ORDER NO. PACD 940201CO

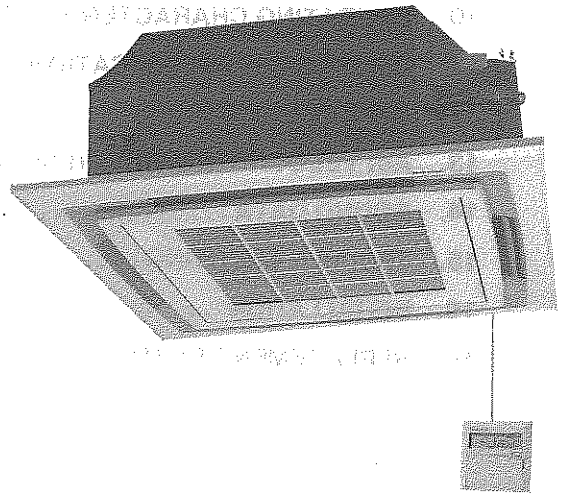
Service Manual

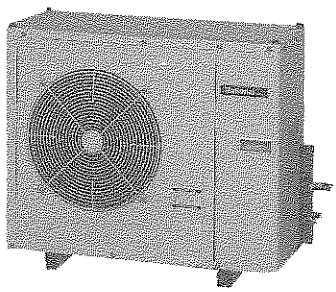
ORIGINAL

PACKAGED AIR CONDITIONER
CASSETTE TYPE

Models : CS-1.5UV5S·P(CU-1.5CV12S·P)
CS-2UV5S·P (CU-2CV12S·P)

Supplement
(MARCO 91-01)





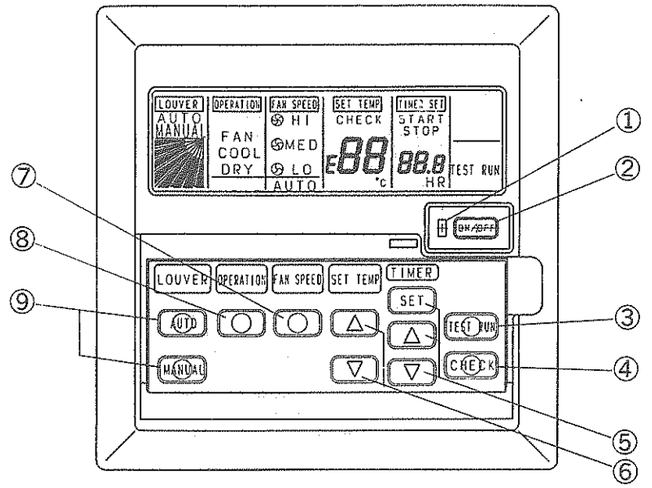
National / Panasonic

CONTENTS

● Low ambient cooling operation
The cooling operation is enabled even at 0˚C outdoor.

● New control system
LC wired remote controller (standard) 24h: ON/OFF timer is equipped. As option, LC wireless remote controller is supplied.

Remote Controller



① Operation indicator (Red)
Lights up when the unit is on.
② Operation switch
ON/OFF
③ Test run switch
This switch is used only for test operation of the unit.
④ Check switch
If this switch is pressed when the "CHECK" section is flashing, E2 - E18 which indicate the abnormal part of the unit will appear. However, an ordinary operation should not be affected by this indication.
⑤ Timer-set switch
This switch is used when the timer operation time is to be set.
⑥ Temperature-set switch
The room temperature setting can be made in 1˚C units within the range of from 16˚C to 31˚C, as follows: for cooling the setting range is from 21˚C to 31˚C.
⑦ Fan spped switch
High, Medium. Low and Automatic.
⑧ Operation-mode switch
This switch can be used to select the operation mode:
FAN or CooL and DRY.
⑨ Louver switch
Adjustments to air-flow direction can be performed by pressing "AUTOMATIC" or "MANUAL".

ITEM			MODEL	CS-1.5UV5S·P (Indoor Unit)	CU-1.5CV12S·P(Outdoor Unit)
(1) Cooling Capacity			kcal/h BTU/h W	3,100/3,100 12,400/12,400 3,600/3,600	
(2) Cooling Capacity			kcal/h BTU/h W	3,220/3,220 12,880/12,880 3,740/3,740	
Standard Air Volume for High, Medium and Low speed			m³/min cfm	Hi 12/12 (424/424) Me 11/11 (388/388) Lo 10/10 (353/353)	Hi 28/30 (988/1,059)
Outside Static Pressure			mmAq in W.G.	0	—
Air Inlet				Lower sided Suction	Back sided Suction
Air Outlet				Lower sided blow-out	Front blow-out
Duct Connection				*1 Available	—
Outside Dimension (H×W×D)			mm inch	(240+30)×930×930 (9-7/16+1-3/16)×36-5/8×36-5/8	660×790×(320+34) 25-31/32×31-3/32×(12-19/32+1-11/32)
Net Weight			kg lbs	32 (22+7) 70 (55+15)	43 95
Piping connection	Refrigerant	Gas Liquid	mm (inch) mm (inch)	O.D. ϕ 12.7 (1/2) Flared type O.D. ϕ 6.35 (1/4) Flared type	
	Drain		mm	O.D. ϕ32 (Accessory drain hose : I.D. ϕ32)	—
Compressor	Type, number of set			—	Hermetic-1 (Rotary)
	Starting Method			—	Direct on-line starting
	Capacity Control		%	—	0, 100
	Motor	Type		—	2-pole-Single phase induction motor
		Input	kW	—	1.17/1.16
		Rated Output	kW	—	1.1/1.0
Fan	Type, number of set		unit	Turbo fan-1	Axial-flow fan-1
	Air Volume Control			Three-Step and Auto mode (Remote Controller)	—
	Motor	Type		6-pole Single phase induction motor	6-pole Single phase induction motor
		Input	kW	0.06/0.06	0.08/0.10
		Rated Output	kW	0.02	0.03
Air-heat exchanger				Louver-fin type	
Refrigerant Control				—	Capillary tube
Refrigeration Oil (Charged)			ℓ	—	SUNISO 4GDID (0.41)
Refrigerant (Charged)			kg lbs	R-22	R-22 (1.2) (2.6)
Running Adjustment	Control Switch			Operation Switch (Remote Controller)	—
	Room Temperature Control			Thermostat (Main Boby)	—
Anti-vibration and Anti-sound Materials				Cabinet (urethane foam attached)	Compressor (Anti-vibration rubber)
Safety Devices				Internal tharmostat, drain over-flow switch.	
External finish				ABS resin (Decorative panel)	Powder coating
Air filter (Factory set)				Polypropylene regin Honeycomb (Washable)	—
Noise level			dB(A)	Hi39/39, Me36/36, Lo33/33	Hi 51/51

(1) Cooling capacities are based on indoor temp. 27° C.D.B. (80.6° F.D.B.), 19.5° C.W.B. (67.1° F.W.B.) and outdoor air temp. 35° C.D.B. (95° F.D.B.), 24° C.W.B. (75.2° F.W.B.).
(2) Cooling capacities are based on indoor temp. 27° C.D.B. (80.6° F.D.B.), 19.5° C.W.B. (67.1° F.W.B.) and outdoor air temp. 32° C.D.B. (89.5° F.D.B.), 24° C.W.B. (75.2° F.W.B)
(3) *1 Supply duct and fresh air duct are connectable. Suppy duct requires the special parts.
(4) Net weight for indoor unit indicate main body and decorative palel.
(5) Stroke-line (/) distinguishes 50/60 Hz values.

ELECTRICAL DATA (50/60Hz)

ITEM	MODEL		CS-1.5UV5S·P , CU-1.5CV12S·P Condition by JIS B 8615, 8616		
Volts	V		220	230	240
Phase			Single	Single	Single
Power Consumption	kW		1.31/1.32	1.31/—	1.31/—
Running Current	A		6.42/6.15	6.15/—	5.89/—
Starting Current	A		22.9/23.6	23.9/—	24.8/—
Power Factor	%		92.7/97.6	92.6/—	92.7/—

• Power Factor means total figure of compressor, indoor fan motor and outdoor fan motor.

National	Power source	220V 50/60Hz, 230, 240V 50Hz
Panasonic	Power source	220V 50/60Hz, 240V 50Hz

