube
Rows		2
Fin pitch	mm	1.4
Face area	m ²	0.110

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Indoor Unit SAP-K122AH

Controller PCB		
Part No.		POW-K2AH
Controls		Microprocessor
Control circuit fuse		250 V 3.15 A
Remote Control Unit		RCS-3HS4E-G
Fan & Fan Motor		
Type		Cross-flow
Q'ty ... Dia. and length	mm	1 ... ø97 / L578
Fan motor model ... Q'ty		IBH-884-020 ... 1
No. of poles ... 50Hz rpm (High)		2 ... 1,340
Nominal output	W	20
Coil resistance (Ambient temp. 20°C)	Ω	WHT-BRN : 201 WHT-VLT : 261
Safety devices	Type	Thermal fuse
Operating temp.	Open °C	130
	Close	—
Run capacitor (on the PCB Ass'y)	µF	1.5
	VAC	440
Flap Motor		
Type		Stepping motor
Model		MP24GA3
Rating		DC 12 V
Coil resistance (Ambient temp. 25°C)	Ω	A pair of each terminal : 380 ± 7%
Heat Exch. Coil		
Coil		Aluminum plate fin / Copper tube
Rows		2
Fin pitch	mm	1.4
Face area	m²	0.110

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

2-2-2. Outdoor Unit

Outdoor Unit SAP-C92AH

Controller PCB		—	
Compressor			
Type		Rotary (Hermetic)	
Compressor model		C-R92H5W 80692945-S	
Nominal output	W	900	
Compressor oil ... Amount	cc	4GSD-T or SAY-56T ... 550	
Coil resistance (Ambient temp. 25°C)	Ω	C-R : 3.07 C-S : 7.97	
Safety devices	Type	External(OLR A)	External(OLR T)
	Overload relay	MRA99057-9201	CS-7C115
	Operating temp.	Open °C	145±5
		Close °C	69±11
	Operating amp.(Ambient temp. 25°C)	Trip in 6 to 16 sec. at 18A	—
Run capacitor	μF	22.5	
	VAC	400	
Crank case heater		—	
Fan & Fan Motor			
Type		Propeller	
Q'ty ... Dia.		1 ... ø370	
Fan motor model ... Q'ty		UE6-21AH5PD-S ... 1	
No. of poles ... rpm (230 V, High)		6 ... 760	
Nominal output	W	20	
Coil resistance (Ambient temp. 20°C)	Ω	WHT-BRN : 356.4 WHT-PNK : 439.5	
Safety devices	Type	Thermal fuse	
	Operating temp.	Open °C	145 ± 2
		Close °C	—
Run capacitor	μF	1.5	
	VAC	440	
Heat Exch. Coil			
Coil		Aluminum plate fin / Copper tube	
Rows		1	
Fin pitch	mm	1.2	
Face area	m²	0.333	
External Finish		Acrylic baked-on enamel finish	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Outdoor Unit SAP-C122AH

Controller PCB		—	
Compressor			
Type		Rotary (Hermetic)	
Compressor model		C-R112H5X 80616745-S	
Nominal output		W 1,100	
Compressor oil ... Amount		cc 4GSD-T or SAY-56T ... 550	
Coil resistance (Ambient temp. 25°C)		Ω C-R : 1.962 C-S : 5.38	
Safety devices	Type	External(OLR A)	External(OLR T)
	Overload relay	MRA98596-9201	CS-7C115
	Operating temp.	Open °C 145±5	115±3
		Close °C 69±11	95±5
Operating amp.(Ambient temp. 25°C)		Trip in 6 to 16 sec. at 21A	
Run capacitor		μF 25.0	
		VAC 400	
Crank case heater		—	
Fan & Fan Motor			
Type		Propeller	
Q'ty ... Dia.		1 ... ø370	
Fan motor model ... Q'ty		UE6S-21AC5P-S ... 1	
No. of poles ... rpm (230 V, High)		6 ... 750	
Nominal output		W 20	
Coil resistance (Ambient temp. 20°C)		Ω BRN-WHT : 341.2 WHT-YEL : 212.7 YEL-PNK : 190.0	
Safety devices	Type	Thermal fuse	
	Operating temp.	Open °C 145 ± 2	
		Close °C —	
Run capacitor		μF 1.5	
		VAC 440	
Heat Exch. Coil			
Coil		Aluminum plate fin / Copper tube	
Rows		2	
Fin pitch		mm 1.2	
Face area		m² 0.329	
External Finish		Acrylic baked-on enamel finish	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

2-3. Other Component Specifications

Indoor Unit **SAP-K92AH**
SAP-K122AH

Transformer (TR)		ATR-I55
Rating	Primary	AC 230V, 50/60Hz
	Secondary	13.7V, 0.4A
	Capacity	5.48VA
Coil resistance	Ω (at 25°C)	Primary (WHT – WHT): 307 ± 10% Secondary (BRN – BRN): 1.8 ± 10%
Thermal cut-off temp.		150°C

Thermistor (Coil sensor)		DTN-TKS131B
Resistance	k Ω	0°C 15.0 ± 2%

Thermistor (Room sensor)		DTN-TKS128B
Resistance	k Ω	25°C 5.0 ± 3%

Outdoor Unit **SAP-C92AH**

4-way Valve (20S)		LB81012 (Coil), VK1100B (Valve)
Coil rating		AC 220/240V, 50/60Hz, 6W
Coil resistance	Ω (at 20°C)	3,030 ± 7%

Outdoor Unit **SAP-C122AH**

Thermostat (Fan Speed Control 23S)		MQT5S
Switching temp.	°C	high → LOW 28.5°C ± 1.5 low → HIGH 31.5°C ± 2
Contact rating		AC 220V, 3A
Power Relay (for outdoor fan motor)		HH62S AC220/240V
Coil rating		AC 220/240V
Contact rating		AC 250V, 10A

NOTE This power relay is provided to protect the outdoor fan to operate in Low fan speed during heating mode. In heating operation, the outdoor fan should always run in High fan speed to prevent the unit from freezing.

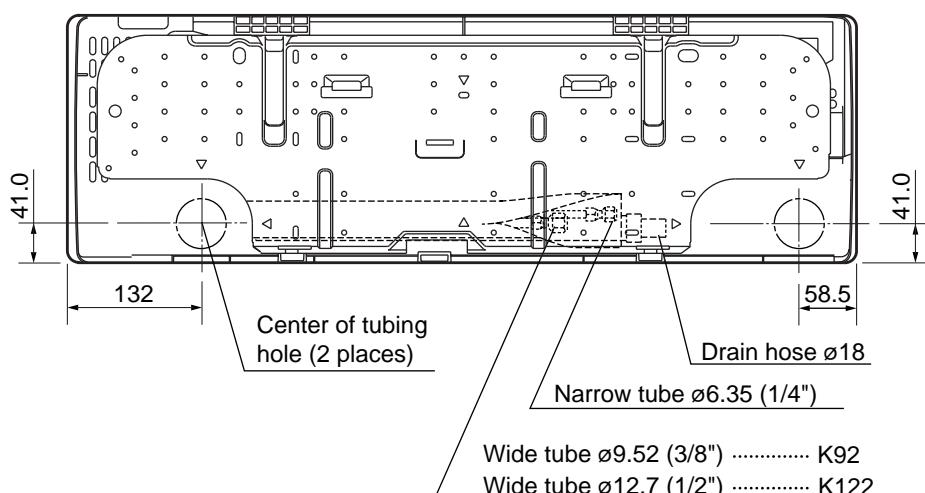
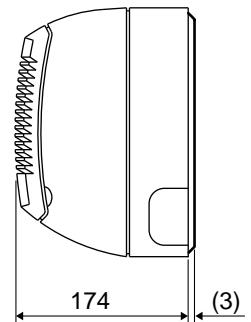
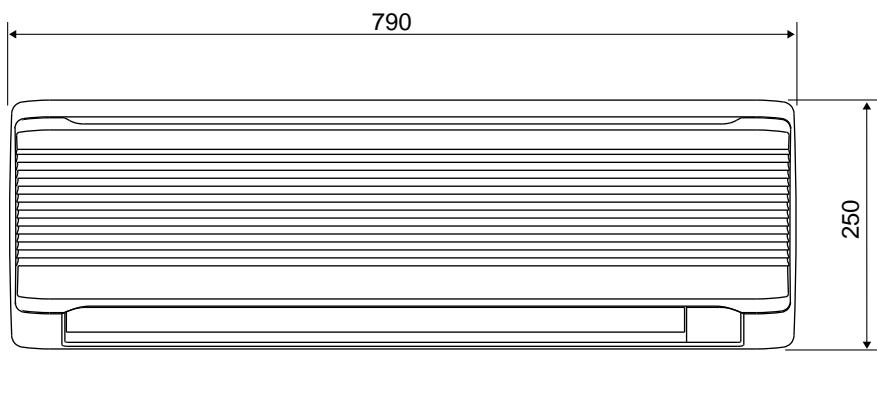
4-way Valve (20S)		LB81012 (Coil), VK1100B (Valve)
Coil rating		AC 220/240V, 50/60Hz, 6W
Coil resistance	Ω (at 20°C)	3,030 ± 7%

PTC Thermistor (TH)		ZPROYCE101A500
Rating		400V, 115A

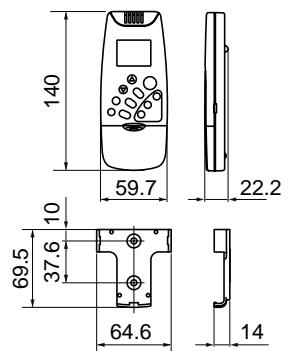
3. DIMENSIONAL DATA

Indoor Unit

SAP-K92AH
SAP-K122AH

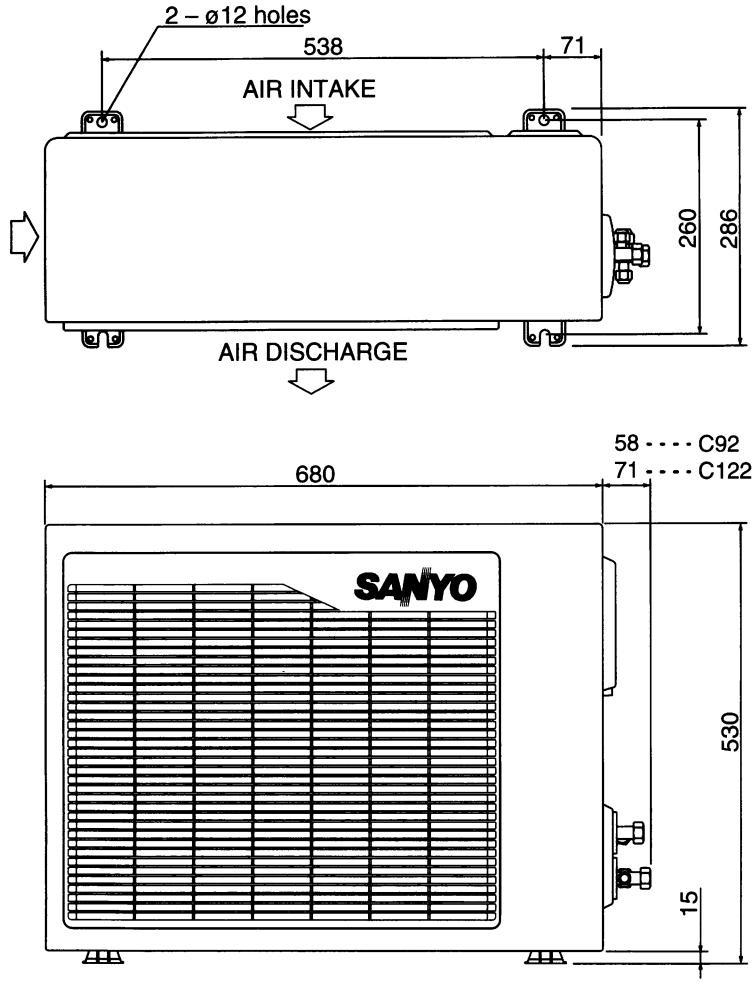


Remote control unit



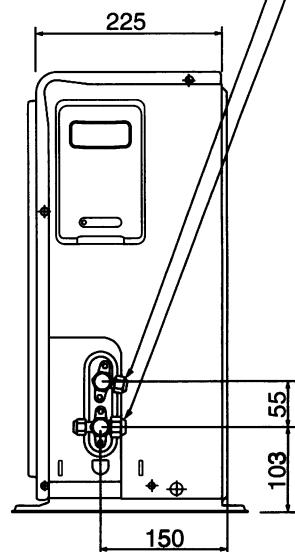
Unit : mm

Outdoor Unit SAP-C92AH
SAP-C122AH



Wide tube service valve
 $\varnothing 9.52$ (3/8") ----- C92
 $\varnothing 12.7$ (1/2") ----- C122

Narrow tube service valve
 $\varnothing 6.35$ (1/4")

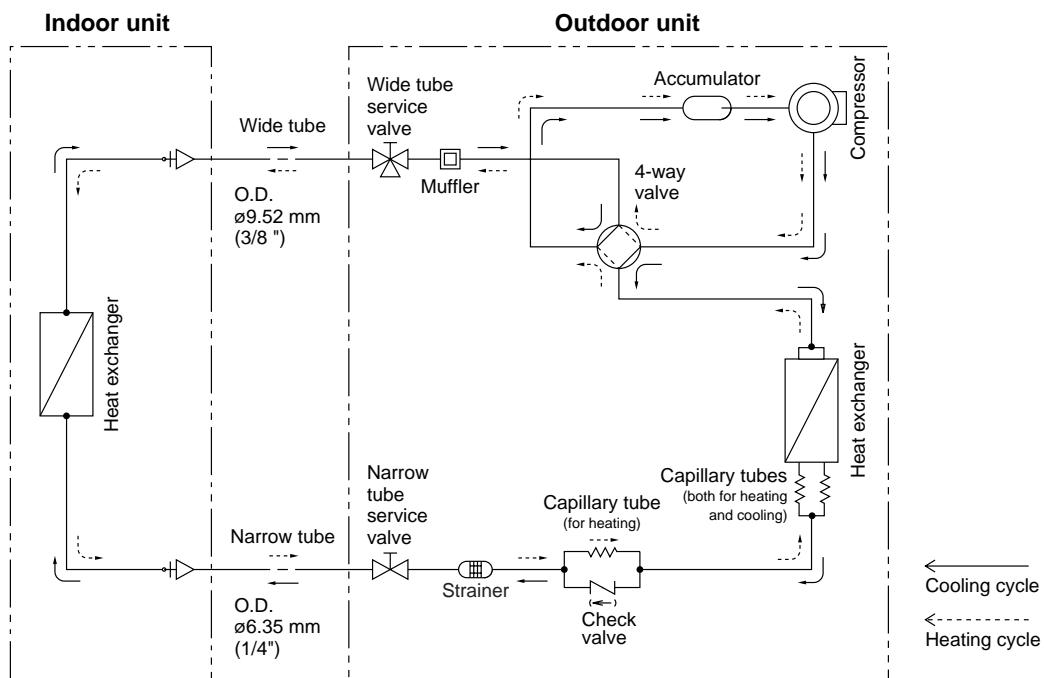


Unit : mm

4. REFRIGERANT FLOW DIAGRAM

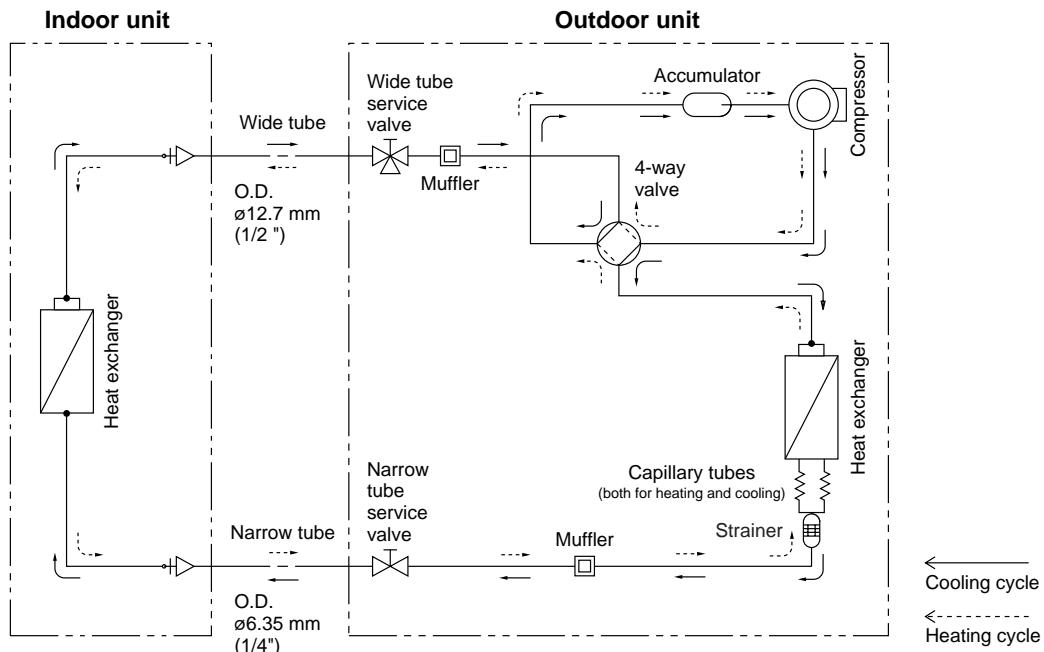
Indoor Unit

SAP-K92AH



Indoor Unit

SAP-K122AH



Insulation of Refrigerant Tubing

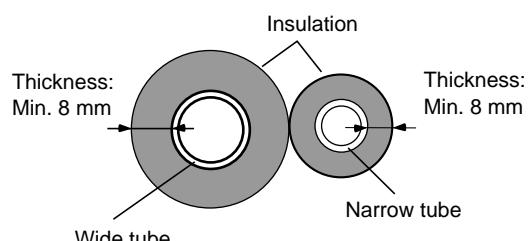
IMPORTANT

Because capillary tubing is used in the outdoor unit, both the wide and narrow tubes of this air conditioner become cold. To prevent heat loss and wet floors due to dripping of condensation, **both tubes must be well insulated** with a proper insulation material. The thickness of the insulation should be a min. 8 mm.