ITEM			MODEL	CS-2UV5S·P (Indoor Unit)	CU-2CV12S·P (Outdoor Unit)
(1) Cooling Capacity			kcal/h BTU/h W	4,500/4,500 18,000/18,000 5,230/5,230	
(2) Cooling Capacity			kcal/h BTU/h W	4,620/4,620 18,480/18,480 5,370/5,370	
(3) Cooling Capacity			kcal/h BTU/h W	3,900/3,900 15,600/15,600 4,530/4,530	
Standard Air Volume for High, Medium and Low speed			m³/min cfm	Hi 15/15 (530/530) Me 12/12 (424/424) Lo 10/10 (353/353)	Hi 28/30 (988/1,059)
Outside Static Pressure			mmAq in W.G.	0	—
Air Inlet				Lower sided Suction	Back sided Suction
Air Outlet				Lower sided blow-out	Front blow-out
Duct Connection				*1 Available	—
Outside Dimension (H×W×D)			mm inch	(240+30)×930×930 (9-7/16+1-3/16)×36-5/8×36-5/8	660×790×(320+34) 25-31/32×31-3/32×(12-19/32+1-11/32)
Net Weight			kg lbs	32 (25+7) 70 (55+15)	55 121
Piping connection	Refrigerant	Gas Liquid	mm (inch) mm (inch)	O.D. ϕ 12.7 (1/2) Flared type O.D. ϕ 6.35 (1/4) Flared type	
	Drain		mm	O.D. ϕ 32 (Accessory drain hose : I.D. ϕ 32)	—
Compressor	Type, number of set			—	Hermetic-1 (Rotary)
	Starting Method			—	Direct on-line starting
	Capacity Control		%	—	0, 100
	Motor	Type		—	2-pole-Single phase induction motor
		Input	kW	—	(220V)1.85/2.12,(230V)1.76,(240V)1.95
		Rated Output	kW	—	1.7/1.4
Fan	Type, number of set		unit	Turbo fan-1	Axial-flow fan-1
	Air Volume Control			Three-Step and Auto mode (Remote Controller)	—
	Motor	Type		6-pole Single phase induction motor	6-pole Single phase induction motor
		Input	kW	0.06/0.07	0.08/0.10
		Rated Output	kW	0.02	0.03
Air-heat exchanger				Louver-fin type	
Refrigerant Control				Capillary tube	—
Refrigeration Oil (Charged)			ℓ	—	SUNISO 4GDID (0.81)
Refrigerant (Charged)			kg lbs	R-22	R-22 (1.4) (3.1)
Running Adjustment	Control Switch			Operation Switch (Remote Controller)	—
	Room Temperature Control			Thermostat (Main Boby)	—
Anti-vibration and Anti-sound Materials				Cabinet (urethane foam attached)	Compressor (Anti-vibration rubber)
Safety Devices				Internal thermostat for compressor, Internal thermostat for F.M. Drain over-flow switch	
External finish				ABS resin (Decorative panel)	Powder coating
Air filter (Factory set)				Polypropylene regin Honeycomb (Washable)	—
Noise level			dB(A)	Hi39/39, Me36/36, Lo33/33	Hi 52/52

(1) Cooling capacities are based on indoor temp. 27° C.D.B. (80.6° F.D.B.), 19.5° C.W.B. (67.1° F.W.B.) and outdoor air temp. 35° C.D.B. (95° F.D.B.), 24° C.W.B. (75.2° F.W.B.).
(2) Cooling capacities are based on indoor temp. 27° C.D.B. (80.6° F.D.B.), 19.5° C.W.B. (67.1° F.W.B.) and outdoor air temp. 32° C.D.B. (89.5° F.D.B.), 24° C.W.B. (75.2° F.W.B)
(3) Cooling capacities are based on indoor temp. 27° C.D.B. (80.6° F.D.B.), 19.5° C.W.B. (67.1° F.W.B.) and outdoor air temp, 46° C.D.B. (114.8° F.D.B.), 24° C.W.B. (75.2° F.W.B.).
(4) *1 Supply duct and fresh air duct are connectable. Suppy duct requires the special parts.
(5) Net weight for indoor unit indicate main body and decorative palel.
(6) Stroke-line (/) distinguishes 50/60 Hz values.

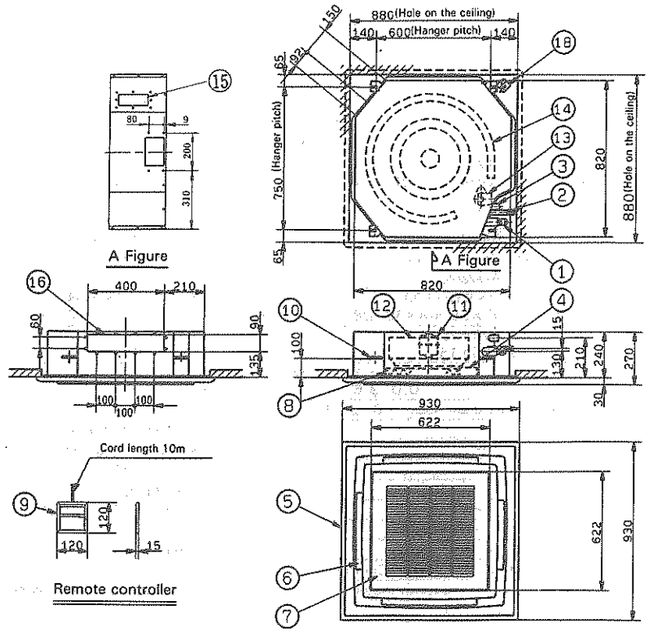
ELECTRICAL DATA (50/60Hz)

ITEM	MODEL		CS-2UV5S·P , CU-2CV12S·P Condition by JIS B 8615, 8616			Condition by SASO (SAA 385, 386)
Volts	V		220	230	240	220
Phase			Single	Single	Single	Single
Power Consumption	kW		1.99/2.29	1.90/—	2.09/—	—/2.77
Running Current	A		10.17/11.15	9.20/—	10.18/—	—/13.21
Starting Current	A		47.0/43.0	49.1/—	51.3/—	—/43.0
Power Factor	%		88.9/93.4	89.8/—	85.5/—	—/95.3

• Power Factor means total figure of compressor, indoor fan motor and outdoor fan motor.

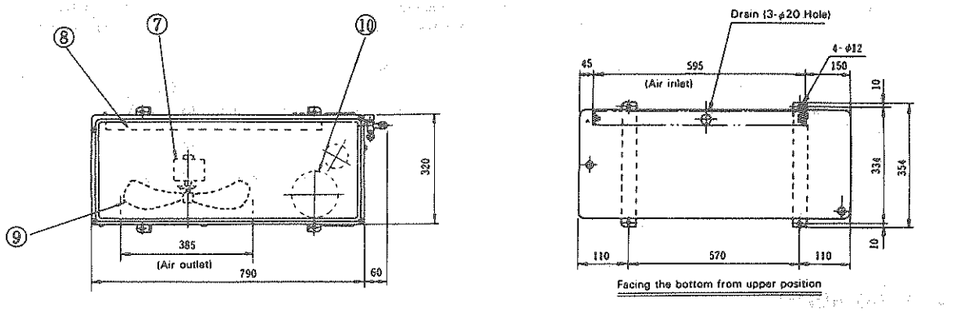
National	Power source	220V 50/60Hz, 230, 240V 50Hz
Panasonic	Power source	220V 50/60Hz, 240V 50Hz

CS-1.5UV5S, CS-2UV5S
CS-1.5UV5SP, CS-2UV5SP
OUTSIDE DIMENSIONS



18	Louver motor	
16	Branch duct hole×2	90×400 knockout hole
15	Fresh air intake hole×1	90×155 knockout hole
14	Evaporator	
13	Drain up motor	
12	Turbo fan	
11	Fan motor	
10	Hanger×4	
9	Remote controller	
8	Air filter	
7	Air inlet grill	
6	Air outlet grill	
5	Decorative panel	
4	Control box	
3	Drain pipe connection	O.D.φ32mm
2	Pipe connection	O.D.φ6.35mm
1	Pipe connection	O.D.φ12.7mm
NO.	Description	Dimensions

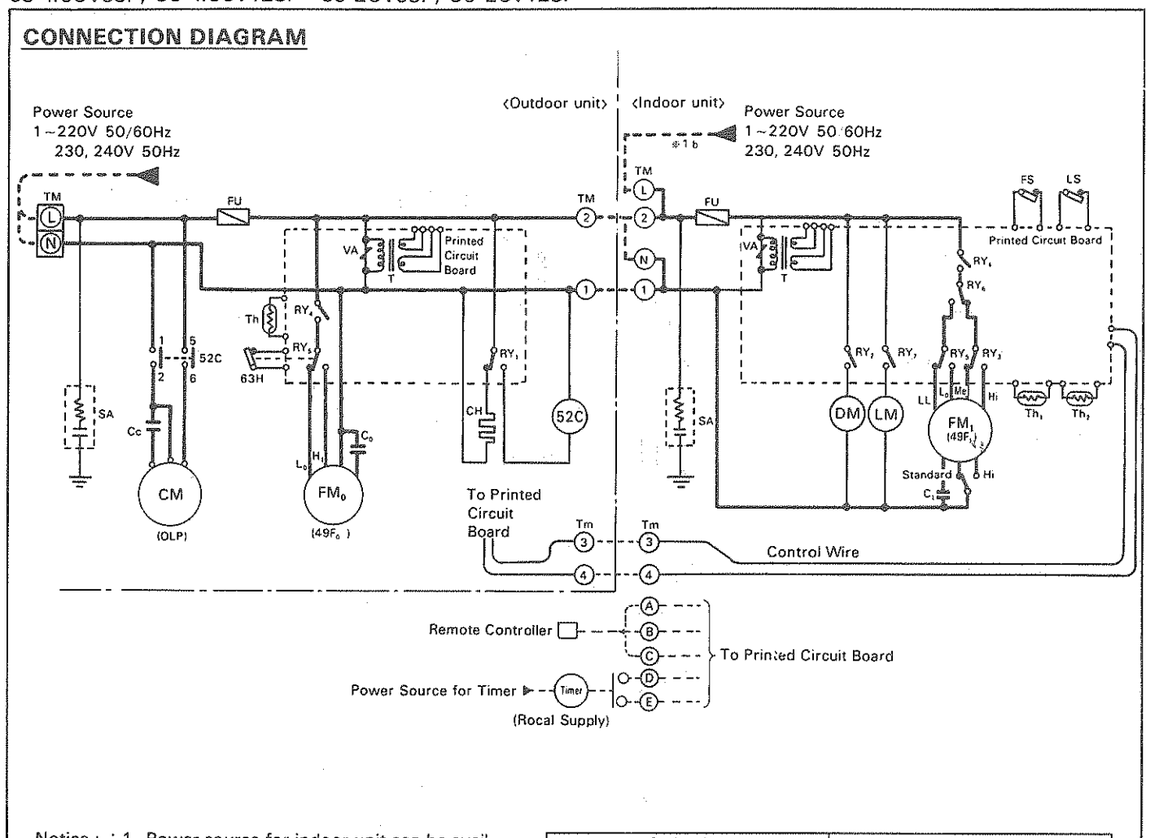
CU-1.5CV12S CU-2CV12S
CU-1.5CV12SP CU-2CV12SP
OUTSIDE DIMENSIONS



11	Wiring connection	
10	Compressor	
9	Propeller fan	
8	Condenser	
7	Fan motor	
6	Wiring connection	
4	Fan guard	
3	Check joint	
2	Ball valve	O.D.φ12.7
1	Service valve	O.D.φ6.35
No.	Description	Dimensions

CS-1.5UV5S, CU-1.5CV12S CS-2UV5S, CU-2CV12S
CS-1.5UV5SP, CU-1.5CV12SP CS-2UV5SP, CU-2CV12SP

CONNECTION DIAGRAM



Notice ; ; 1. Power source for indoor unit can be available by ⓐ or ⓑ.

*1ⓐ. By using connecting wire from outdoor unit to indoor unit.

*1ⓑ. By using power supply wire directly connect from Local power point at indoor side. In this case it is not necessary to connect wire of outdoor unit terminal No.① and No.② to indoor unit terminal No.① and No.②.

IMPORTANT

Connecting wire from outdoor unit to indoor unit should be used with 2×2 cores wire.

1×2 cores is for control wire (DC5V). Another 1×2 cores is for power supply wire (AC220~240V).

This method is to avoid transmission error.

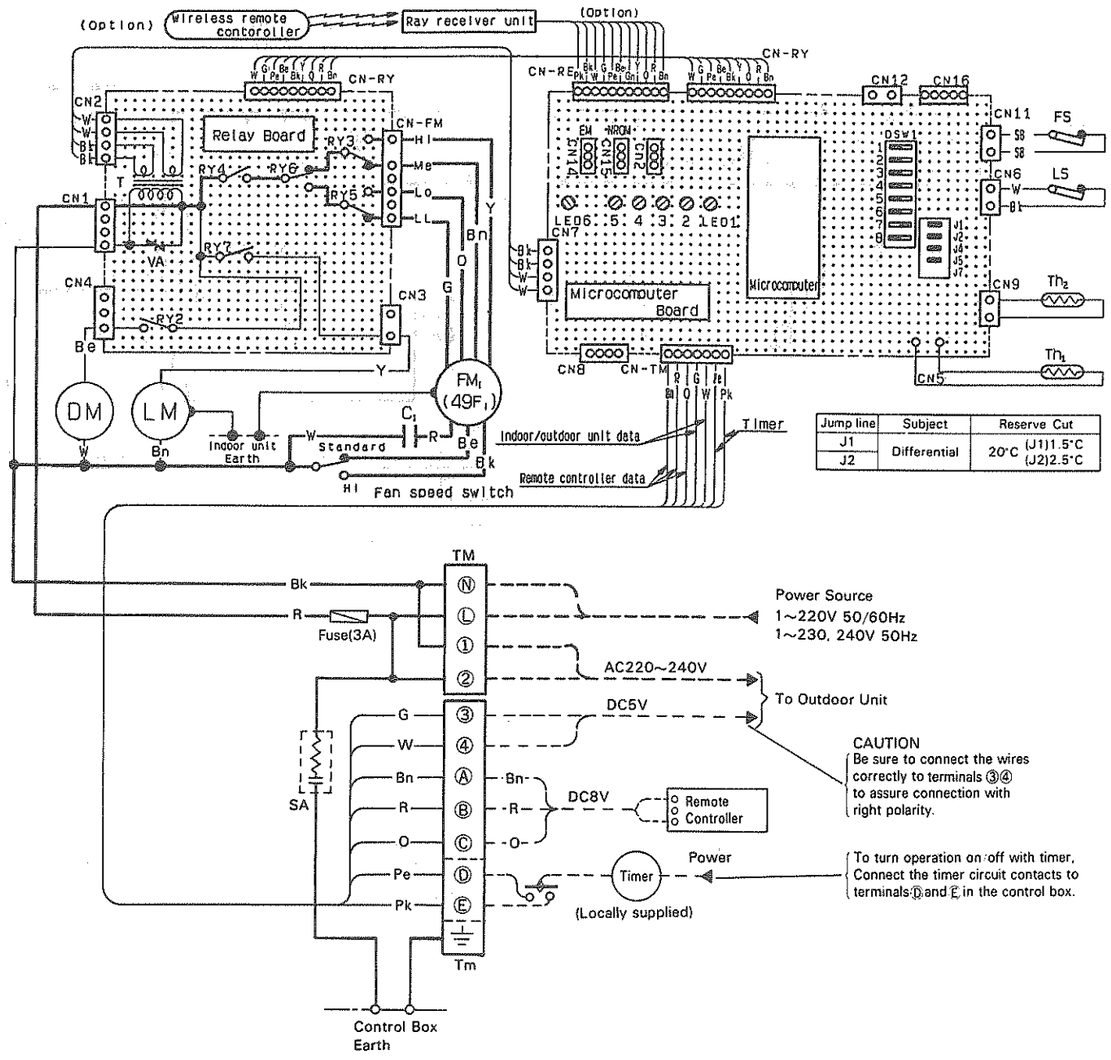
Outdoor Unit		Indoor Unit	
CM	Compressor Motor	FM_1	Fan Motor (Indoor Unit)
52C	Magnetic Contactor for CM	$49F_1$	Internal Thermostat for FM_1
63H	Pressure Switch for Fan Speed	C_1	Capacitor for FM_1
CH	Crank-case Heater for CM	$RY_{2\sim7}$	Relay for IC Control
FM_0	Fan Motor	T	Transformer for P.C.B.
$49F_0$	Internal Thermostat for FM_0	Th_1	Thermistor for Indoor Air Temp.
Cc	Capacitor for CM	Th_2	Thermistor for Indoor Piping
C_0	Capacitor for FM_0	DM	Drain up Motor
$RY_{1\sim5}$	Relay for IC Control	FS	Float Switch for Linecut
T	Transformer for P.C.B.	VA	Varistor
Th	Thermistor for Piping	SA	Surge Absorber
VA	Varistor	FU	Fuse
SA	Surge Absorber	LM	Louver Motor
FU	Fuse	LS	Louver Switch
TM	Terminal Board for Main Circuit	TM	Terminal Board for Main Circuit
Tm	Terminal Board for Control Circuit	Tm	Terminal Board for Control Circuit
26S	Bimetal Thermostat for CM(1.5HP)		
OLP	Internal Protector for CM(2HP)		

Function of Power Relay for P.C.B.

	Power Relay Mark	RY2	RY3	RY4	RY5	RY6	RY7
Indoor Unit	Operation / Relay-ON	Drain up Motor -ON	Indoor Fan Motor Hi Speed	Indoor Fan Motor ON	Indoor Fan Motor Lo Speed	Indoor Fan Motor Lo or LL Speed	Louver Motor ON
	Power Relay Mark	RY1	RY4	RY5			
Outdoor Unit	Operation / Relay-ON	Compressor,Outdoor Fan motor-ON	Outdoor Fan Motor ON	Outdoor Fan Motor Hi Speed			

CS-1.5UV5S, CS-2UV5S,
CS-1.5UV5SP, CS-2UV5SP

WIRING CONNECTION (Indoor Unit)



LEGEND

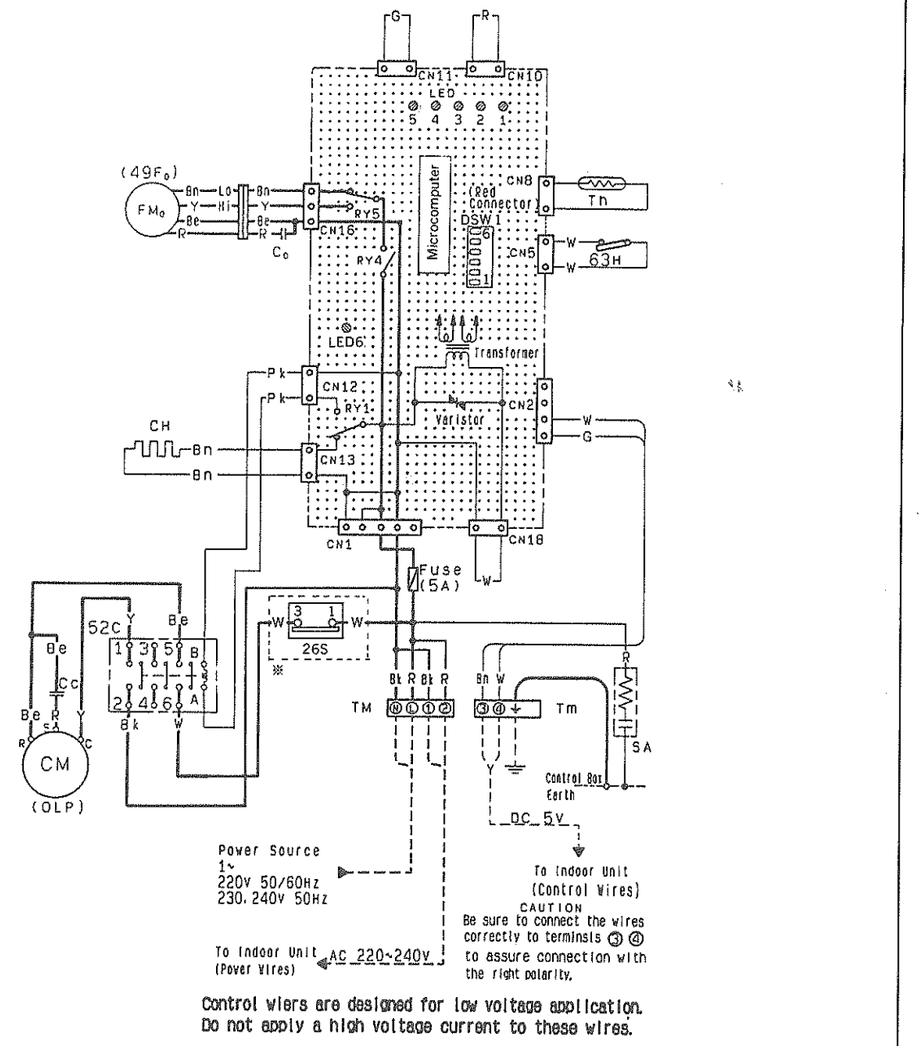
TM	Terminal Board for Main Circuit	FS	Float Switch
Tm	Terminal Board for Control Circuit	Th_1	Thermistor for Indoor Temperature
FM_I	Fan Motor (Indoor unit)	Th_2	Thermistor for Indoor piping
DM	Drain Up Motor	SA	Surge Absorber
LM	Louver Motor	T	Transformer
$49F_I$	Internal Thermostat for FM_I	VA	Varistor
LS	Louver Switch	C_I	Capacitor for FM_I