CAUTION

After a tube has been insulated, never try to bend it into a narrow curve because it can cause the tube to break or crack.

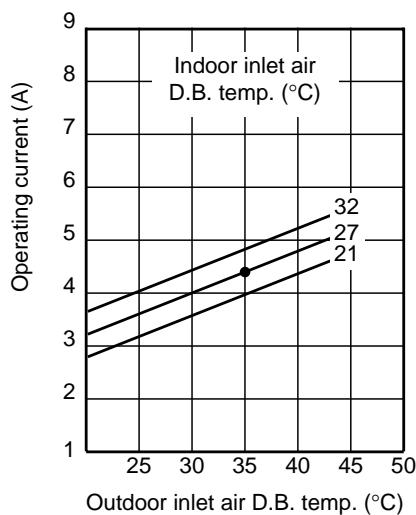


5. PERFORMANCE DATA

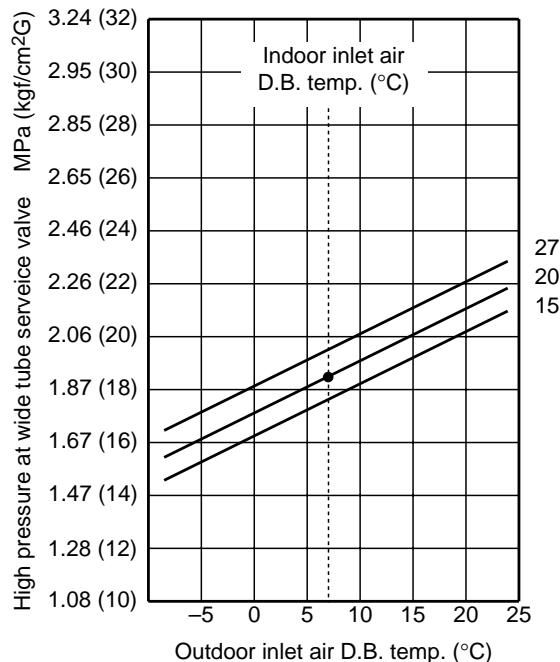
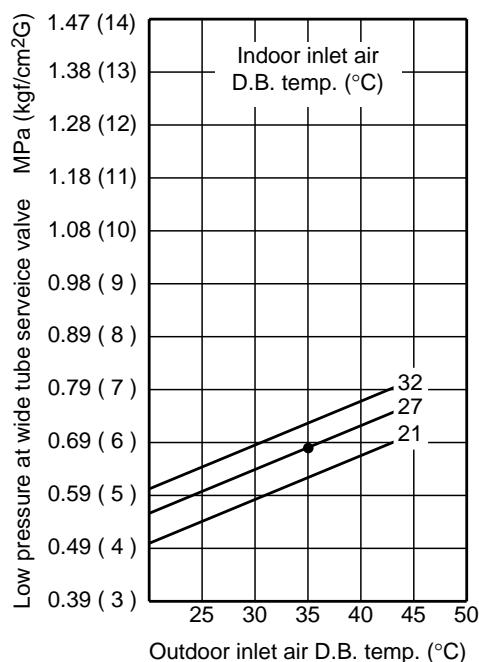
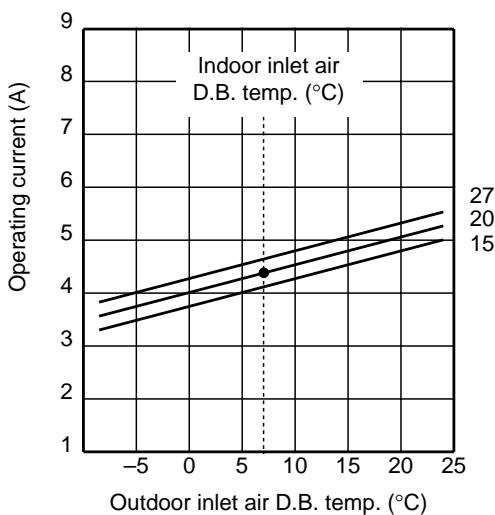
5-1. Performance charts

Indoor Unit SAP-K92AH
Outdoor Unit SAP-C92AH

■ Cooling Characteristics



■ Heating Characteristics



NOTE

- Points of Rating condition

Black dots in above charts indicate the following rating conditions.

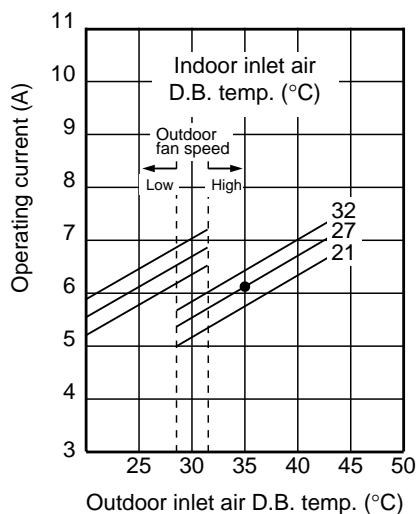
Cooling: Indoor air temperature 27°C D.B./19°C W.B.
Outdoor air temperature 35°C D.B./24°C W.B.

Heating: Indoor air temperature 20°C D.B./19°C W.B.
Outdoor air temperature 7°C D.B./6°C W.B.

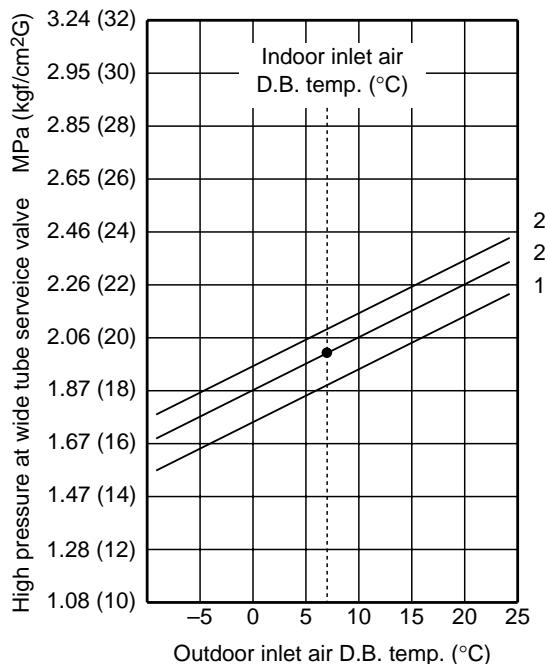
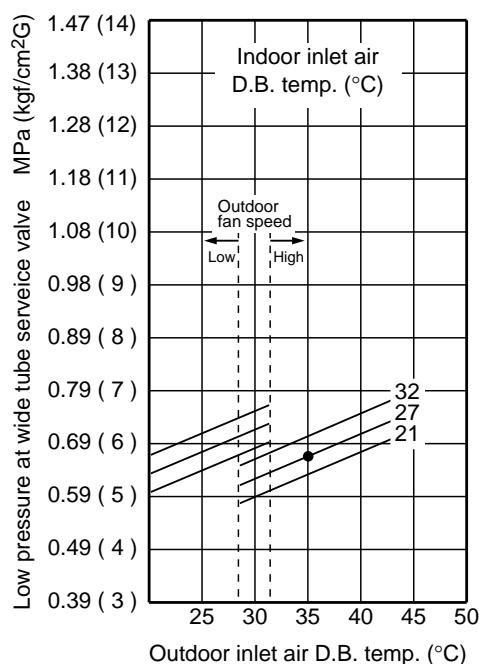
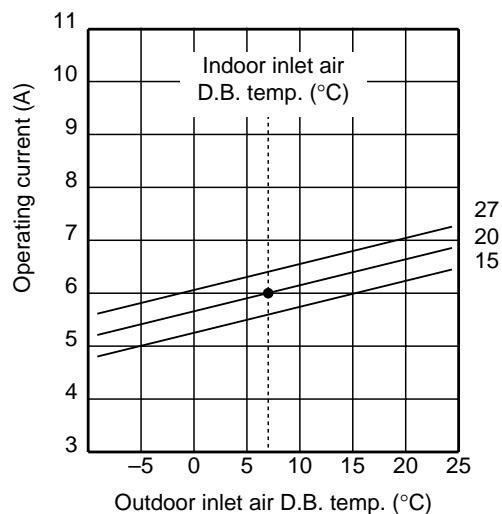
Indoor Unit
Outdoor Unit

SAP-K122AH
SAP-C122AH

■ Cooling Characteristics



■ Heating Characteristics



NOTE

- Points of Rating condition

Black dots in above charts indicate the following rating conditions.

Cooling: Indoor air temperature 27°C D.B./19°C W.B.
Outdoor air temperature 35°C D.B./24°C W.B.

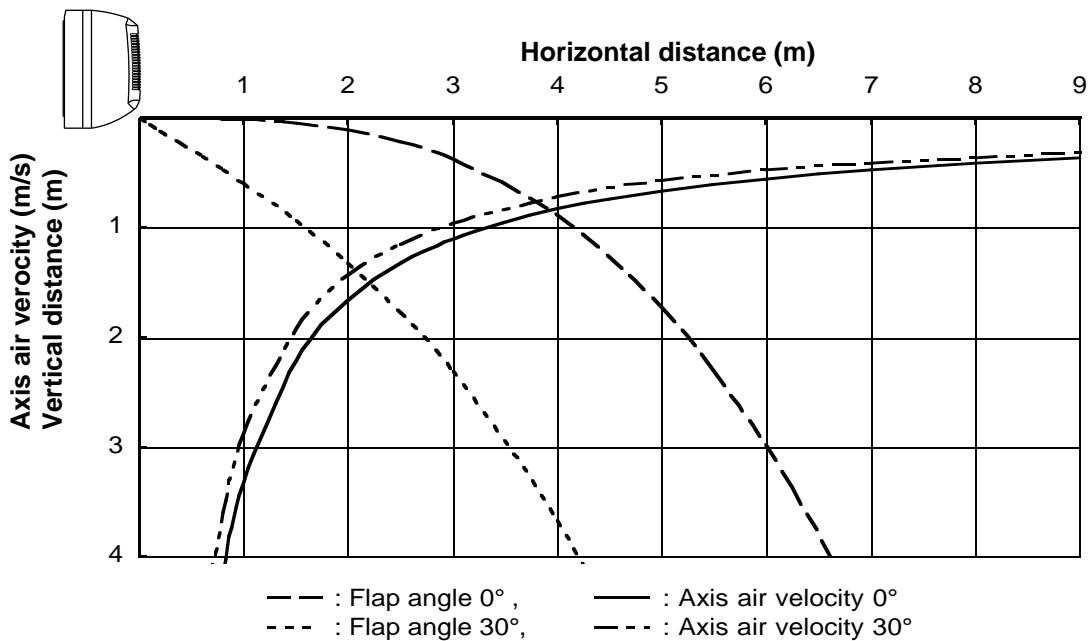
Heating: Indoor air temperature 20°C D.B.
Outdoor air temperature 7°C D.B./6°C W.B.