WIRE COLOR

R	Red	Bk	Black	Bn	Brown	Be	Blue
W	White	G	Gray	Y	Yellow	O	Orange
Pk	Pink	Pe	Purple	SB	Sky Blue	Gn	Green

CU-1.5CV12S, CU-2CV12S
CU-1.5CV12SP, CU-2CV12SP

WIRING CONNECTION (Outdoor Unit)

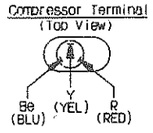


SELF-DIAGNOSES FUNCTION

You can find faulty point by "LED" on the electronic controller.
After repair the check point on the table reset switch on.

"LED" on the printed wiring board (in the out door unit)				FAULTY POINT	CHECK POINT
LED1	LED2	LED3	LED4		
○ Light on				Indoor unit Electrical transmission of Indoor outdoor unit	Check the self-diagnoses in the indoor unit
		○		Thermistor for piping	Wiring of thermistor

- If LED5 (yellow) is flushing, the microcomputer in the electronic controller is functioning normally. If LED5 is lighting steady, off, or flashing irregularly, try turning the power off and then on again.
- If LED6 (red) is lighting steady, power is supplied to the electronic controller.



Notice:
※Marked dotted line part (26S) is only applied with 1.5HP Model.

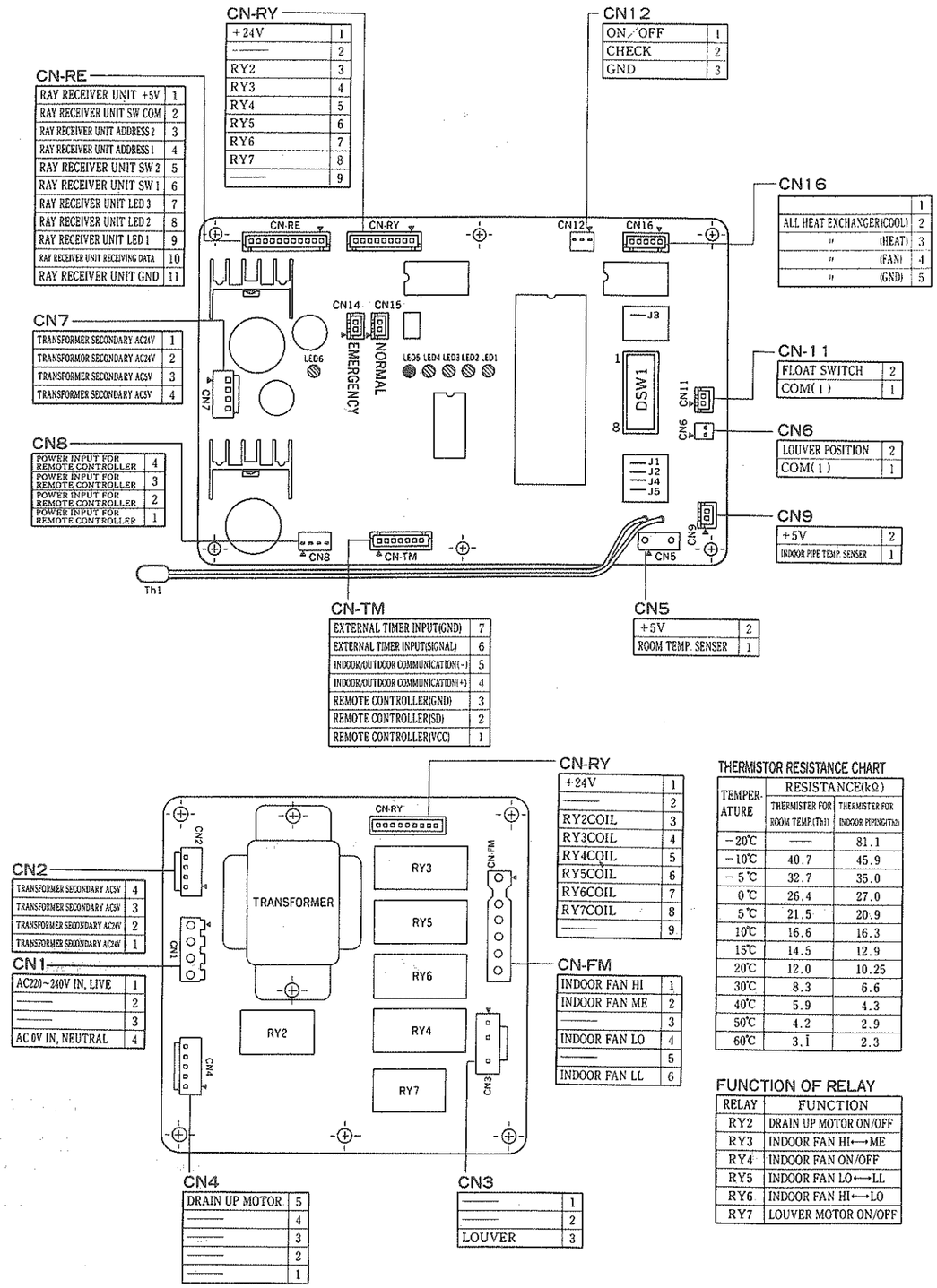
LEGEND

CM	Compressor Motor	Th	Thermistor for Piping	Tm	Terminal Boad for Control Circuit
FM_o	Fan Motor	63H	Pressure Swich (For Fan Speed)	26S	Bimetal thermostat for CM (Only 1.5HP)
CH	Crankcase Heater for CM	SA	Surge Absorber	OLP	Internal Protector for CM (Only 2HP)
52C	Magnetic Contactor for CM	TM	Terminal Board for Main Circuit		
$49F_o$	Internal Thermostat for FM_o				
Cc	Capacitor for CM				
C_o	Capacitor for FM_o				

WIRE COLOR

R	Red	Bk	Black	Bn	Brown	Be	Blue
W	White	G	Gray	Y	Yellow	Pk	Pink

●INDOOR UNIT
PRINTED CIRCUIT BOARD (OUTLINE DRAWING)