5-2. Air Throw Distance Chart

Indoor Unit SAP-K92AH

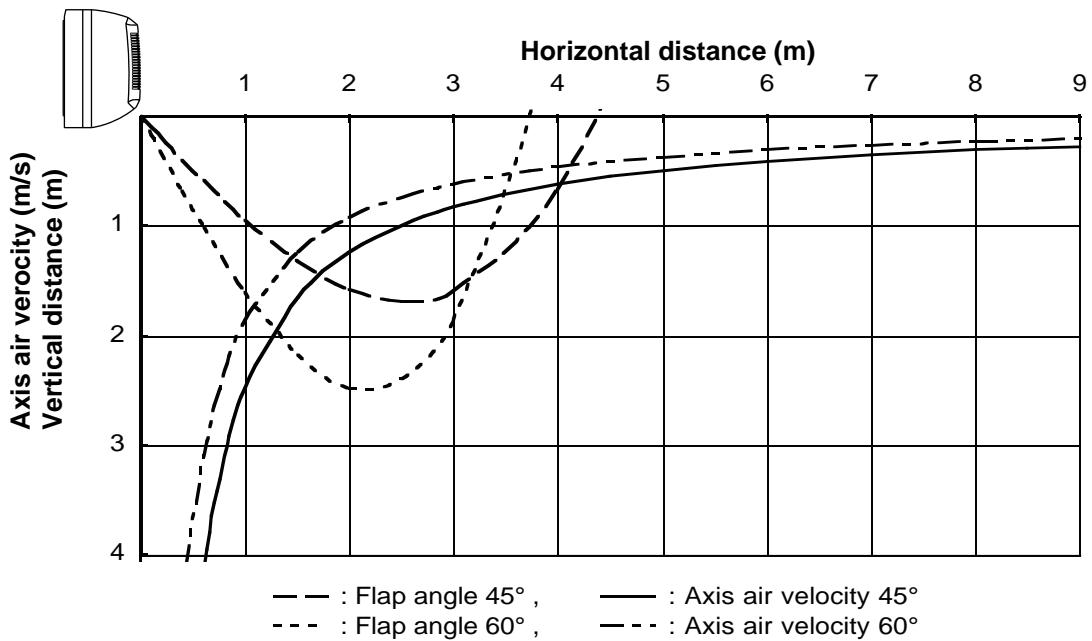
Cooling

Room air temp. : 27°C
Fan speed : High



Heating

Room air temp. : 20°C
Fan speed : High

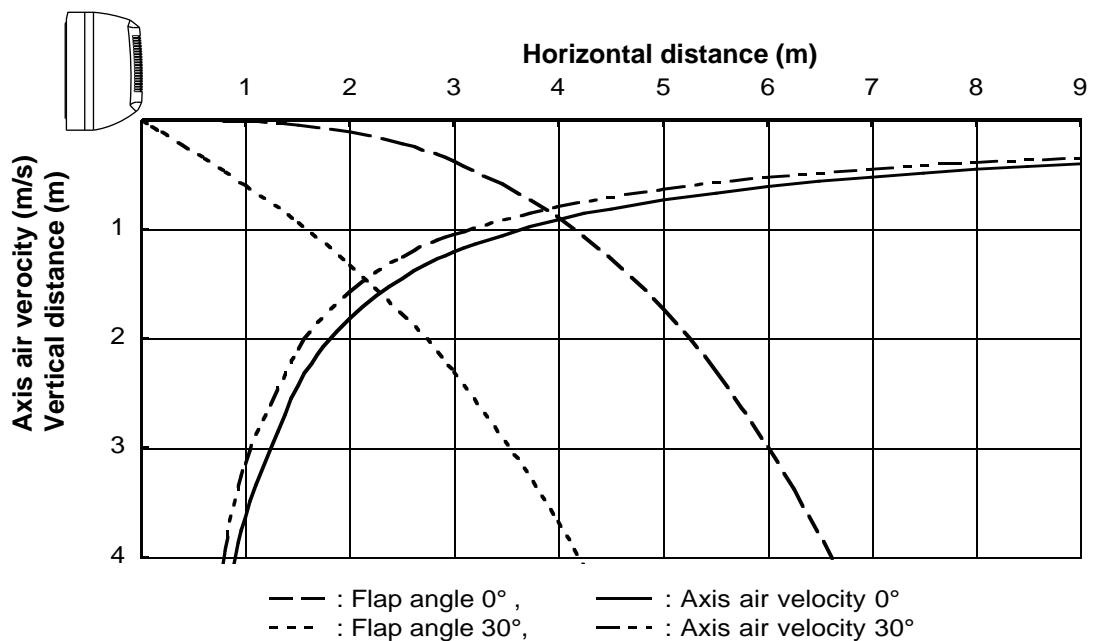


Indoor Unit

SAP-K122AH

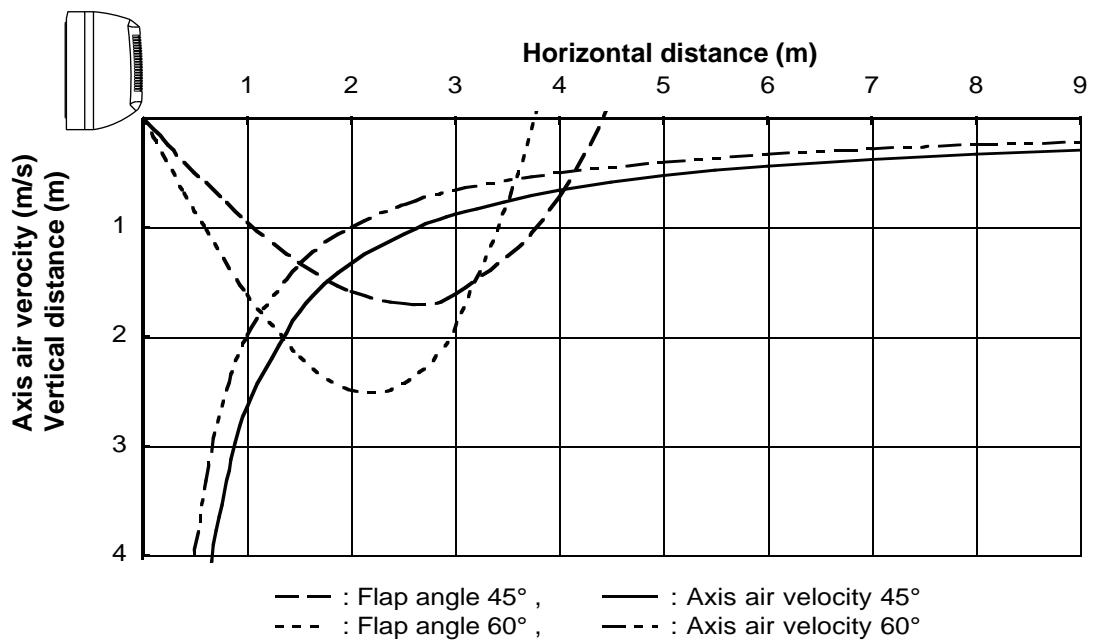
Cooling

Room air temp. : 27°C
Fan speed : High



Heating

Room air temp. : 20°C
Fan speed : High



5-3. Cooling Capacity

Indoor Unit **SAP-K92AH**
 Outdoor Unit **SAP-C92AH**

240V Single Phase 50Hz

		RATING CAPACITY		2.50 kW					
		AIR FLOW RATE		430 m ³ /h					
		EVAPORATOR		CONDENSER					
		ENT. TEMP. °C		OUTDOOR AMBIENT TEMP. °C					
W.B.	D.B.			20	25	30	35	40	43
15		TC	2.52	2.41	2.30	2.19	2.06	1.89	
		CM	0.70	0.76	0.81	0.87	0.94	1.01	
	21	SHC	1.71	1.65	1.59	1.54	1.47	1.40	
	23	SHC	1.92	1.86	1.80	1.75	1.68	1.61	
	25	SHC	2.13	2.07	2.01	1.96	1.89	1.82	
	27	SHC	2.34	2.28	2.22	2.17	2.06	1.89	
	29	SHC	2.52	2.41	2.30	2.19	2.06	1.89	
17		TC	2.70	2.59	2.47	2.35	2.21	2.03	
		CM	0.72	0.78	0.83	0.89	0.96	1.03	
	21	SHC	1.49	1.43	1.38	1.32	1.26	1.18	
	23	SHC	1.70	1.64	1.59	1.53	1.47	1.39	
	25	SHC	1.91	1.85	1.80	1.74	1.68	1.60	
	27	SHC	2.12	2.06	2.01	1.95	1.89	1.81	
	29	SHC	2.33	2.27	2.22	2.16	2.10	2.02	
19		TC	2.88	2.75	2.63	# 2.50	2.35	2.16	
		CM	0.74	0.80	0.86	0.92	0.99	1.06	
	21	SHC	1.26	1.21	1.15	1.10	1.03	0.96	
	23	SHC	1.47	1.42	1.36	1.31	1.24	1.17	
	25	SHC	1.68	1.63	1.57	1.52	1.45	1.38	
	27	SHC	1.89	1.84	1.78	1.73	1.66	1.59	
	29	SHC	2.10	2.05	1.99	1.94	1.87	1.80	
21		TC	3.05	2.92	2.78	2.65	2.49	2.29	
		CM	0.76	0.82	0.88	0.95	1.02	1.09	
	23	SHC	1.24	1.19	1.13	1.08	1.02	0.94	
	25	SHC	1.45	1.40	1.34	1.29	1.23	1.15	
	27	SHC	1.66	1.61	1.55	1.50	1.44	1.36	
	29	SHC	1.87	1.82	1.76	1.71	1.65	1.57	
	31	SHC	2.08	2.03	1.97	1.92	1.86	1.78	
23		TC	3.23	3.09	2.95	2.78	2.60	2.42	
		CM	0.78	0.84	0.90	0.97	1.05	1.12	
	25	SHC	1.21	1.16	1.10	1.04	0.98	0.91	
	27	SHC	1.42	1.37	1.31	1.25	1.19	1.12	
	29	SHC	1.63	1.58	1.52	1.46	1.40	1.33	
	31	SHC	1.84	1.79	1.73	1.67	1.61	1.54	

TC : Total Cooling Capacity (kW)

SHC : Sensible Heat Capacity (kW)

CM : Compressor Input (kW)

Rating conditions (#Mark) are

Outdoor Ambient Temp. 35°C D.B.

Indoor Unit Entering Air Temp. 27°C D.B. / 19°C W.B.

Indoor Unit **SAP-K122AH**
 Outdoor Unit **SAP-C122AH**

240V Single Phase 50Hz

		RATING CAPACITY		3.20 kW		
		AIR FLOW RATE		470 m ³ /h		
		EVAPORATOR		CONDENSER		
		ENT. TEMP. °C		OUTDOOR AMBIENT TEMP. °C		
W.B.	D.B.			30	35	40
15		TC	2.94	2.80	2.63	2.42
		CM	1.10	1.18	1.26	1.35
	21	SHC	1.96	1.89	1.80	1.69
	23	SHC	2.18	2.11	2.02	1.92
	25	SHC	2.41	2.34	2.25	2.14
	27	SHC	2.64	2.56	2.47	2.37
	29	SHC	2.86	2.79	2.63	2.42
17		TC	3.16	3.01	2.83	2.60
		CM	1.13	1.21	1.29	1.38
	21	SHC	1.73	1.65	1.57	1.46
	23	SHC	1.95	1.88	1.79	1.68
	25	SHC	2.18	2.11	2.02	1.91
	27	SHC	2.41	2.33	2.24	2.14
	29	SHC	2.63	2.56	2.47	2.36
19		TC	3.36	# 3.20	3.01	2.77
		CM	1.17	1.25	1.33	1.42
	21	SHC	1.49	1.41	1.32	1.22
	23	SHC	1.71	1.64	1.55	1.44
	25	SHC	1.94	1.86	1.77	1.67
	27	SHC	2.16	2.09	2.00	1.89
	29	SHC	2.39	2.31	2.22	2.12
21		TC	3.56	3.39	3.19	2.93
		CM	1.20	1.29	1.37	1.46
	23	SHC	1.46	1.39	1.30	1.20
	25	SHC	1.69	1.61	1.53	1.42
	27	SHC	1.91	1.84	1.75	1.65
	29	SHC	2.14	2.06	1.98	1.87
	31	SHC	2.36	2.29	2.20	2.10
23		TC	3.77	3.56	3.33	3.10
		CM	1.23	1.32	1.41	1.50
	25	SHC	1.42	1.34	1.25	1.16
	27	SHC	1.65	1.56	1.47	1.39
	29	SHC	1.87	1.79	1.70	1.61
	31	SHC	2.10	2.01	1.92	1.84

TC : Total Cooling Capacity (kW)

SHC : Sensible Heat Capacity (kW)

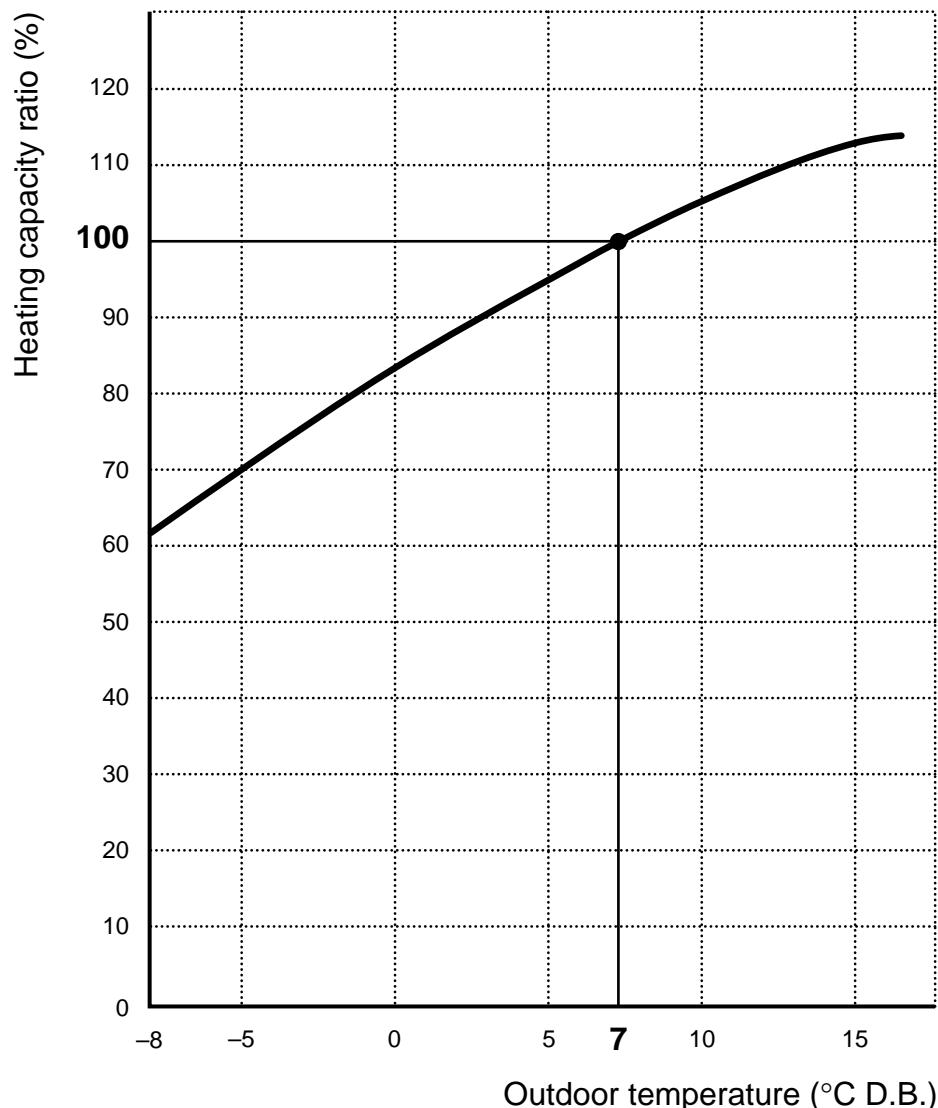
CM : Compressor Input (kW)

Rating conditions (#Mark) are

Outdoor Ambient Temp. 35°C D.B.

Indoor Unit Entering Air Temp. 27°C D.B. / 19°C W.B.

5-4. Heating Capacity



NOTE

- 1) ●... Point of Rating condition
Black dot in the chart indicate the following rating condition.
Indoor : 20°C D.B.
Outdoor : 7°C D.B. / 6°C W.B.
- 2) Above characteristics indicate instantaneous operation, which does not take into account defrost operation.
- 3) Fan speed : High
- 4) Because this air conditioner heats a room by drawing in the heat of the outside air (heat pump system), the heating efficiency will fall off when the outdoor temperature is very low. If sufficient heat cannot be obtained with this air conditioner, use another heating appliance in conjunction with it.

6. ELECTRICAL DATA

6-1. Electrical Characteristics

Indoor Unit **SAP-K92AH**
 Outdoor Unit **SAP-C92AH**

COOLING

	Indoor Unit	Outdoor Unit			Complete Unit
		Fan Motor	Fan Motor	Compressor	
Performance at	220 – 240V Single phase 50Hz				
Rating Conditions	Running Amps. A	0.17 / 0.18	0.24 / 0.25	3.89 / 3.97	4.3 / 4.4
	Power Input kW	0.034 / 0.040	0.052 / 0.060	0.844 / 0.920	0.93 / 1.02
Full Load Conditions	Running Amps. A	0.17 / 0.18	0.24 / 0.25	5.09 / 4.87	5.5 / 5.3
	Power Input kW	0.034 / 0.040	0.052 / 0.060	1.094 / 1.120	1.18 / 1.22

Rating Conditions : Indoor Air Temperature 27°C D.B. / 19°C W.B.
 Outdoor Air Temperature 35°C D.B.

Full Load Conditions : Indoor Air Temperature 32°C D.B. / 23°C W.B.
 Outdoor Air Temperature 43°C D.B.

HEATING

	Indoor Unit	Outdoor Unit			Complete Unit
		Fan Motor	Fan Motor	Compressor	
Performance at	220 – 240V Single phase 50Hz				
Rating Conditions	Running Amps. A	0.17 / 0.18	0.24 / 0.25	3.89 / 3.97	4.3 / 4.4
	Power Input kW	0.034 / 0.040	0.052 / 0.060	0.834 / 0.920	0.92 / 1.02
Full Load Conditions	Running Amps. A	0.17 / 0.18	0.24 / 0.25	5.19 / 4.97	5.6 / 5.4
	Power Input kW	0.034 / 0.040	0.052 / 0.060	1.084 / 1.110	1.17 / 1.21

Rating Conditions : Indoor Air Temperature 20°C D.B.
 Outdoor Air Temperature 7°C D.B. / 6°C W.B.

Full Load Conditions : Indoor Air Temperature 27°C D.B.
 Outdoor Air Temperature 24°C D.B. / 18°C W.B.

Indoor Unit **SAP-K122AH**
 Outdoor Unit **SAP-C122AH**

COOLING

	Indoor Unit		Outdoor Unit		Complete Unit	
	Fan Motor	Compressor	Fan Motor	Compressor		
Performance at	220 – 240V Single phase 50Hz					
Rating Conditions	Running Amps. A	0.17 / 0.18	0.24 / 0.25	5.39 / 5.67	5.8 / 6.1	
	Power Input kW	0.034 / 0.040	0.052 / 0.060	1.134 / 1.250	1.22 / 1.35	
Full Load Conditions	Running Amps. A	0.17 / 0.18	0.24 / 0.25	6.89 / 6.77	7.3 / 7.2	
	Power Input kW	0.034 / 0.040	0.052 / 0.060	1.464 / 1.500	1.55 / 1.60	

Rating Conditions : Indoor Air Temperature 27°C D.B. / 19°C W.B.
 Outdoor Air Temperature 35°C D.B.

Full Load Conditions : Indoor Air Temperature 32°C D.B. / 23°C W.B.
 Outdoor Air Temperature 43°C D.B.

HEATING

	Indoor Unit		Outdoor Unit		Complete Unit	
	Fan Motor	Compressor	Fan Motor	Compressor		
Performance at	220 – 240V Single phase 50Hz					
Rating Conditions	Running Amps. A	0.17 / 0.18	0.24 / 0.25	5.49 / 5.57	5.9 / 6.0	
	Power Input kW	0.034 / 0.040	0.052 / 0.060	1.144 / 1.220	1.23 / 1.32	
Full Load Conditions	Running Amps. A	0.17 / 0.18	0.24 / 0.25	6.79 / 6.67	7.2 / 7.1	
	Power Input kW	0.034 / 0.040	0.052 / 0.060	1.394 / 1.450	1.48 / 1.55	

Rating Conditions : Indoor Air Temperature 20°C D.B.
 Outdoor Air Temperature 7°C D.B. / 6°C W.B.

Full Load Conditions : Indoor Air Temperature 27°C D.B.
 Outdoor Air Temperature 24°C D.B. / 18°C W.B.

6-2. Electric Wiring Diagrams

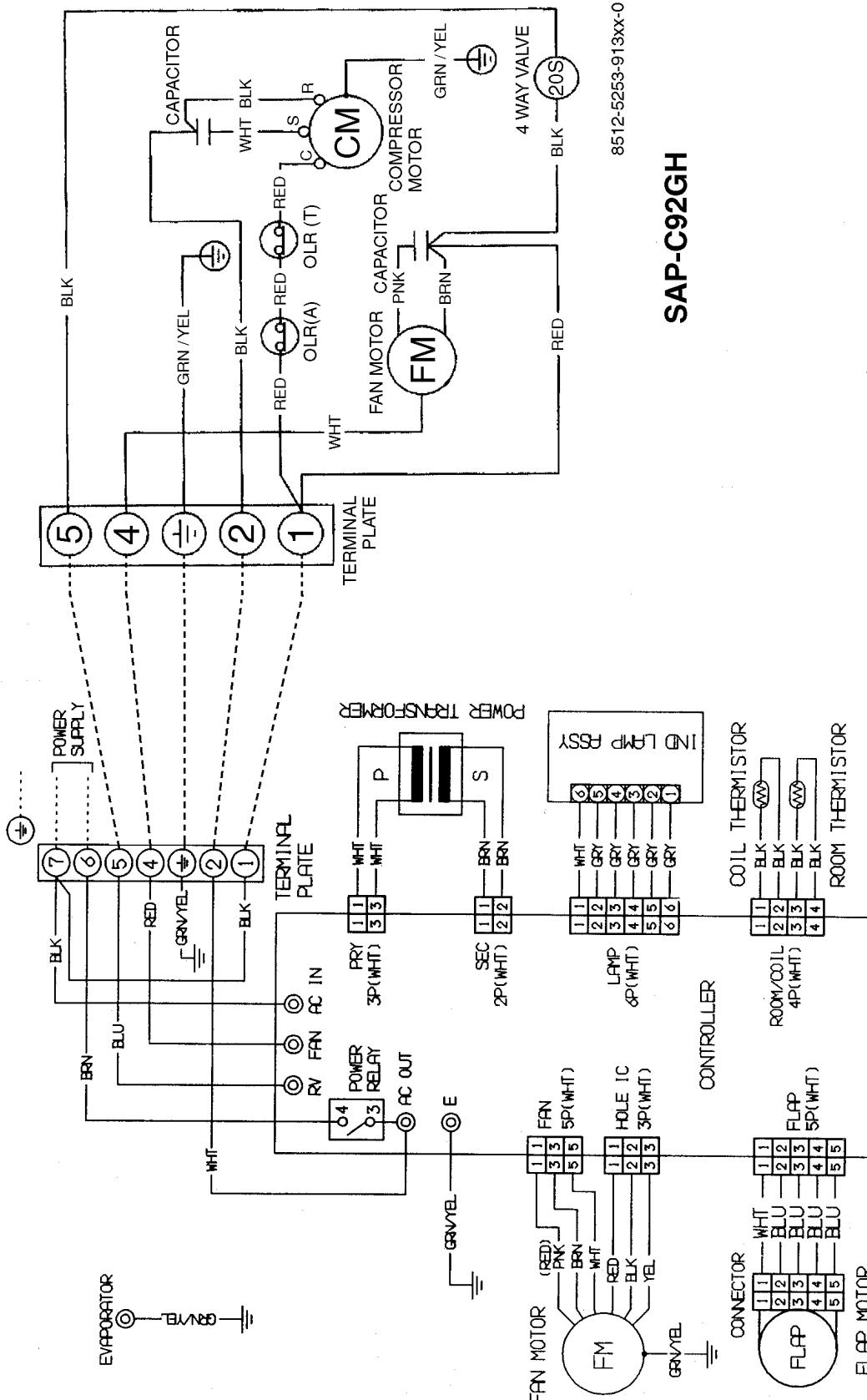
Indoor Unit
Outdoor Unit

SAP-K92AH
SAP-C92AH



WARNING

To avoid electrical shock hazard, be sure to disconnect power before checking, servicing and/or cleaning any electrical parts.



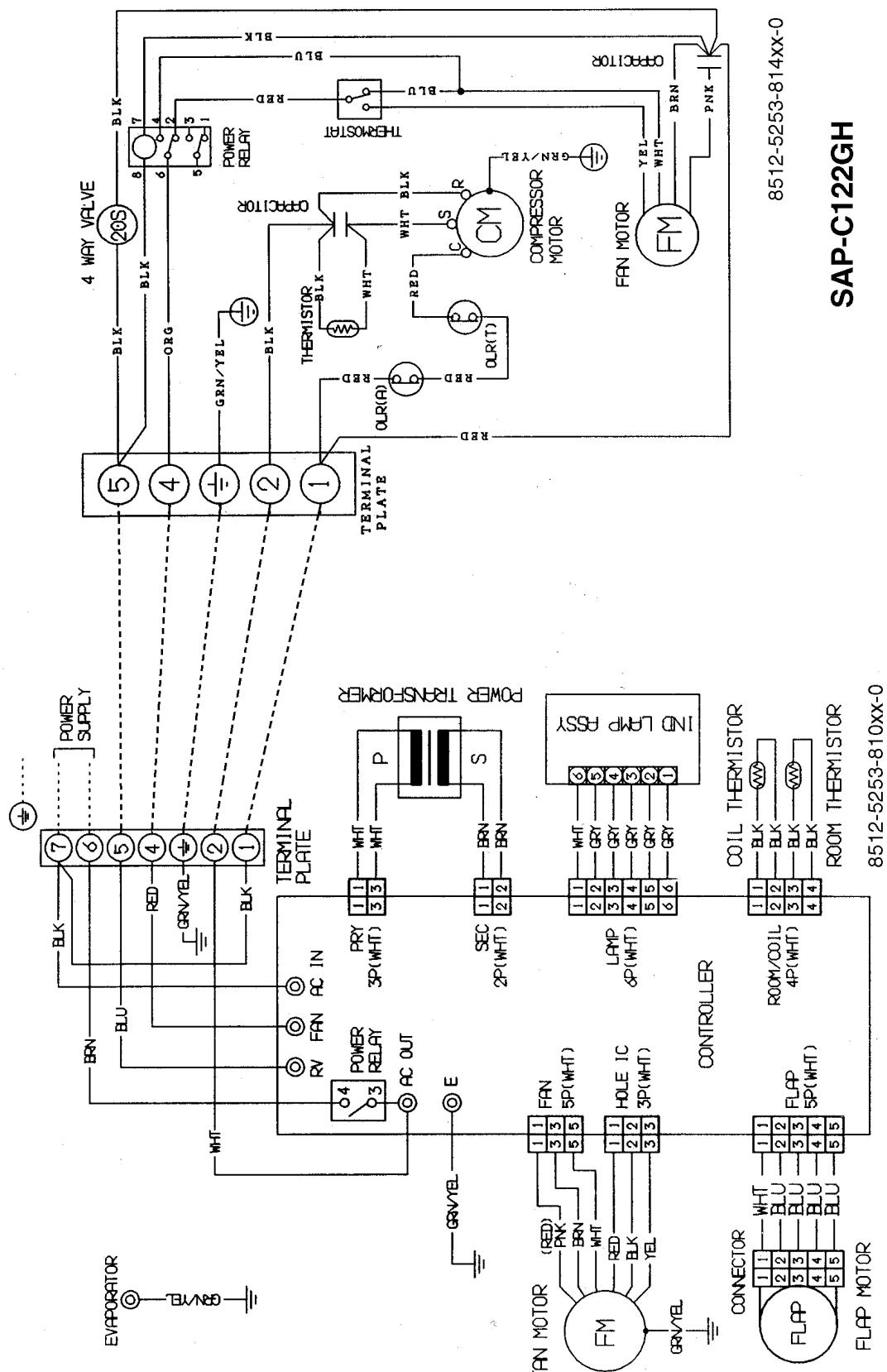
Indoor Unit Outdoor Unit

SAP-K122AH
SAP-C122AH



WARNING

To avoid electrical shock hazard, be sure to disconnect power before checking, servicing and/or cleaning any electrical parts.



7. INSTALLATION INSTRUCTIONS

7-1. Installation Site Selection

Indoor Unit



WARNING

To prevent abnormal heat generation and the possibility of fire, don't place obstacles, enclosures and grills in front of or surrounding the air conditioner in a way that may block air flow.

AVOID:

- direct sunlight.
- nearby heat sources that may affect performance of the unit.
- areas where leakage of flammable gas may be expected.
- places where large amounts of oil mist exist.

DO:

- select an appropriate position from which every corner of the room can be uniformly air-conditioned. (High on a wall is best)
- select a location that will hold the weight of the unit.
- select a location where tubing and drain pipe have the shortest run to the outside.
- allow room for operation and maintenance as well as unrestricted air flow around the unit. (Fig. 1)
- install the unit within the maximum elevation difference (H) above or below the outdoor unit and within a total tubing length (L) from the outdoor unit as detailed Table 1 and Fig. 2a.

● Wall-mounted Type

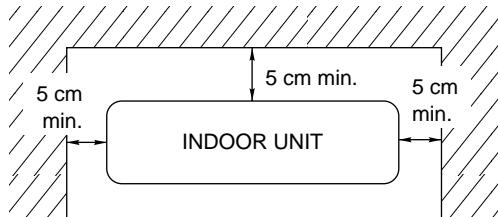


Fig.1

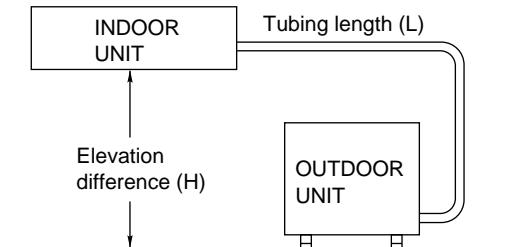


Fig. 2a



CAUTION

For stable operation of the air conditioner, do not install wall-mounted type indoor units under 1.5m from floor level.

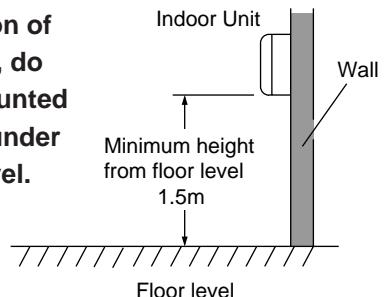


Fig. 2b

Table 1

Model	Max. Allowable Tubing Length at Shipment (m)	Limit of Tubing Length (L) (m)	Limit of Elevation Difference (H) (m)	Required Amount of Additional Refrigerant (g/m)*
C122	7.5	20	7	25

* If total tubing length becomes 7.5 to 20 (max.), charge additional refrigerant (R22) by 25 g/m.
No additional charge of compressor oil is necessary.

Outdoor Unit

AVOID:

- heat sources, exhaust fans, etc. (Fig. 3)
- damp, humid or uneven locations.

DO:

- choose a place as cool as possible.
- choose a place that is well ventilated.
- allow enough room around the unit for air intake/exhaust and possible maintenance. (Figs. 4a and 4b)
- provide a solid base (concrete block, 10 X 40 cm beams or equal), a minimum of 10 cm above ground level to reduce humidity and protect the unit against possible water damage and decreased service life. (Fig.5)
- use lug bolts or equal to bolt down unit, reducing vibration and noise.

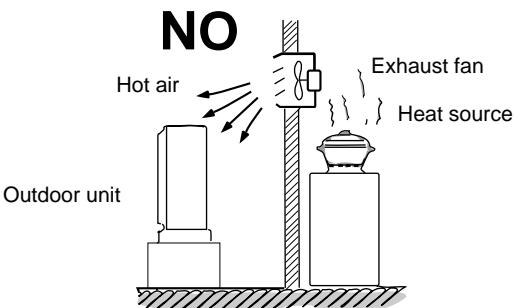
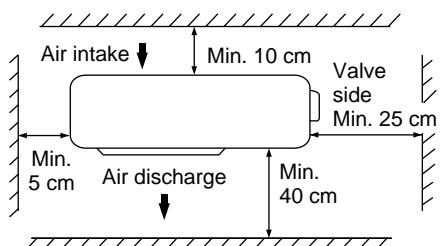


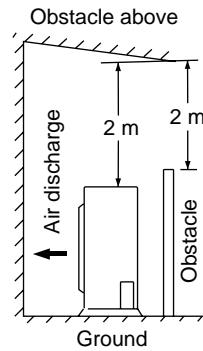
Fig. 3

Required space around the unit.



Top View

Fig. 4a



Side View

Fig. 4b

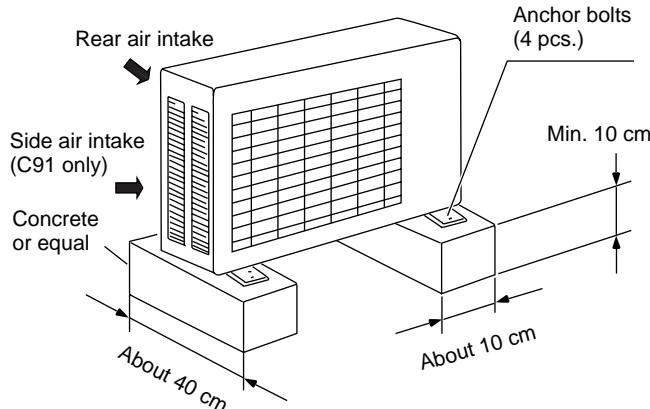


Fig. 5

7-2. Remote Control Unit Installation Position

The remote control unit can be operated from either a non-fixed position or a wall-mounted position.

To ensure that the air conditioner operates correctly, do not install the remote control unit in the following places:

- In direct sunlight
- Behind a curtain or other place where it is covered
- More than 8 m away from the air conditioner
- In the path of the air conditioner's airstream
- Where it may become extremely hot or cold
- Where it may be subject to electrical or magnetic interference

6-1. When attaching to wall (Fig.6a)

- 1) Confirm the indoor unit beeps when the ON/OFF button is pressed at the wall location where the remote control unit is to be attached, then attach the holder to the wall.
- 2) When taking out the remote control unit, pull it from the holder.

When using the remote control unit

- Point the transmission portion of the remote control unit at the receiver area of the indoor unit when operating the remote control unit, and during operation of the air conditioner.
- Do not place objects which may block the transmitted signals between the receiver and the remote control unit.

When mounting the remote control unit to prevent theft (Fig.6b)

- 1) Attach the holder to the wall with one of the screws (using only the hole in the top of the holder).
- 2) Remove the cover of the remote control unit and take out the batteries. Next, place the remote control unit in the holder.
- 3) Fasten both the remote control unit and holder to the wall with the remaining screw (using the hole in the bottom of the holder).
- 4) Install the batteries in the remote control unit and close the cover.

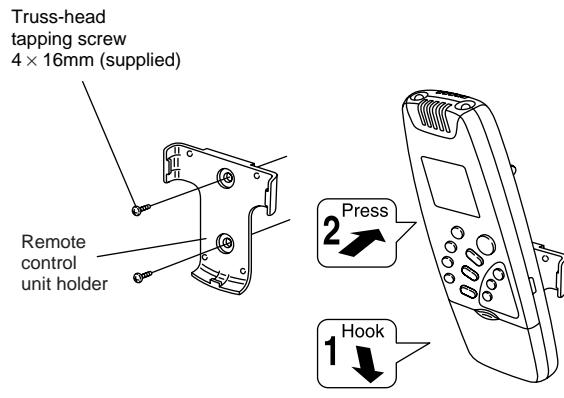


Fig.6a

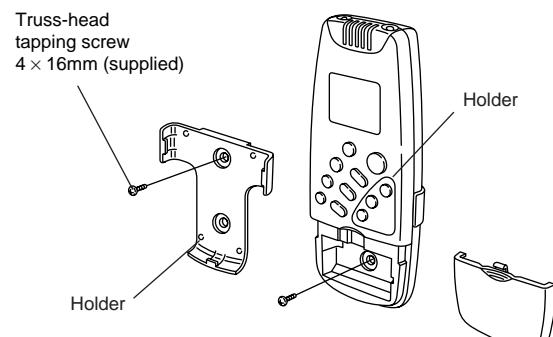


Fig.6b

7-3. Recommended Wire Length and Diameter

Regulations on wiring diameter differ from locality to locality. For field wiring requirements, please refer to your local electrical codes. Carefully observe these regulations when carrying out the installation.

Table 2 lists recommended wire lengths and cross section area for power supply systems.

Table 2

Model	Cross Sectional Area (mm ²)	(A) + (B)	(A) Power Supply Wiring Length (m) (B) Power Line (m)	Fuse or Circuit Breaker Capacity
		2	3.5	
C92	33	51		
C122	27	41		10A

NOTE

Refer to the WIRING SYSTEM DIAGRAM for the meaning of "A" and "B" in Table 2.



WARNING

- Be sure to comply with local codes on running the wire from the indoor unit to the outdoor unit (size of wire and wiring method, etc.).
- Each wire must be firmly connected.
- No wire should be allowed to touch refrigerant tubing, the compressor, or any moving part.



WARNING

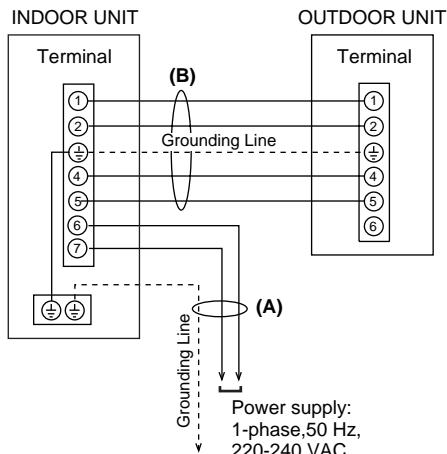
To avoid the risk of electric shock, each air conditioner unit must be grounded.



CAUTION

- Be sure to connect the power supply line to the indoor unit as shown in the wiring diagram. The outdoor unit draws its power from the indoor unit.