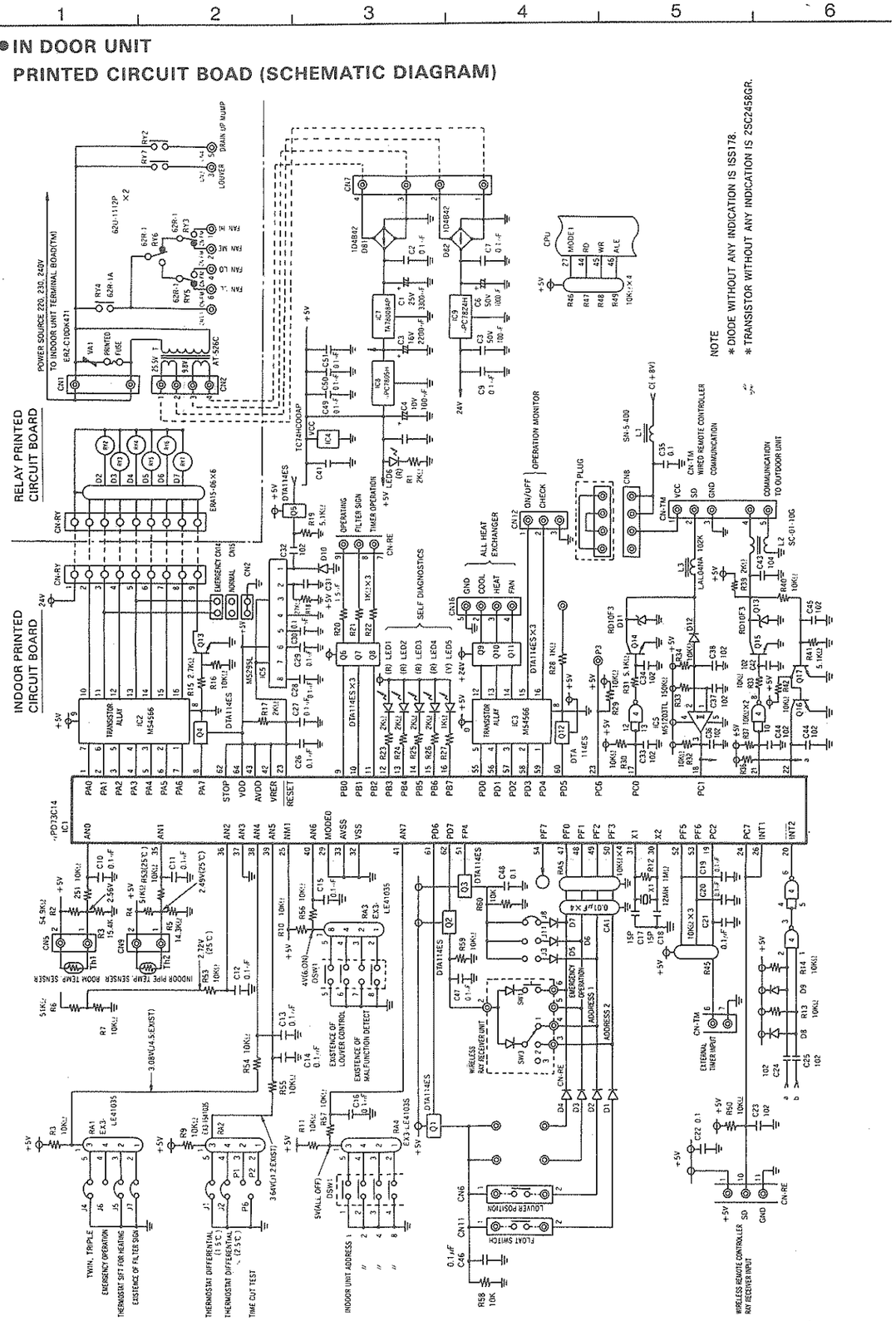
THERMISTOR RESISTANCE CHART

TEMPERATURE	RESISTANCE(kΩ)	
	THERMISTER FOR ROOM TEMP.(Th1)	THERMISTER FOR INDOOR PIPING(Th2)
−20℃	——	81.1
−10℃	40.7	45.9
−5℃	32.7	35.0
0℃	26.4	27.0
5℃	21.5	20.9
10℃	16.6	16.3
15℃	14.5	12.9
20℃	12.0	10.25
30℃	8.3	6.6
40℃	5.9	4.3
50℃	4.2	2.9
60℃	3.1	2.3

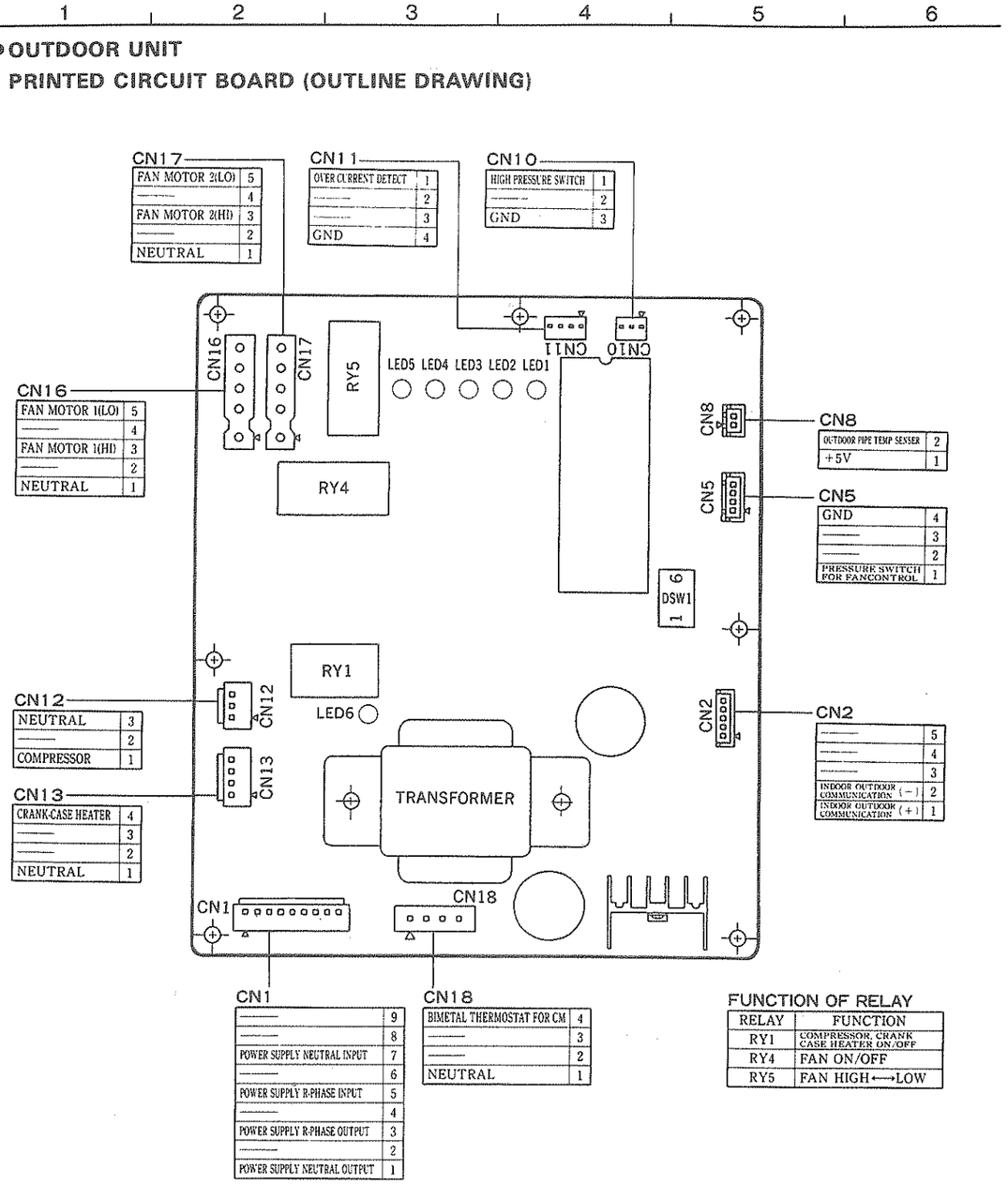
FUNCTION OF RELAY

RELAY	FUNCTION
RY2	DRAIN UP MOTOR ON/OFF
RY3	INDOOR FAN HI⟷ME
RY4	INDOOR FAN ON/OFF
RY5	INDOOR FAN LO⟷LL
RY6	INDOOR FAN HI⟷LO
RY7	LOUVER MOTOR ON/OFF

●IN DOOR UNIT
PRINTED CIRCUIT BOAD (SCHEMATIC DIAGRAM)



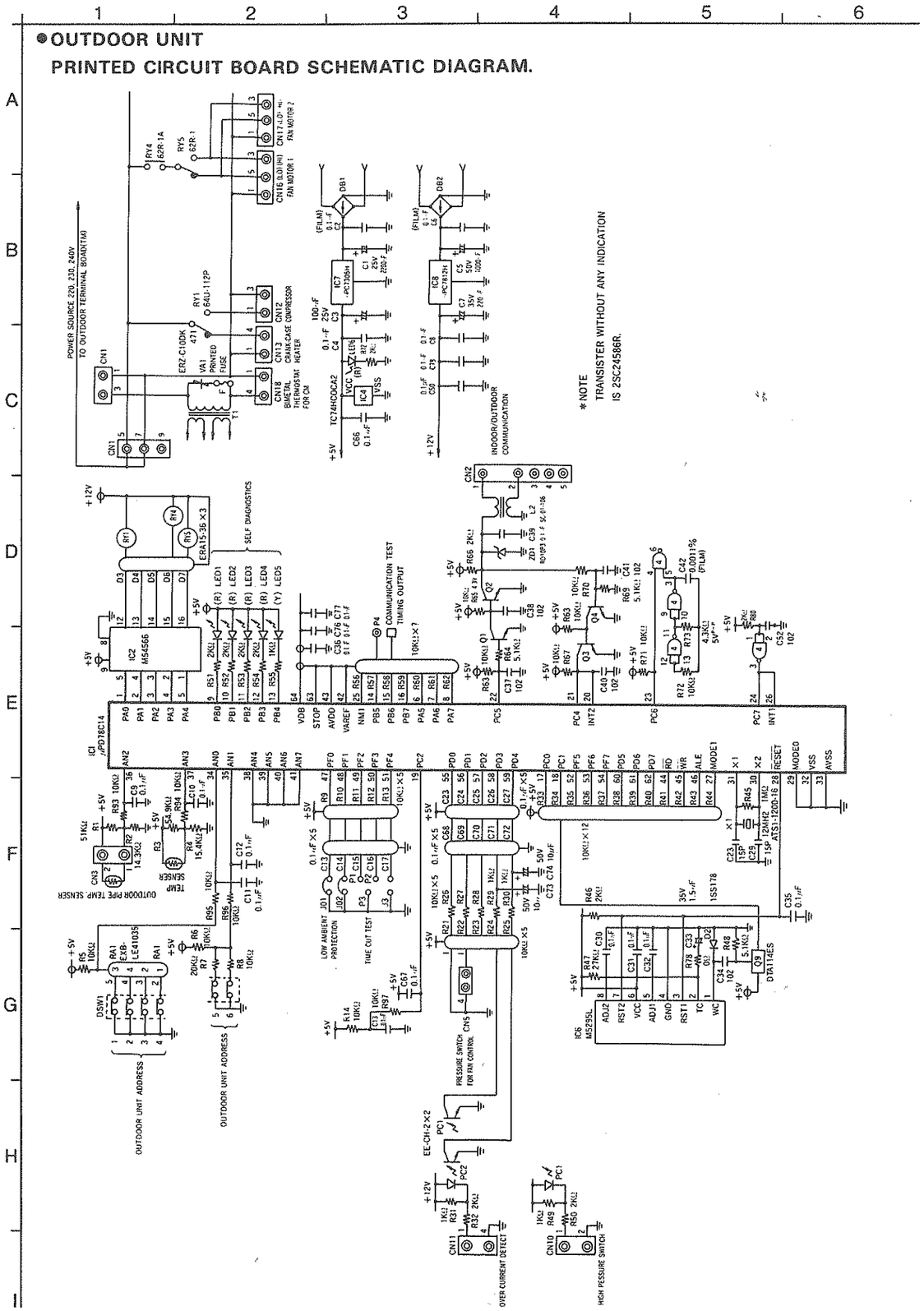
●OUTDOOR UNIT
PRINTED CIRCUIT BOARD (OUTLINE DRAWING)