WIRING SYSTEM DIAGRAM



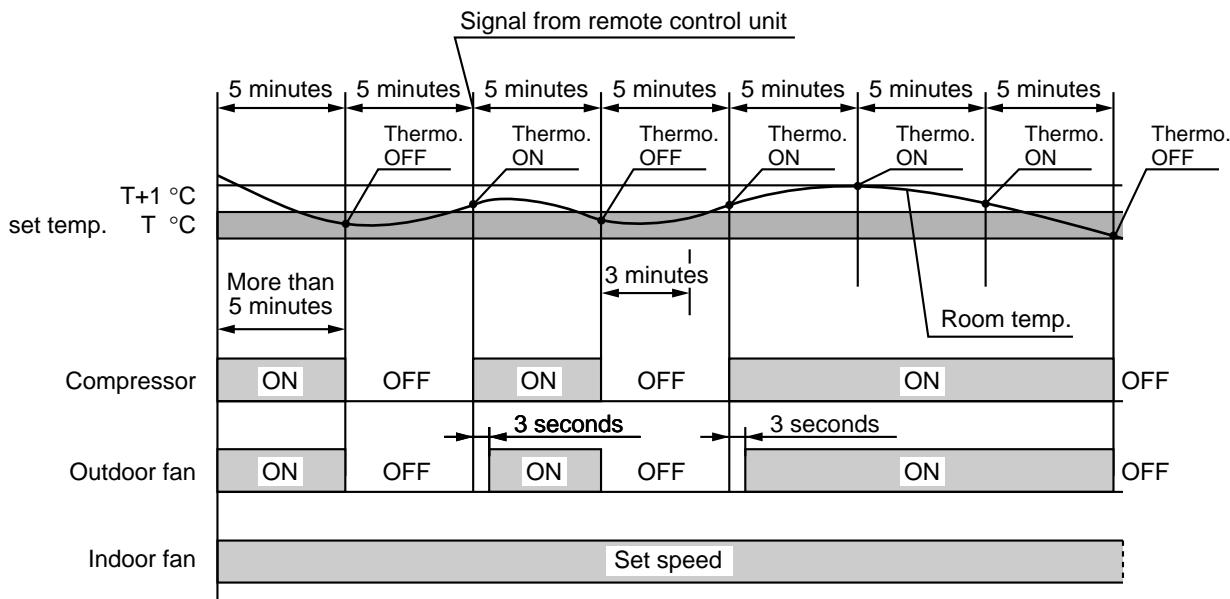
Power supply:
1-phase, 50 Hz,
220-240 VAC

8. FUNCTION

8-1. Room Temperature Control

■ Cooling

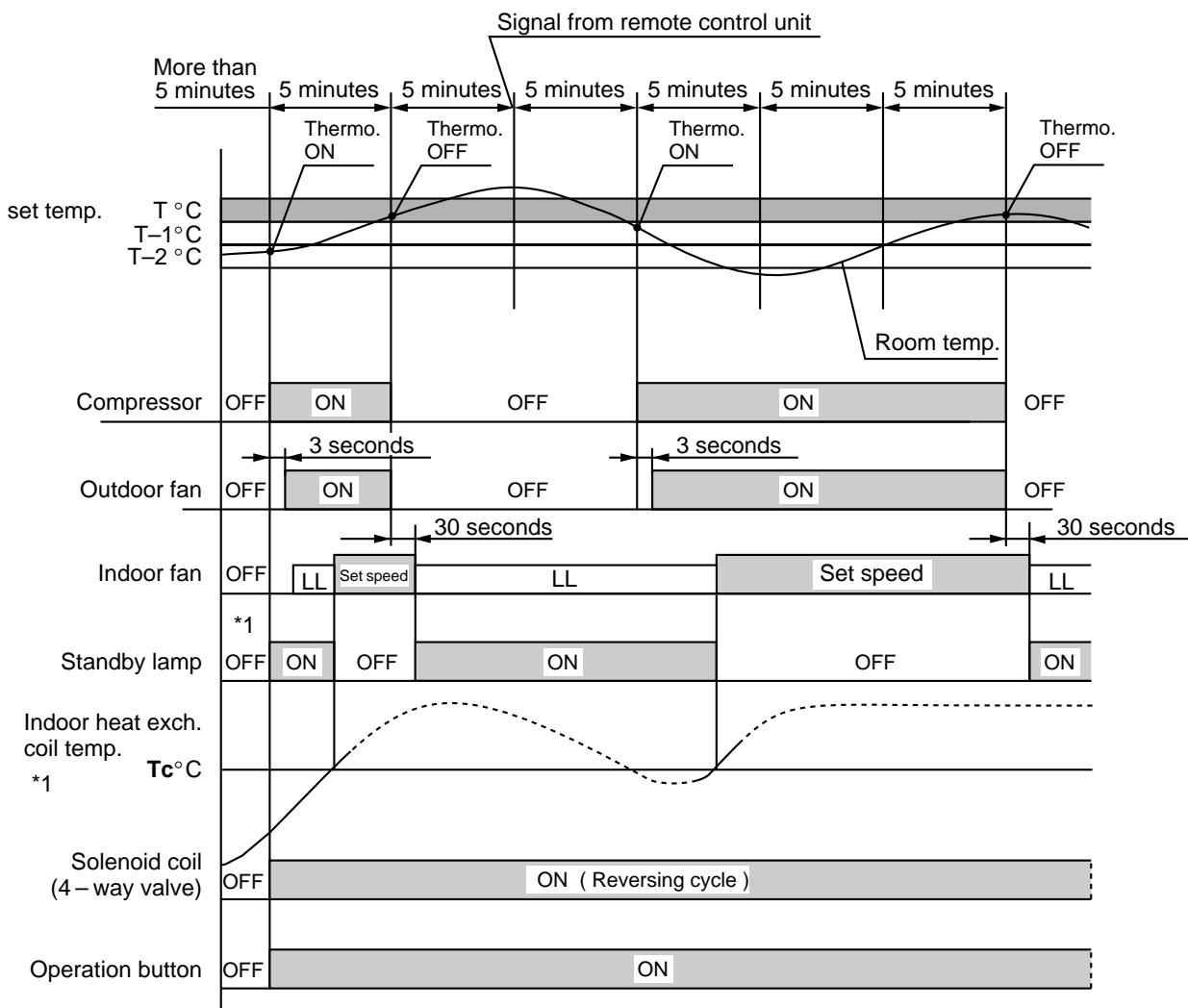
- Room temperature control is obtained by cycling the compressor ON and OFF under control of the room temperature sensor in the remote control unit.
- The room temperature (and other information) is transmitted every 5 minutes by the remote control unit to the controller in the indoor unit.



- The control circuit will not attempt to turn the compressor ON until the compressor has been OFF for at least 3 minutes. To protect the compressor from stalling out when trying to start against the high side refrigerant pressure, the control circuit has a built-in automatic time delay to allow the internal pressure to equalize.
- As a protective measure, the control circuit switches the compressor OFF after 5 minutes or more of compressor operation.
- Thermo. ON : When the room temperature is above $T + 1^\circ\text{C}$ ($T^\circ\text{C}$ is set temperature).
Compressor → ON
- Thermo. OFF : When the room temperature is equal to or below set temperature $T^\circ\text{C}$.
Compressor → OFF

■ Heating

- Room temperature control is obtained by cycling the compressor ON and OFF under control of the room temperature sensor in the remote control unit.
- The room temperature (and other information) is transmitted every 5 minutes by the remote control unit to the controller in the indoor unit.



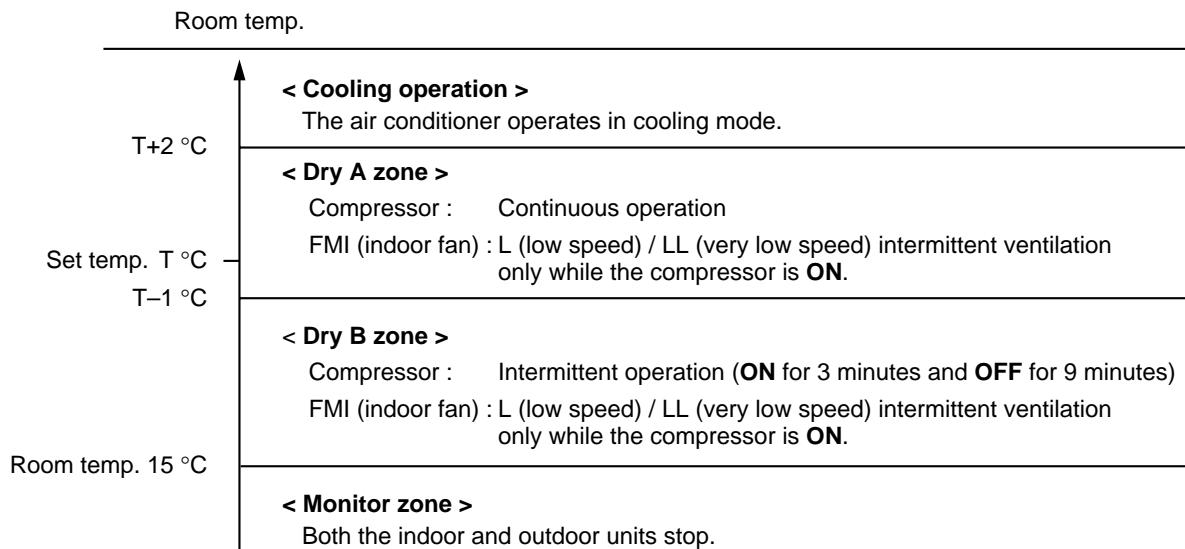
- The control circuit will not attempt to turn the compressor ON until the compressor has been OFF for at least 5 minutes. To protect the compressor from stalling out when trying to start against the high side refrigerant pressure, the control circuit has a built-in automatic time delay to allow the internal pressure to equalize.
- As a protective measure, the control circuit switches the compressor OFF after 5 minutes or more of compressor operation.
- Thermo. ON : When the room temperature is below $T - 1^{\circ}\text{C}$ ($T^{\circ}\text{C}$ is set temperature).
Compressor → ON
- Thermo. OFF : When the room temperature is equal to or above set temperature $T^{\circ}\text{C}$.
Compressor → OFF

NOTE

*1: Refer to "8-7 Cold Draft Prevention".

8-2. Dry Operation (Dehumidification)

- Dry operation uses the ability of the cooling cycle to remove moisture from the air, but by running at low level to dehumidify without greatly reducing the room temperature. The air conditioner repeats the cycle of turning ON and OFF automatically as shown in the chart below according to the room temperature.



NOTE

- Intermittent ventilation occurs by switching the indoor fan speed between L(low) ↔ LL(very low).
- When the compressor stops, the indoor fan stops as well.
- DRY operation does not occur when the room temperature is under 15°C, which is the monitor zone.

8-3. Automatic Switching between Cooling and Heating

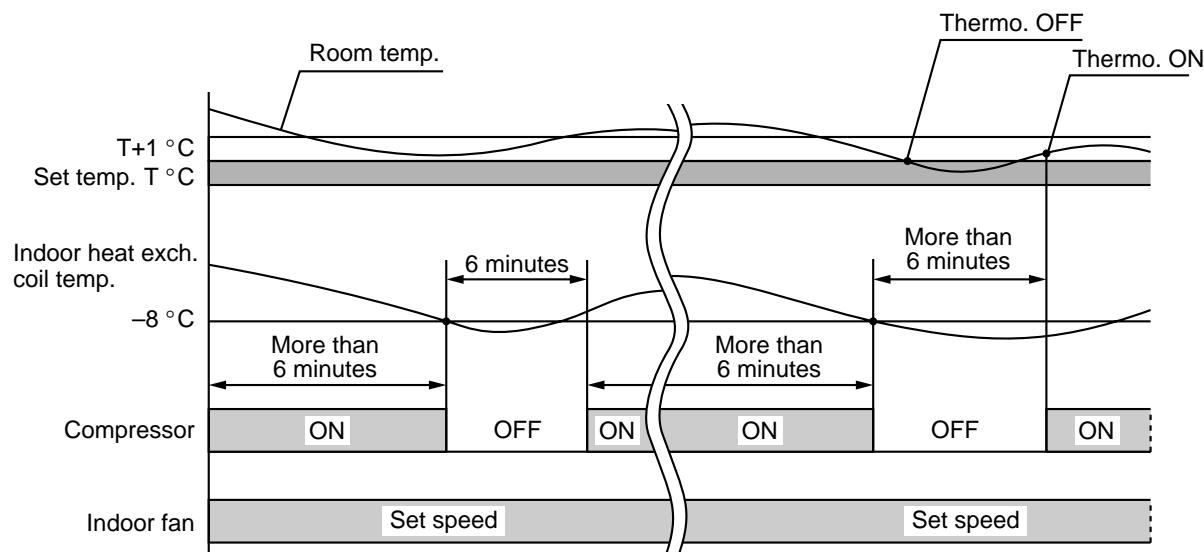
- When AUTO mode is selected, the microprocessor calculates the difference between the set temperature and the room temperature, and automatically switches to COOLING or HEATING mode to maintain the desired temperature.

Room temp. \geq Set temp. \rightarrow COOL
Room temp. $<$ Set temp. \rightarrow HEAT

This means that if the room temperature is **higher than or equal to** the set temperature, **COOLING** operation begins. If the room temperature is **lower than** the set temperature, **HEATING** operation begins.

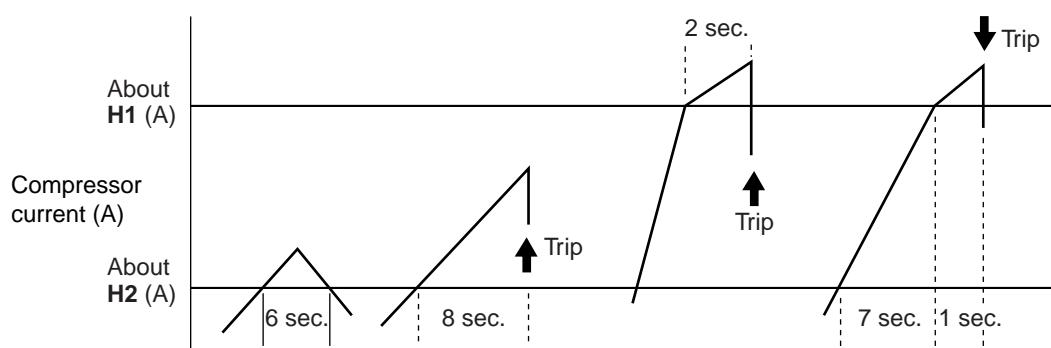
8-4. Freeze Prevention (Cooling and Dry)

- This function prevents freezing of the indoor heat exchange coil.
- When the compressor has been running for 6 minutes or more and the temperature of the indoor heat exchange coil falls below -0.8°C , the control circuit stops the compressor for at least 6 minutes. The compressor does not start again until the temperature rises above 8°C or 6 minutes has elapsed.



8-5. Compressor Overcurrent Protection (Cooling, Dry and Heating)

- This function prevents the compressor from being damaged by overcurrent.
- When the compressor current exceeds either **H1(A)** for 2 seconds or **H2(A)** for 8 seconds, both compressor and outdoor fan stop (**Trip**). At the same time, operation lamp in front of the indoor unit flashes.
- After 3 minutes, this function automatically releases and resumes operation until tripping repeats 8 times. If the tripping repeats 9 times or more, the unit stops its operation.



NOTE

The operation temperature shown as **H1** and **H2** in the chart above differ by models.

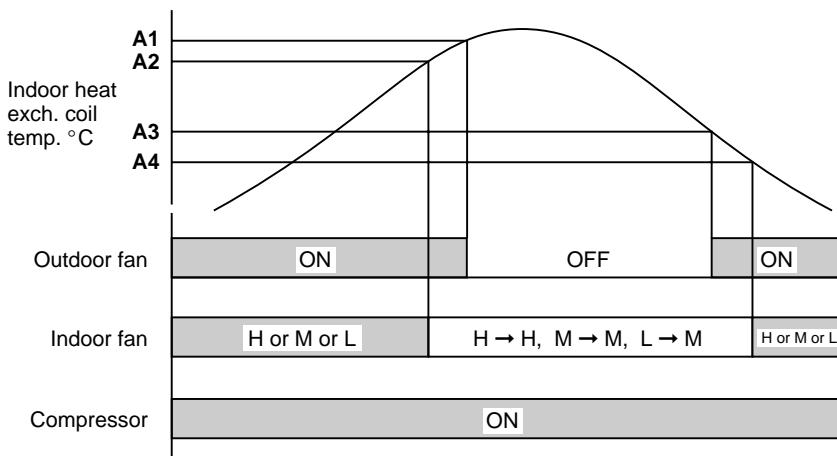
	SAP-K92AH	SAP-K122AH
H1	16	22
H2	7	10

8-6. Overload Prevention (Heating)

- Overload prevention prevents overheating of the indoor heat exchange coil. This function works either when the temperature of indoor heat exchange coil goes up or compressor current rises to a certain level.

■ Temperature of indoor heat exchange coil sensor

- When the temperature of the indoor heat exchange coil rises above **A2°C**, and if the indoor fan is L (low speed), then the fan speed changes from L (low speed) to M (medium speed).
- When the temperature of the indoor heat exchange coil rises above **A1°C**, the outdoor fan stops.



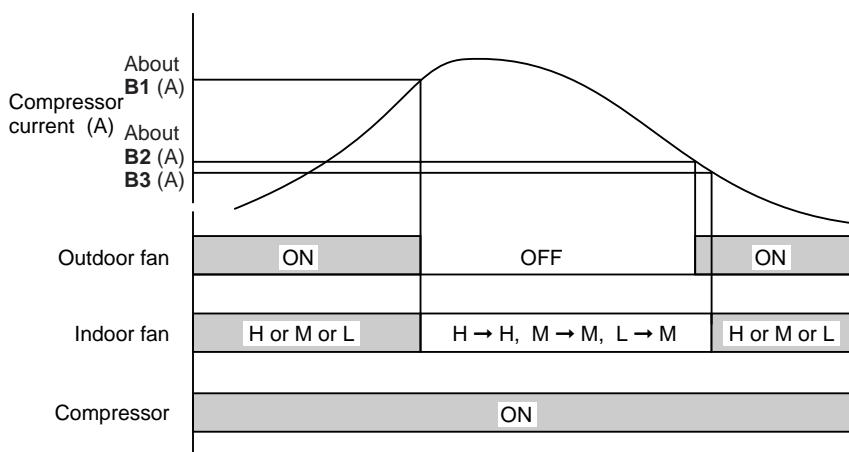
NOTE

The operation temperature shown as **A1**, **A2**, **A3** and **A4** in the chart left differ by models.

	SAP-K92AH	SAP-K122AH
A1	58	54
A2	55	52
A3	49	45
A4	46	42

■ Compressor current detection

- When the compressor current rises above 6.5(A), and if the indoor fan is L (low speed), then the fan speed changes from L (low speed) to M (medium speed). At the same time, the outdoor fan stops its operation.
- When the compressor current drops to 4.4(A), the outdoor fan resumes its operation.
- When the compressor current drops below 4.4(A), indoor fan returns to operate in set speed.