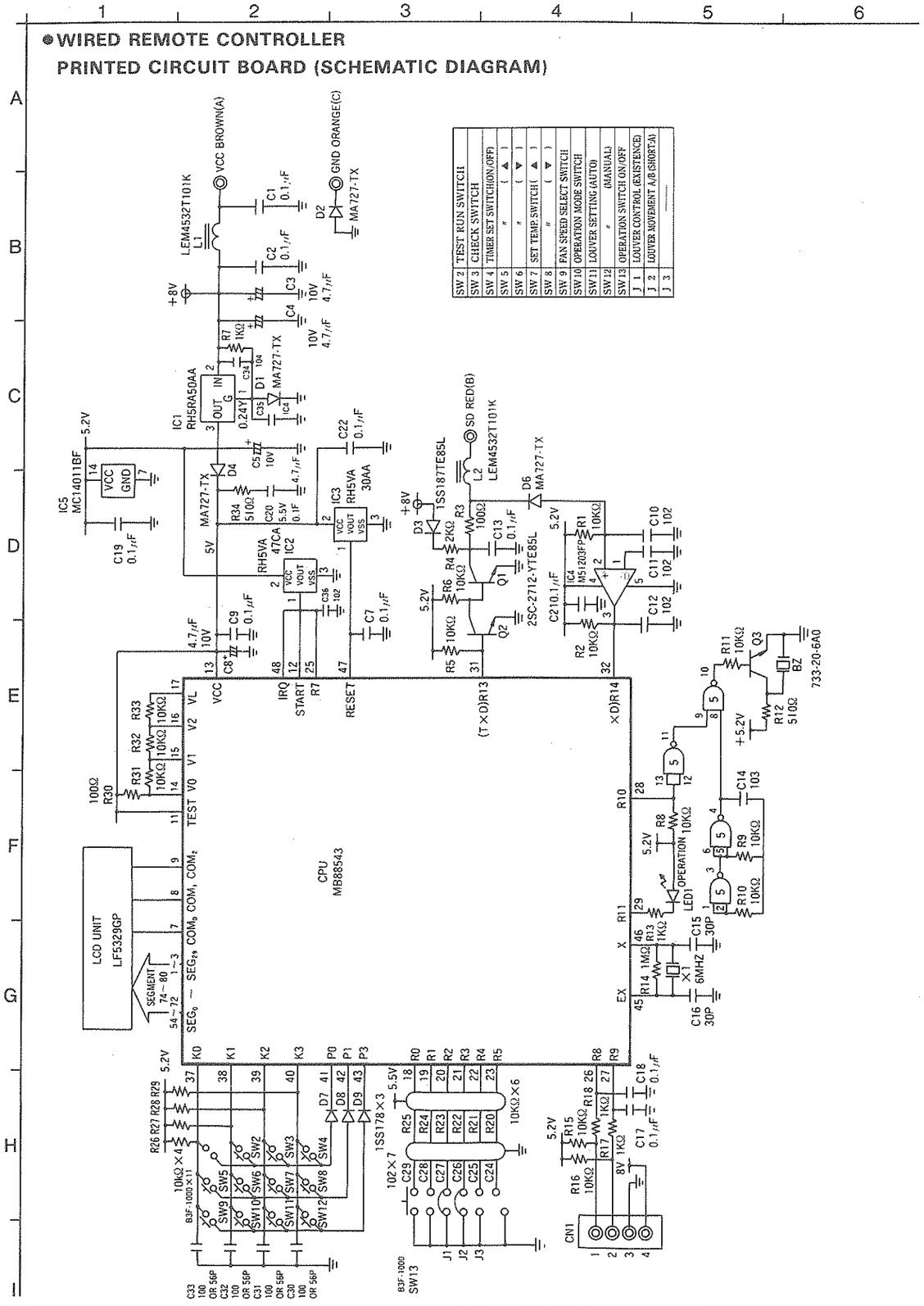
FUNCTION OF RELAY

RELAY	FUNCTION
RY1	COMPRESSOR, CRANK CASE HEATER ON/OFF
RY4	FAN ON/OFF
RY5	FAN HIGH⟷LOW

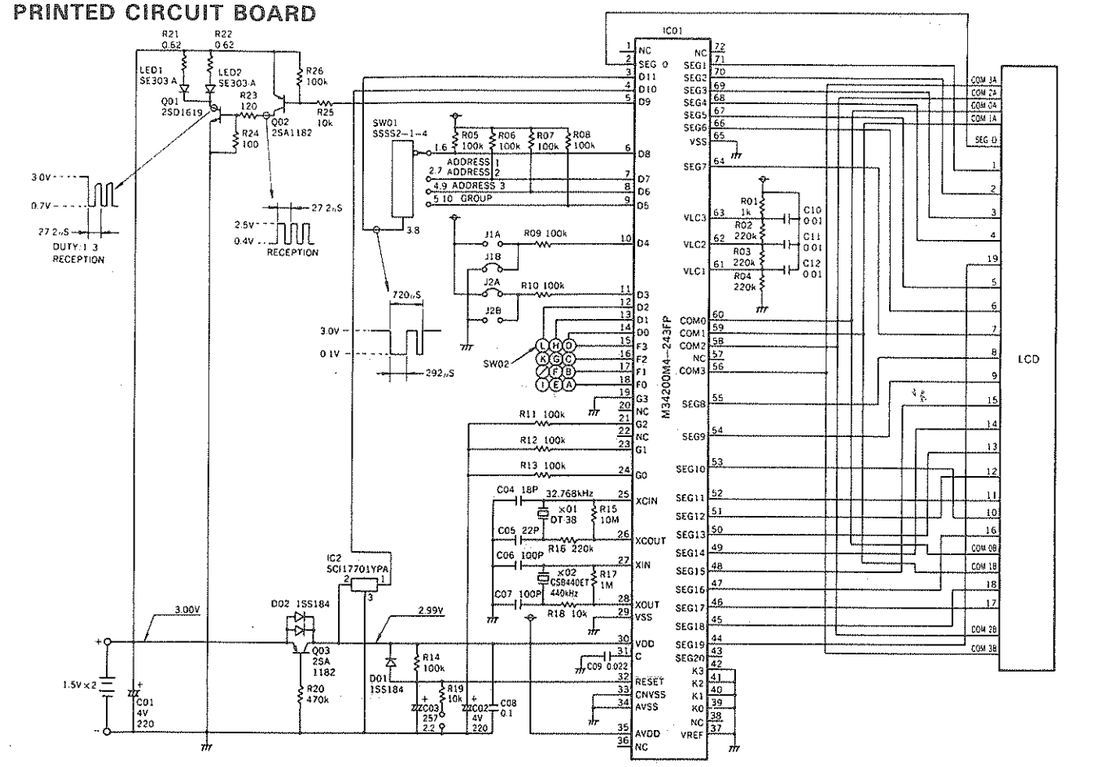
●OUTDOOR UNIT
PRINTED CIRCUIT BOARD SCHEMATIC DIAGRAM.