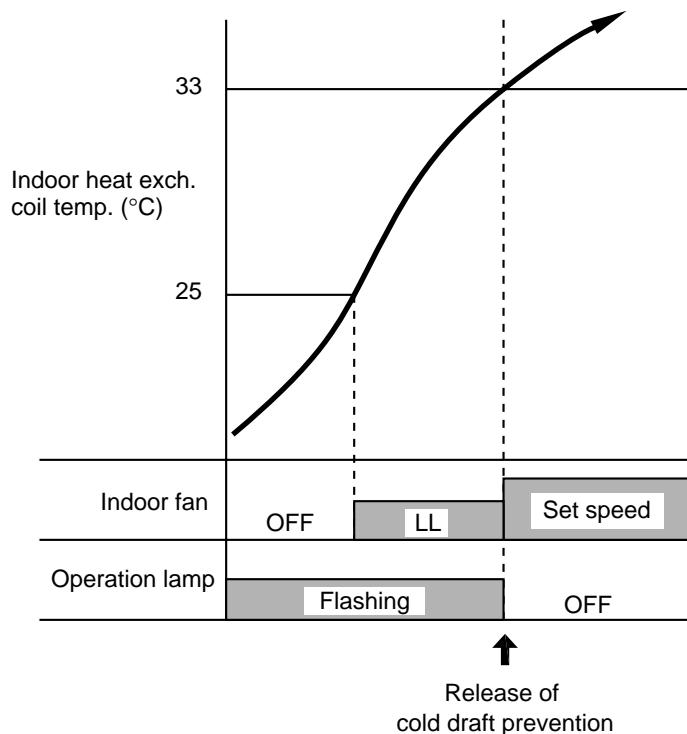
NOTE

The operation temperature shown as **B1**, **B2** and **B3** in the chart left differ by models. **B2** and **B3** are the same value in these models.

	SAP-K92AH	SAP-K122AH
B1	6.5	9.5
B2	4.4	6.5
B3	4.4	6.5

8-7. Cold Draft Prevention (Heating)

- This function controls indoor fan speed so a strong draft of cold air will not blow out before the indoor heat exchange coil have sufficiently warmed up.
- OPERATION lamp on front of the indoor unit flashes when this function is working.
- Indoor fan operates in LL until indoor heat exchange coil temperature reaches 33°C.
- In case of after releasing the defrosting, indoor fan halt its operation until the coil temperature reach 33°C.
- When the coil temperature rises above 33°C, indoor fan operates in set speed.



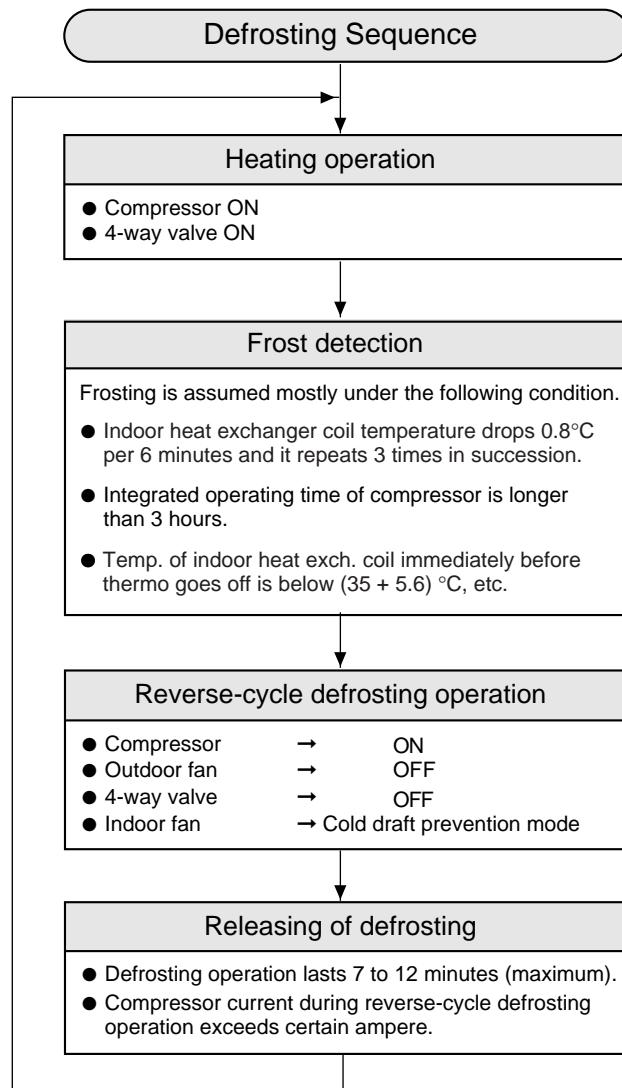
NOTE

The operation temperature shown as **Tc** in the chart above differ by models.

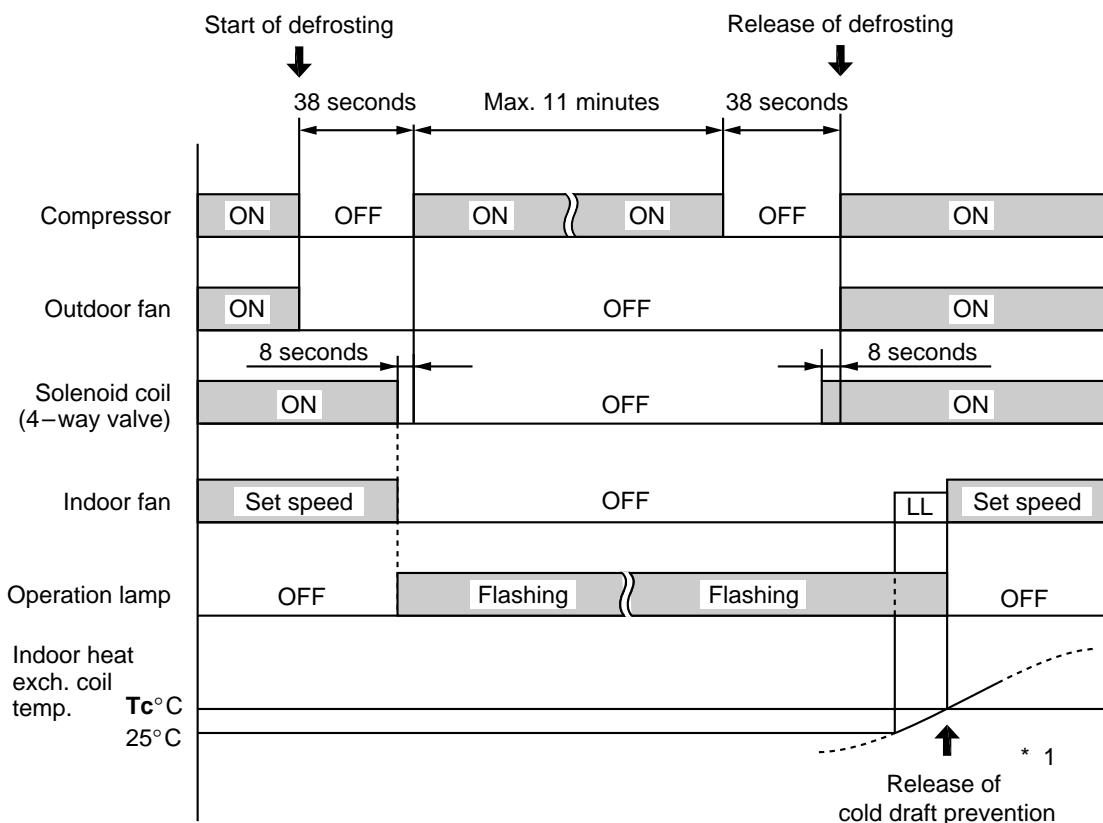
	SAP-K92AH	SAP-K122AH
Tc	34	33

8-8. Defrosting Operation (Heating)

■ Reverse-cycle Defrosting



■ Defrosting Mode Timing Chart

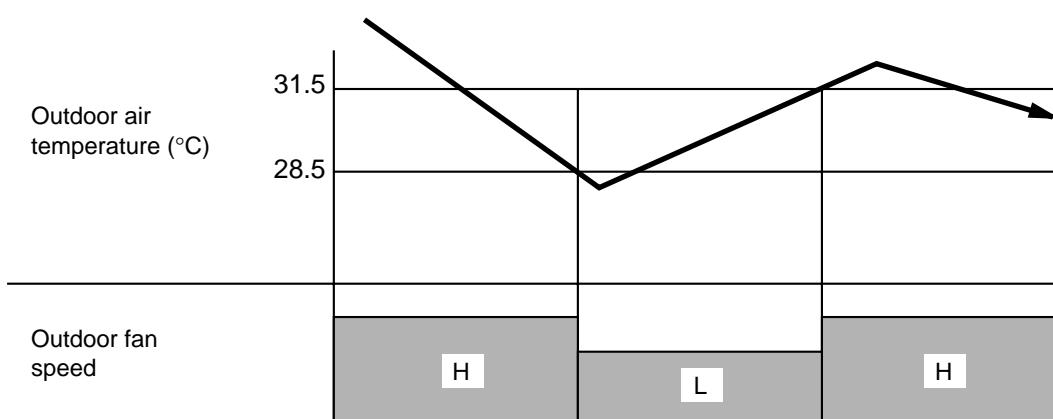


NOTE

*1: Refer to "8-7 Cold Draft Prevention"

8-9. Outdoor Fan Speed Control (Only for C122 models)

- To optimize performance of the air conditioner, the outdoor fan speed is switched automatically according to the outdoor temperature.
- If the outdoor air temperature falls below 28.5°C, the fan speed switches to LOW.
- If the outdoor air temperature rises above 31.5°C, the fan speed switches to HIGH.
- This function does not become active in heating operation.



9. TROUBLESHOOTING

9-1. Check before and after troubleshooting

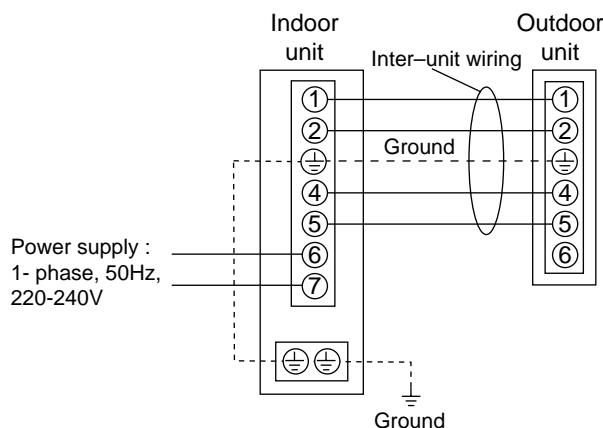


WARNING

Hazardous voltage can cause ELECTRIC SHOCK or DEATH. Disconnect power or turn off circuit breaker before you start checking or servicing.

9-1-1. Check power supply wiring.

- Check that power supply wires are correctly connected to terminals **No.6** and **No.7** on the terminal plate in the indoor unit.



9-1-2. Check inter-unit wiring.

- Check that inter-unit wiring is correctly connected between indoor unit and outdoor unit.

9-1-3. Check power supply.

- Check that voltage is in specified range ($\pm 10\%$ of the rating).
- Check that power is being supplied.

9-1-4. Check lead wires and connectors in indoor and outdoor units.

- Check that coating of lead wires is not damaged.
- Check that lead wires and connectors are firmly connected.
- Check that wiring is correct.

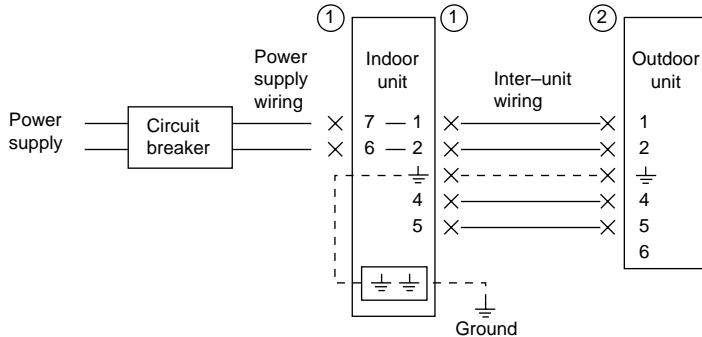
9-2. Air conditioner does not operate.

9-2-1. Circuit breaker trips (or fuse blows).

A. When the circuit breaker is set to ON, it is tripped soon. (Resetting is not possible.)

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

If resistance value is $2M\Omega$ or less, insulation is defective ("NO").



WARNING

* Set circuit breaker to OFF.

- ① Remove inter-unit wires from terminal plate in outdoor unit.
• Measure insulation resistance of outdoor unit.

NO

Insulation of outdoor unit is defective.

- Measure insulation resistance of electrical parts in outdoor unit.

- ② Remove both inter-unit wires and power supply wires from terminal plate in indoor unit.
• Measure insulation resistance of indoor unit.

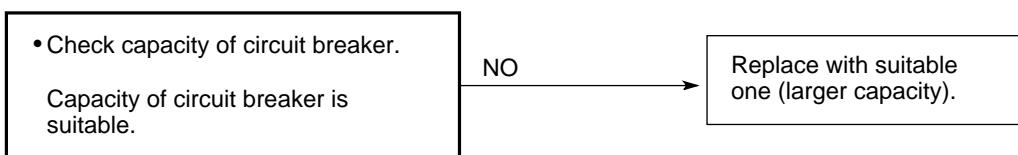
NO

Insulation of indoor unit is defective.

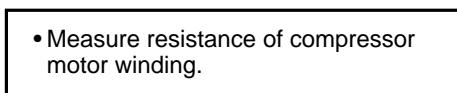
- Measure insulation resistance of electrical parts in indoor unit.

B. Circuit breaker trips in several minutes after turning the air conditioner on.

- There is a possibility of short circuit.

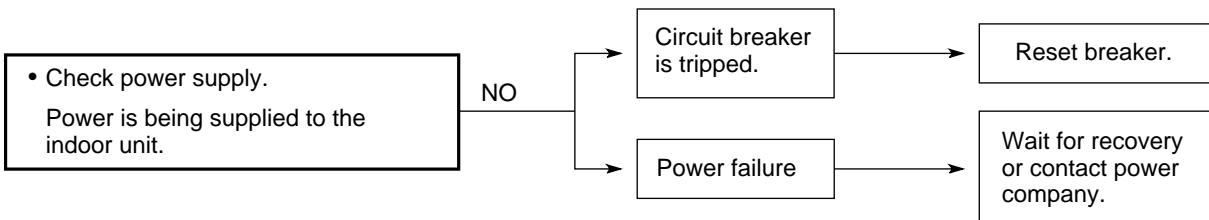


In case of Heating operation :

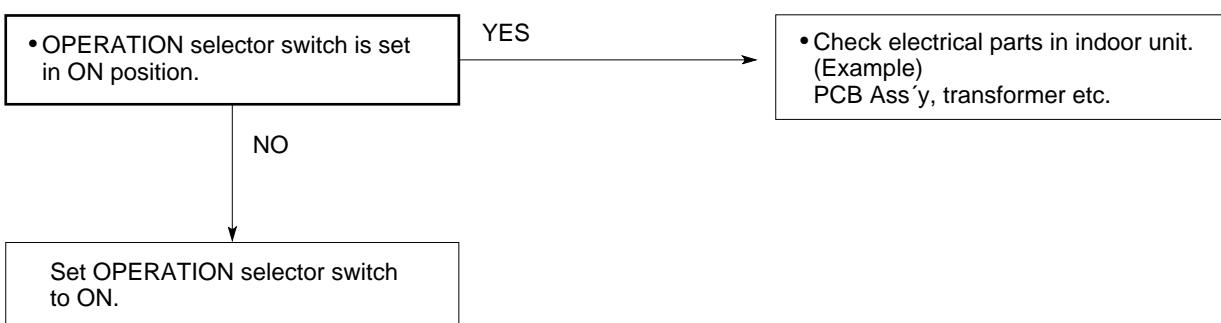


9-2-2. Neither indoor nor outdoor unit runs.

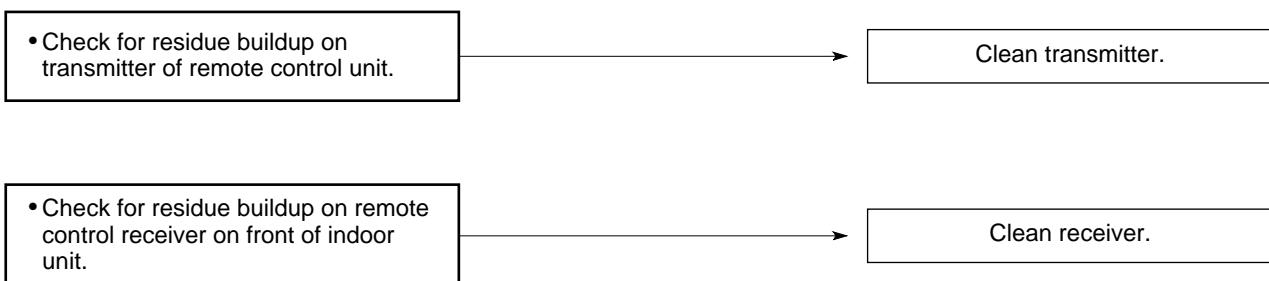
A. Power is not supplied.



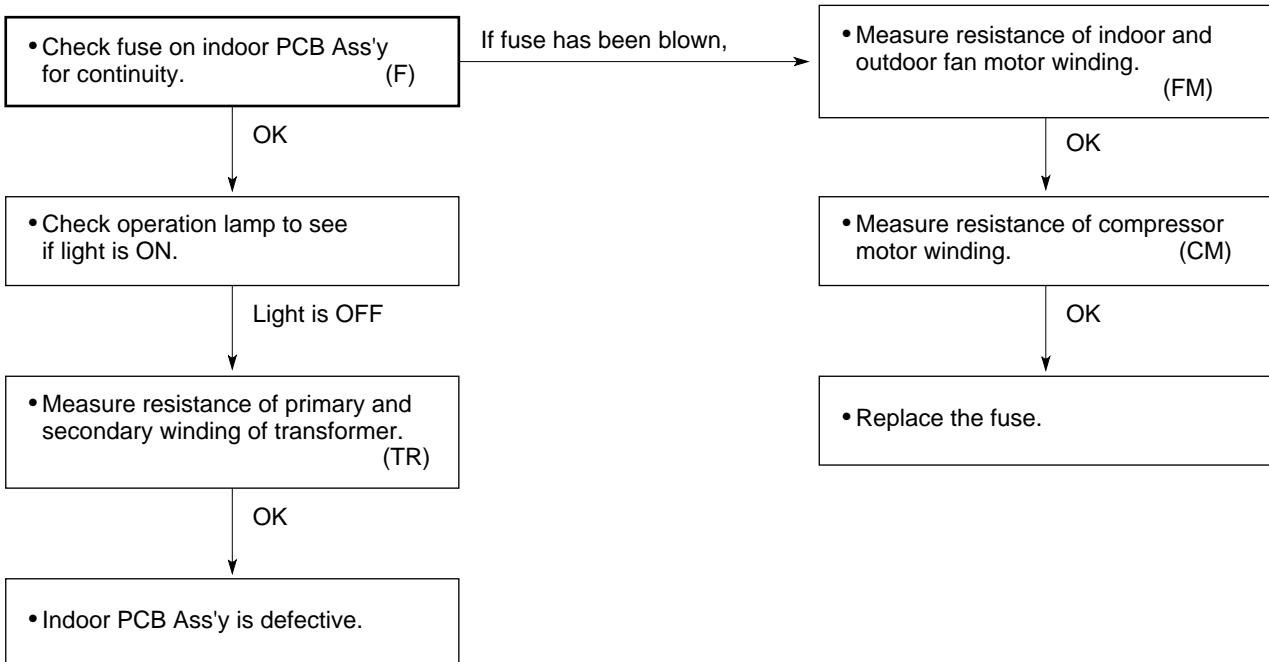
B. Check "OPERATION selector" switch in the indoor unit.



C. Check remote control unit.



D. Check fuse on the indoor PCB Ass'y.



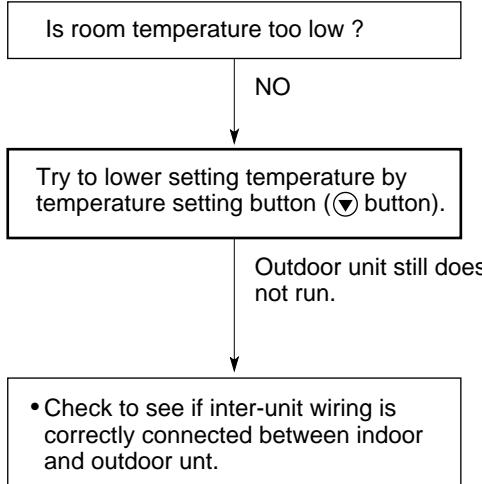
E. Check TIMER on the remote control unit.



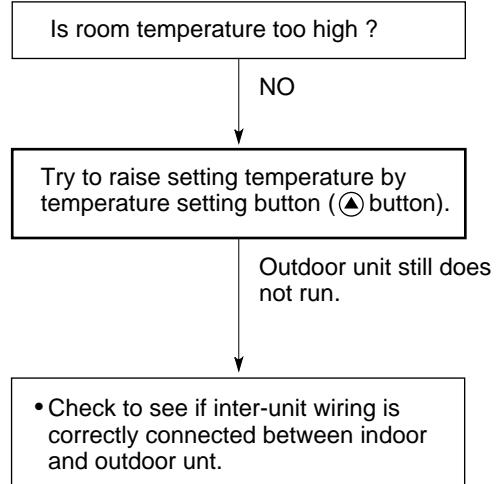
9-2-3. Only outdoor unit does not run.

A. Check setting temperature.

COOL

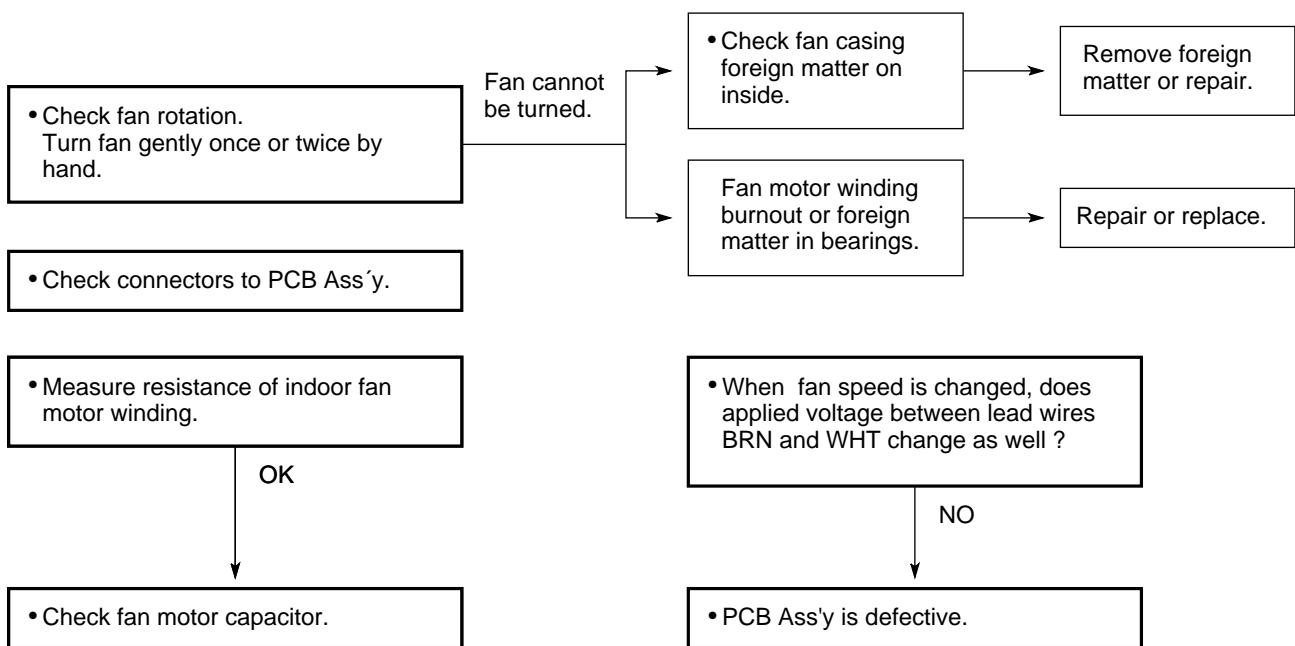


HEAT



9-3. Some part of air conditioner does not operate.

9-3-1. Only indoor fan does not run.



9-3-2. Only flap motor does not run.

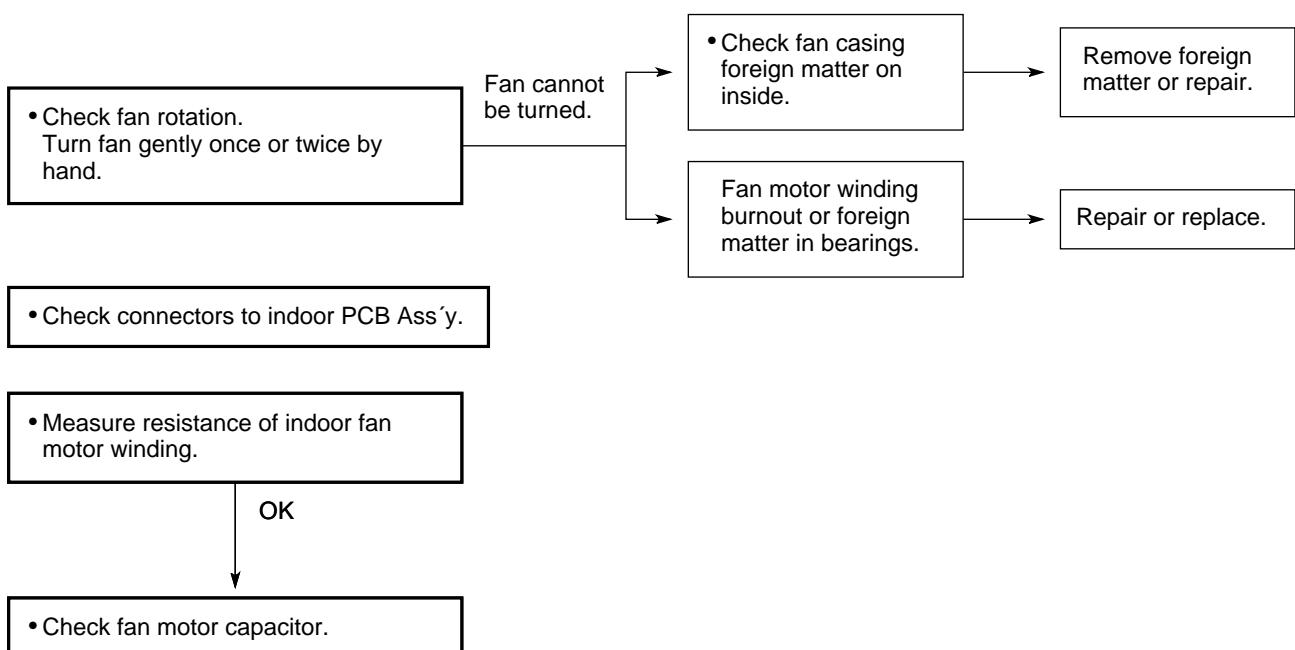
- Measure resistance of flap motor winding and connector.

9-3-3. Function of outdoor fan speed control does not work properly. (For C122 model)

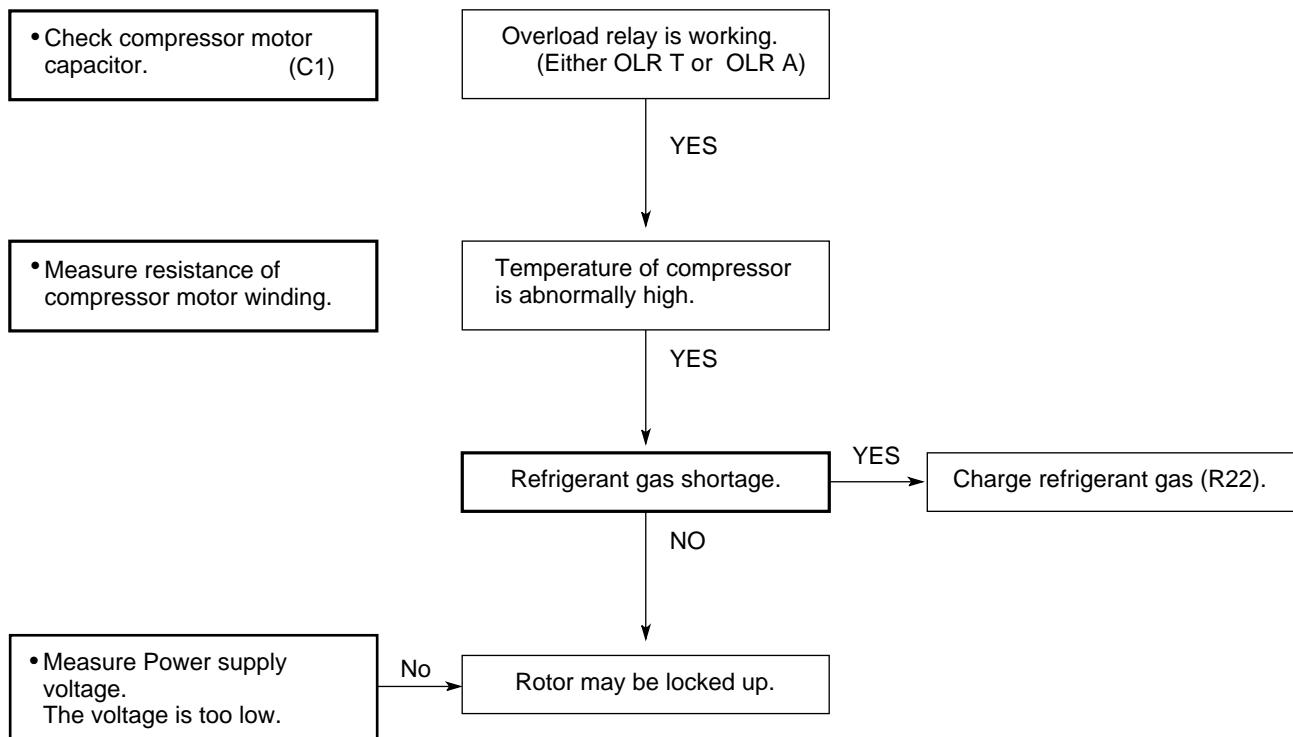
- Check thermostat in outdoor unit.
(23S)

Refer to "8-9 Outdoor Fan Speed Control".

9-3-4. Only outdoor fan does not run.



9-3-5. Only compressor does not run.



9-4. Air conditioner operates, but abnormalities are observed.

9-4-1. Operation does not switch from HEAT to COOL (or COOL to HEAT).

• Remote control unit may be defective.

Receiver in lamp Ass'y may be defective.

• Measure resistance of 4-way valve's winding.

COOL → HEAT

• Check voltage between terminals No.1 and No.5 at the terminal plate.
(AC 220 - 240V)

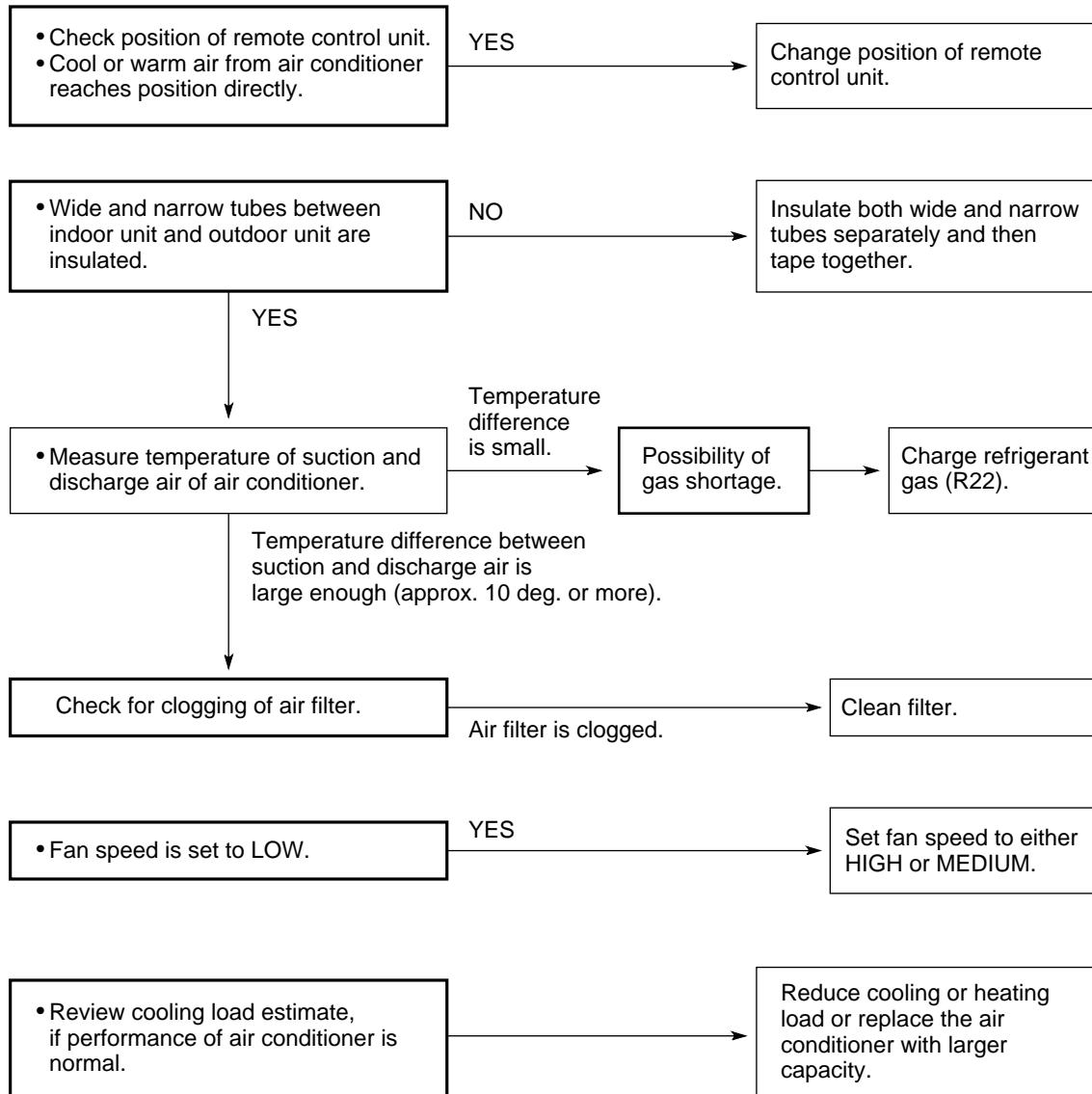
No voltage appears.