●WIRED REMOTE CONTROLLER
PRINTED CIRCUIT BOARD (SCHEMATIC DIAGRAM)



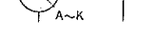
EMITTER (OPTIONAL ACCESSORY)
PRINTED CIRCUIT BOARD



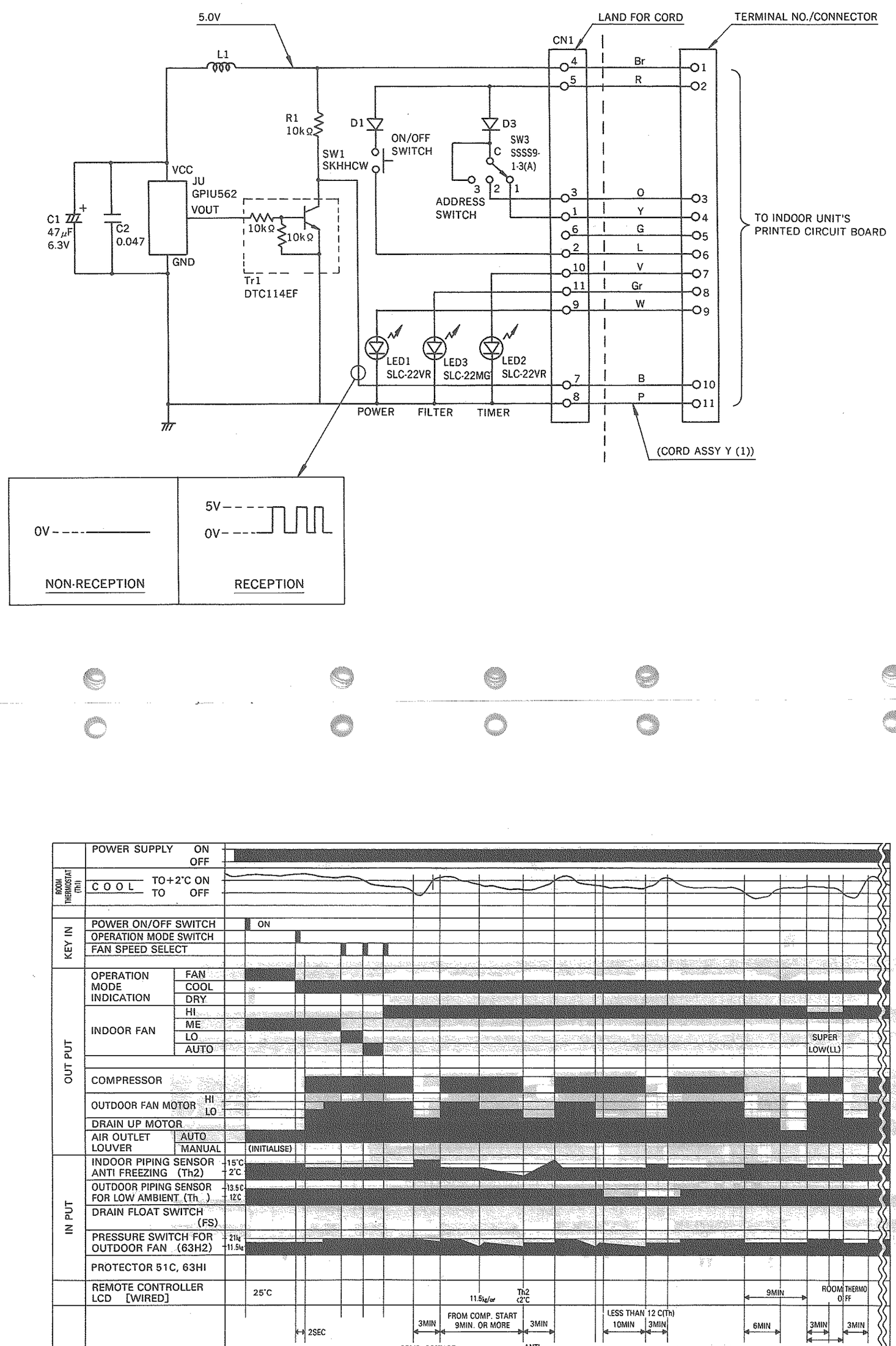
SWITCH MATRIX(SW02)

	SWITCH		SWITCH
A	AUTO	I	△(TEMP)
B	MANUAL	J	
C	OPERATION	K	△(TIMER)
D	FAN SPEED	L	ON/OFF
E	▽(TEMP)	M	
F	TIMER SET	N	
G	▽(TIMER)	O	
H	FILTER RESET	P	