• Indoor PCB Ass'y is defective.

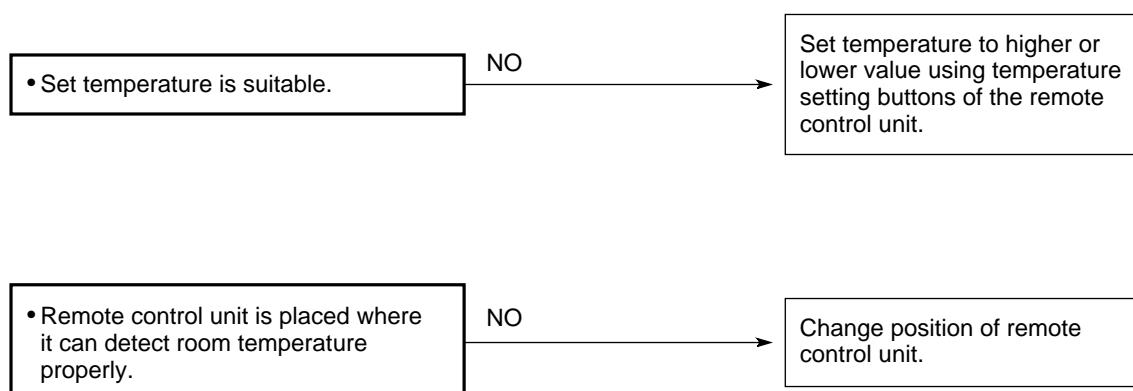
HEAT → COOL

• Check voltage between terminals No.1 and No.5 at the terminal plate.
(0V)

9-4-2. Poor cooling or heating.

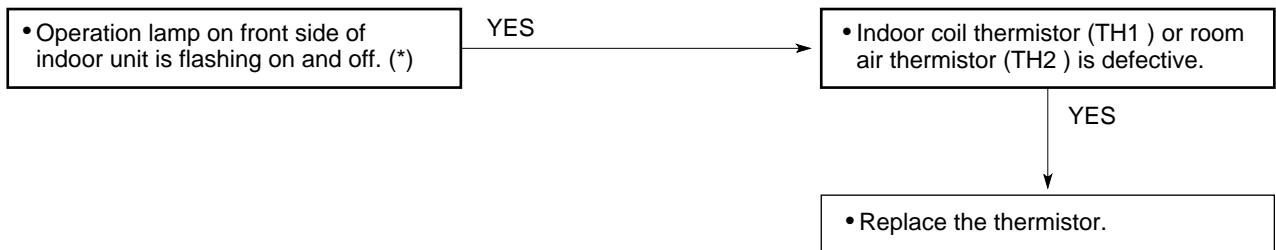


9-4-3. Excessive cooling or heating.



9-5. If a sensor is defective.

9-5-1. Thermistor (TH1 or TH2) is defective.



NOTE Alarm Signal (*)

Operation lamp on the front side of the indoor unit will flash on and off when either indoor coil thermistor or room air thermistor is defective. At the same time the outdoor unit will stop. Indoor unit will operate only for ventilation.

10. CHECKING ELECTRICAL COMPONENTS

10-1. Measurement of Insulation Resistance

- The insulation is in good condition if the resistance exceeds $2M\Omega$.

10-1-1. Power Supply Wires

Clamp the grounding wire of the power cord with a lead clip of the insulation resistance tester and measure the resistance by placing a probe on either of the two power wires. (Fig. 1)

Then, also measure the resistance between the grounding and other power wire. (Fig. 1)

10-1-2. Indoor Unit

Clamp a metallic part of the unit with the lead clip of the insulation resistance tester and measure the resistance by placing a probe on each terminal screw where power supply lines are connected on the terminal plate. (Fig. 2)

10-1-3. Outdoor 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 each terminal screw on the terminal plate. (Fig. 2)

Note that the ground line terminal should be skipped for the check.

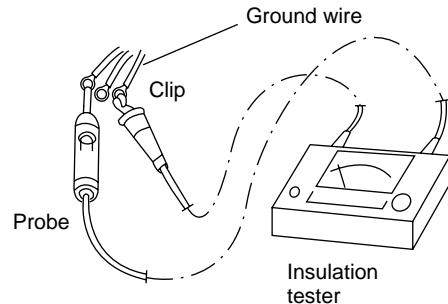
10-1-4. Measurement of Insulation Resistance for Electrical Parts

Disconnect the lead wires of the desired electric part from terminal plate, capacitor, etc. Similarly disconnect the connector. Then measure the insulation resistance. (Figs. 3 and 4)

NOTE

Refer to Electric Wiring Diagram.

If the probe cannot enter the poles because the hole is too narrow then use a probe with a thinner pin.



NOTE

The shape of the power plug may differ from that of the air conditioner which you are servicing.

Fig. 1

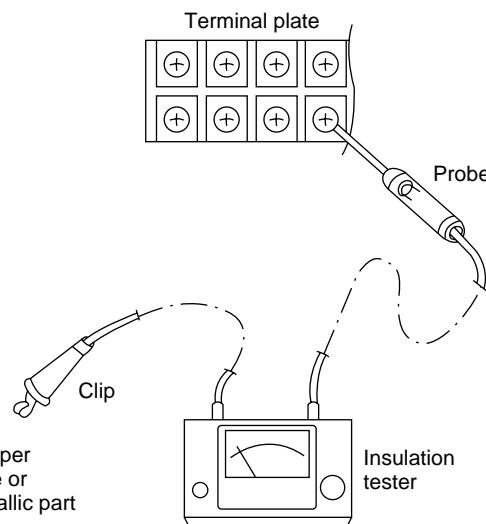


Fig. 2

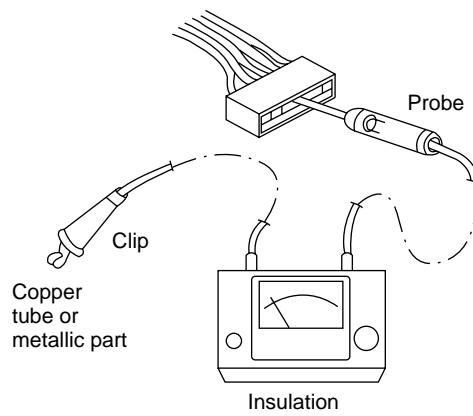


Fig. 3

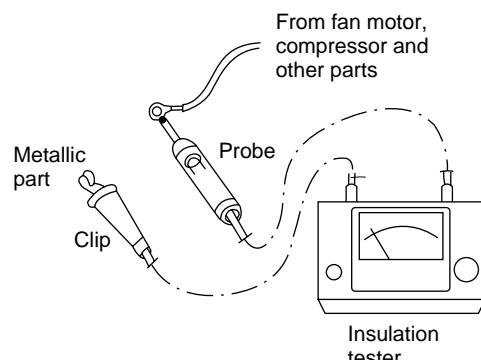


Fig. 4

10-2. Checking Continuity of Fuse on PCB Ass'y

- Remove the PCB Ass'y from the electrical component box. Then pull out the fuse from the PCB Ass'y. (Fig. 5)
- Check for continuity using a multimeter as shown in Fig. 6.

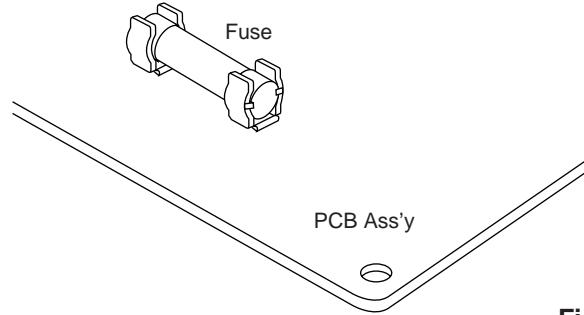


Fig. 5

10-3. Checking Motor Capacitor

Remove the lead wires from the capacitor terminals, and then place a probe on the capacitor terminals as shown in Fig. 7. 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.

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

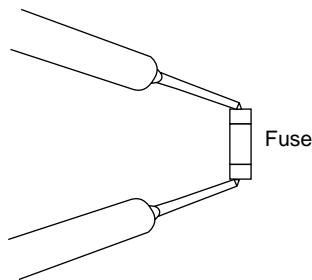


Fig. 6

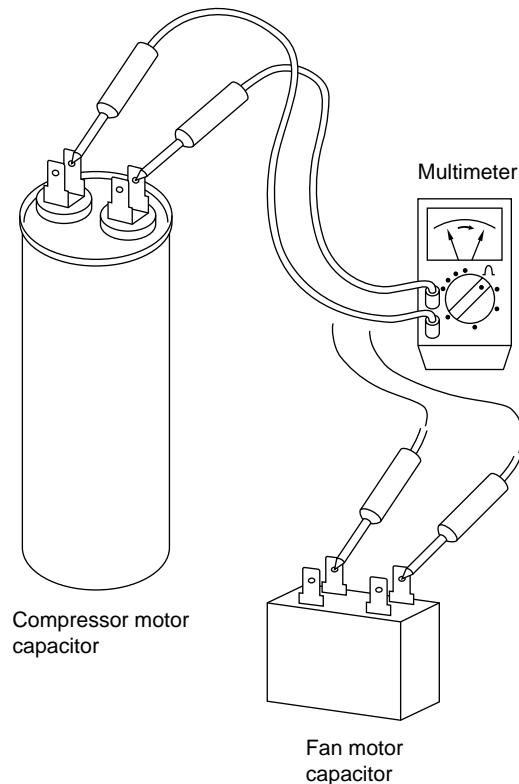


Fig. 7

11. MAINTENANCE

11-1. Changing Address of Remote Control Unit in Indoor Unit

If you are installing more than 1 indoor unit (up to 2) in the same room, it is necessary for you to assign each unit its own address, so each can be operated by its own separate remote control unit. You assign the addresses by matching the *remocon* address on the PCB of each indoor unit with the switch positions of its remote control unit.

NOTE

Once changed, you cannot restore the original address setting of the remote control unit.

To Change Address on PCB

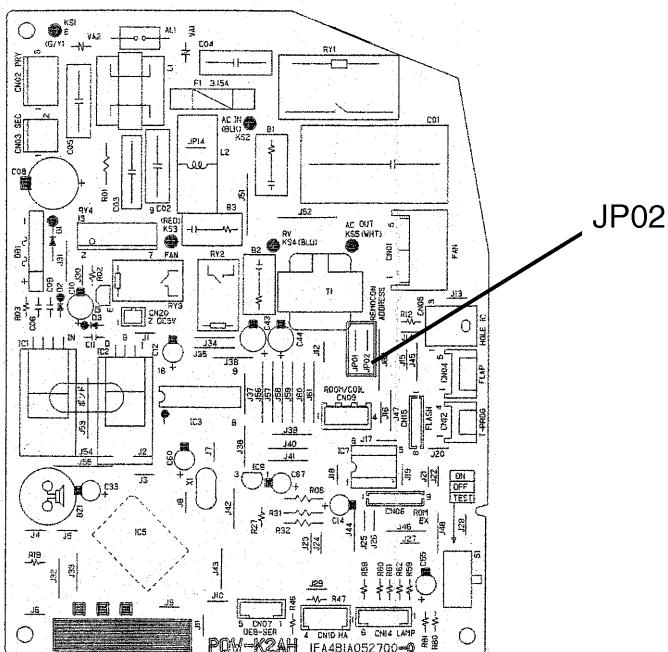
- (1) Cut jumper wire (JP02) on the indoor unit PCB.

Use cutting pliers to cut and disconnect the Jumper wire.

- (2) Switch the address switch on the remote control unit to "B" position.

- (3) After inserting the batteries, press reset button.

Control PCB on Indoor Unit



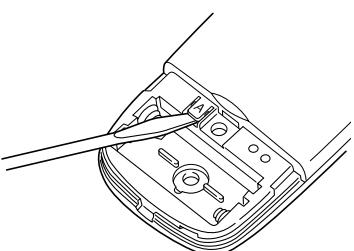
To Change Address on Remote Control Unit

NOTE

Remove the batteries before changing the address.

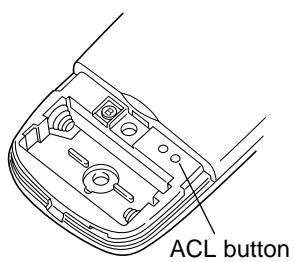
- (1) Remove the batteries before changing the address.

- (2) Remove tab marked A to change the address of the remote control unit.



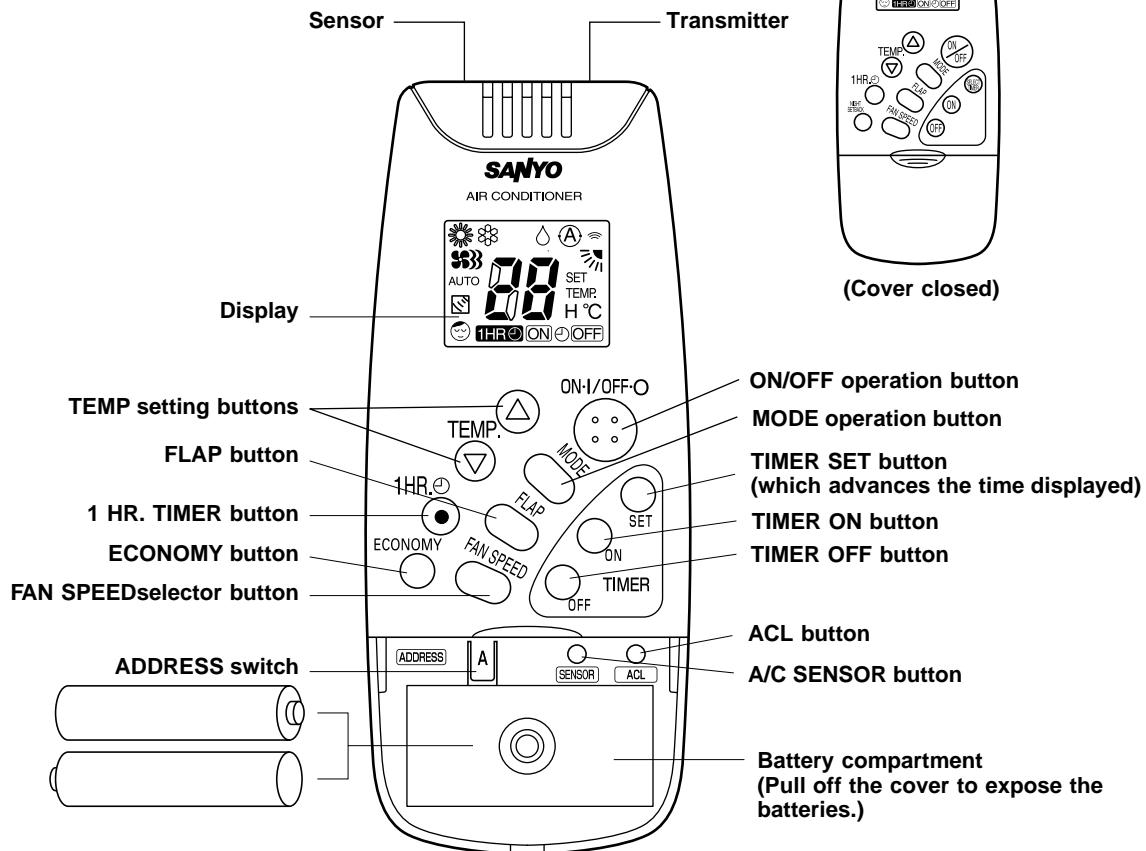
- (3) When it is removed, the address is automatically set to B.

- (4) After inserting the batteries, press ACL button.



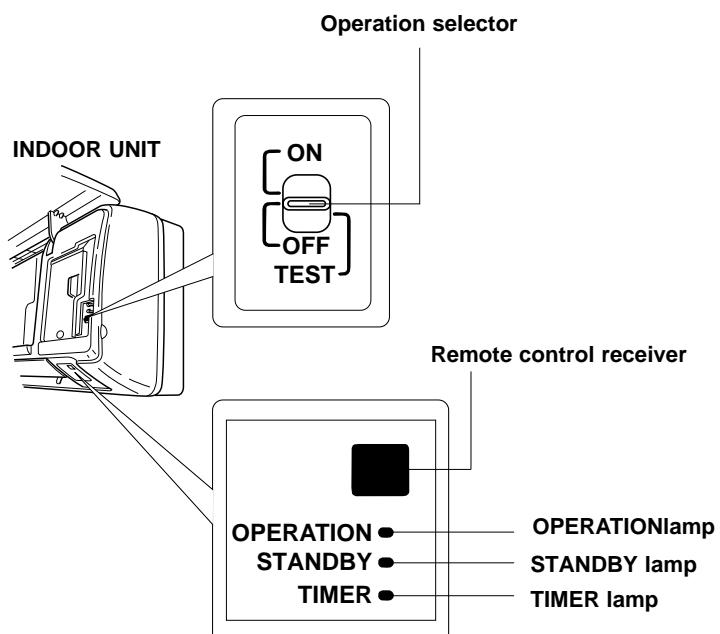
APPENDIX

Remote Control Unit



NOTE The illustration above pictures the remote control unit after the cover has been lowered and removed.

Unit Display and Operation Selector



SANYO

SANYO Electric Co.,Ltd.

Osaka, Japan

SM700566 Sep/2003/50

Printed in Japan