SWITCH(A~K) ARE AS FOLLOWS

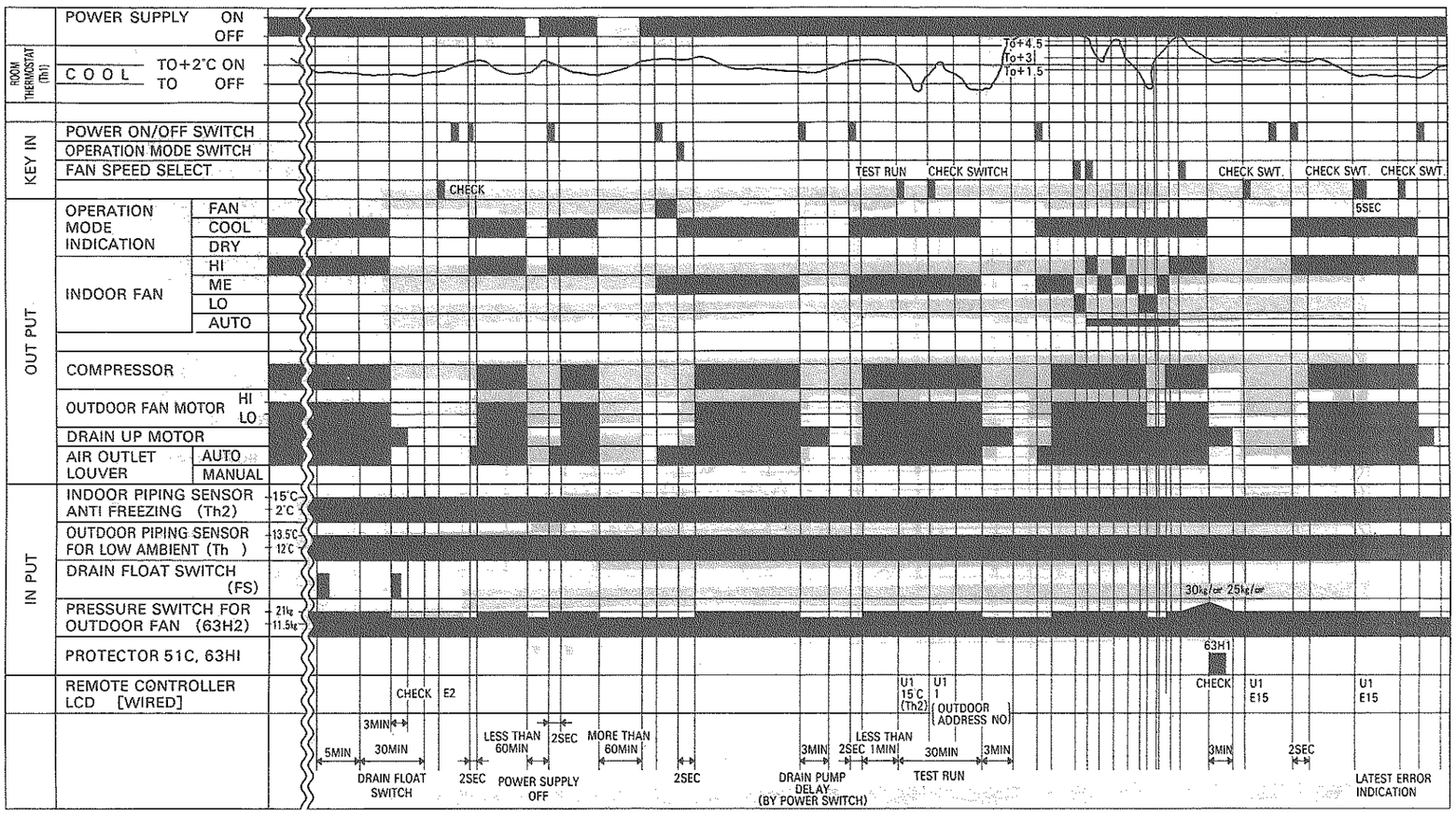


RECEIVER (OPTIONAL ACCESSORY)
PRINTED CIRCUIT BOARD

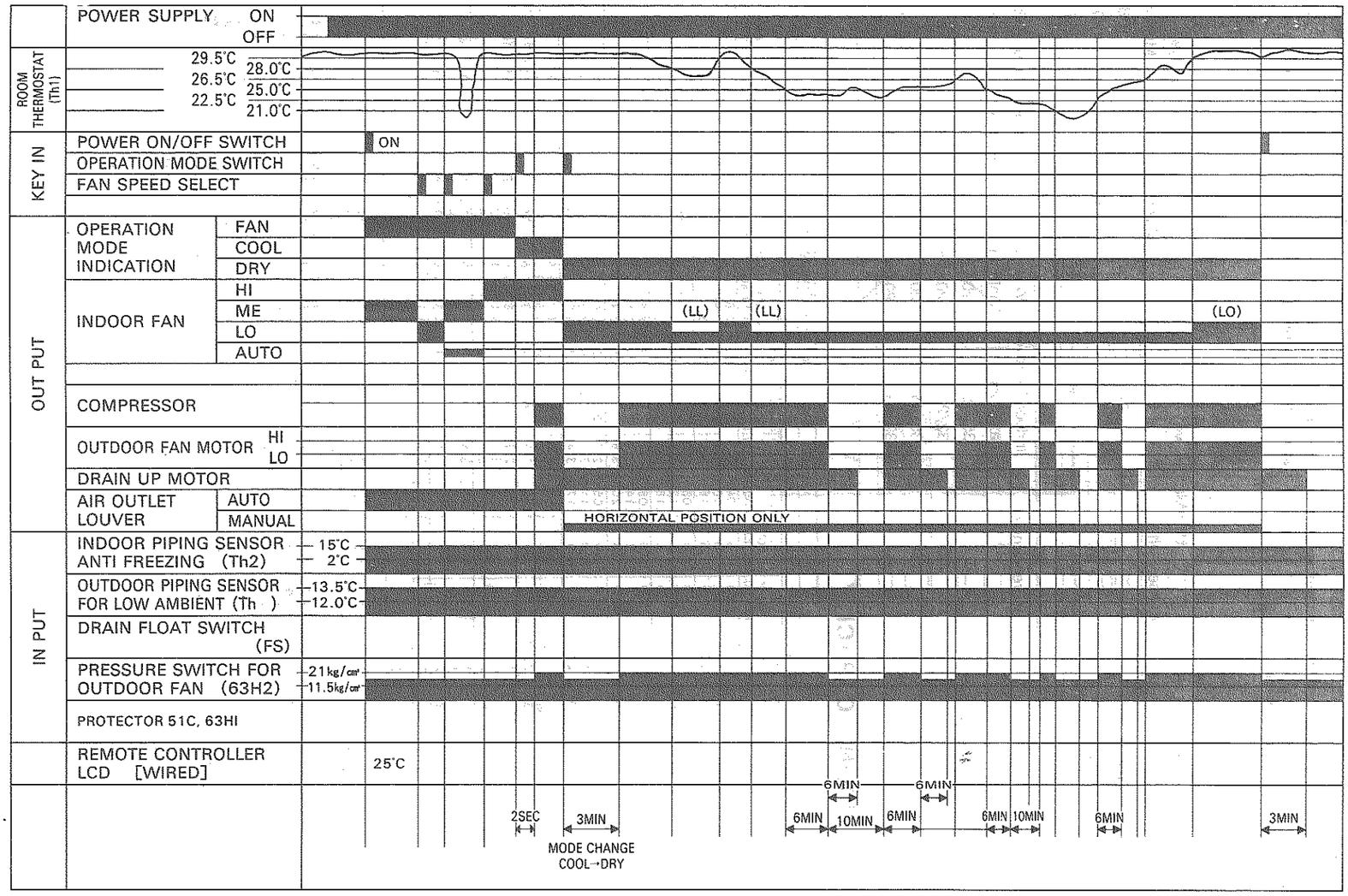


OPERATION MODE (COOL 2-1) [CS-1.5UV5S-P, CS-2UV5S-P,]

OPERATION MODE (COOL 2-2)



OPERATION MODE (FAN·DRY)



Power Supply

The applicable voltage range for each unit is given in "the following table". The working voltage among the three phases must be balanced within a 3% deviation from each voltage at the compressor terminals. The starting voltage must be higher than 85% of the rated voltage.

Power Supply

Model CS-	Unit Main Power		Applicable Voltage	
	Phase, Volts	Hz	Maximum	Minimum
1.5UV5S•P 2UV5S•P	1~220	50/60	242	198
	1~230	50	253	207
	1~240	50	264	216

Model CS-	Frequency (Hz)	Indoor Temp. (D.B./W.B.°C)		Outdoor Temp. (D.B. °C)	
		Maximum	Minimum	Maximum	Minimum
1.5UV5S•P	50	35/25	20/14	46	0
	60	32/23	20/14	43	0
2UV5S•P	50	35/25	20/14	52	0
	60	32/23	20/14	50	0

8 COOLING CAPACITY

Model CS-	Power Frequency (Hz)	EVAP. AIR Air Volume (m³/min) Bf	EVAP. AIR Entering Wet-Bulb Temp (°C)	Temperature Air Entering Condenser (CDB) 25 TC (×10³ kcal/h)	25 SHC (×10³ kcal/h)	25 Input (kW)	30 TC (×10³ kcal/h)	30 SHC (×10³ kcal/h)	30 Input (kW)	35 TC (×10³ kcal/h)	35 SHC (×10³ kcal/h)	35 Input (kW)	40 TC (×10³ kcal/h)	40 SHC (×10³ kcal/h)	40 Input (kW)	46 TC (×10³ kcal/h)	46 SHC (×10³ kcal/h)	46 Input (kW)
1.5UV5S•P	50	10	17.0	2.8	2.3	1.04	2.7	2.3	1.09	2.6	2.2	1.20	2.3	2.1	1.33	2.1	1.9	1.45
		(Lo)	19.5	3.2	2.0	1.10	3.1	2.0	1.15	2.9	1.9	1.27	2.6	1.8	1.39	2.4	1.7	1.52
		0.20	22.0	3.5	1.5	1.16	3.4	1.5	1.21	3.2	1.5	1.33	2.9	1.4	1.48	2.6	1.3	1.58
		11	17.0	2.9	2.4	1.06	2.8	2.4	1.11	2.7	2.4	1.22	2.4	2.2	1.35	2.2	2.0	1.47
		(Me)	19.5	3.3	2.1	1.12	3.2	2.1	1.17	3.0	2.0	1.29	2.7	1.9	1.42	2.5	1.8	1.55
		0.23	22.0	3.6	1.6	1.18	3.5	1.6	1.23	3.3	1.6	1.35	3.0	1.5	1.51	2.7	1.4	1.61
		12	17.0	3.0	2.6	1.08	2.9	2.5	1.13	2.8	2.5	1.24	2.5	2.3	1.37	2.3	2.1	1.50
		(Hi)	19.5	3.4	2.2	1.14	3.3	2.2	1.19	3.1	2.1	1.31	2.8	2.0	1.44	2.5	1.9	1.57
		0.26	22.0	3.7	1.8	1.20	3.6	1.8	1.25	3.4	1.7	1.38	3.1	1.6	1.54	2.8	1.5	1.64
	60	10	17.0	2.8	2.3	1.05	2.7	2.3	1.10	2.6	2.2	1.21	2.3	2.1	1.34	2.1	1.9	1.46
		(Lo)	19.5	3.2	2.0	1.11	3.1	2.0	1.16	2.9	1.9	1.28	2.6	1.8	1.40	2.4	1.7	1.53
		0.20	22.0	3.5	1.5	1.17	3.4	1.5	1.22	3.2	1.5	1.34	2.9	1.4	1.50	2.6	1.3	1.60
		11	17.0	2.9	2.4	1.07	2.8	2.4	1.12	2.7	2.4	1.23	2.4	2.2	1.36	2.2	2.0	1.49
		(Me)	19.5	3.3	2.1	1.13	3.2	2.1	1.18	3.0	2.0	1.30	2.7	1.9	1.43	2.5	1.8	1.56
		0.23	22.0	3.6	1.6	1.19	3.5	1.6	1.24	3.3	1.6	1.36	3.0	1.5	1.52	2.7	1.4	1.62
		12	17.0	3.0	2.6	1.09	2.9	2.5	1.14	2.8	2.5	1.25	2.5	2.3	1.38	2.3	2.1	1.51
		(Hi)	19.5	3.4	2.2	1.15	3.3	2.2	1.20	3.1	2.1	1.32	2.8	2.0	1.45	2.5	1.9	1.58
		0.26	22.0	3.7	1.8	1.21	3.6	1.8	1.26	3.4	1.7	1.39	3.1	1.6	1.55	2.8	1.5	1.65
2UV5S•P	50	10	17.0	3.7	2.9	1.54	3.6	2.9	1.61	3.5	2.9	1.77	3.2	2.8	1.95	3.0	2.6	2.14
		(Lo)	19.5	4.2	2.5	1.62	4.1	2.5	1.70	3.9	2.5	1.86	3.6	2.4	2.05	3.3	2.2	2.24
		0.19	22.0	4.6	1.9	1.71	4.4	1.9	1.79	4.3	1.9	1.96	4.0	1.9	2.19	3.6	1.8	2.33
		12	17.0	4.0	3.2	1.57	3.9	3.2	1.65	3.7	3.2	1.81	3.4	3.0	2.00	3.2	2.9	2.19
		(Me)	19.5	4.5	2.7	1.66	4.3	2.7	1.74	4.1	2.7	1.91	3.9	2.6	2.10	3.6	2.5	2.29
		0.21	22.0	4.9	2.1	1.75	4.7	2.1	1.83	4.5	2.1	2.01	4.2	2.1	2.24	3.9	2.0	2.33
		15	17.0	4.3	3.7	1.62	4.2	3.6	1.70	4.0	3.6	1.89	3.7	3.4	2.11	3.5	3.2	2.30
		(Hi)	19.5	4.9	3.2	1.71	4.7	3.2	1.79	4.5	3.1	1.99	4.2	3.0	2.21	3.9	2.8	2.41
		0.25	22.0	5.3	2.5	1.80	5.1	2.5	1.89	4.9	2.5	2.09	4.6	2.4	2.35	4.2	2.3	2.51
	60	10	17.0	3.7	2.9	1.77	3.6	2.9	1.85	3.5	2.9	2.04	3.2	2.8	2.25	3.0	2.6	2.46
		(Lo)	19.5	4.2	2.5	1.87	4.1	2.5	1.95	3.9	2.5	2.15	3.6	2.4	2.36	3.3	2.2	2.57
		0.19	22.0	4.6	1.9	1.97	4.4	1.9	2.06	4.3	1.9	2.25	4.0	1.9	2.51	3.6	1.8	2.68
		12	17.0	4.0	3.2	1.81	3.9	3.2	1.90	3.7	3.2	2.09	3.4	3.0	2.30	3.2	2.9	2.52
		(Me)	19.5	4.5	2.7	1.91	4.3	2.7	2.00	4.1	2.7	2.20	3.9	2.6	2.42	3.6	2.5	2.64
		0.21	22.0	4.9	2.1	2.01	4.7	2.1	2.11	4.5	2.1	2.31	4.2	2.1	2.58	3.9	2.0	2.68
		15	17.0	4.3	3.7	1.86	4.2	3.6	1.95	4.0	3.6	2.18	3.7	3.4	2.42	3.5	3.2	2.64
		(Hi)	19.5	4.9	3.2	1.97	4.7	3.2	2.06	4.5	3.1	2.29	4.2	3.0	2.54	3.9	2.8	2.77
		0.25	22.0	5.3	2.5	2.07	5.1	2.5	2.17	4.9	2.5	2.40	4.6	2.4	2.71	4.2	2.3	2.89

Input : In case of single Phase models, Shows the values on 220V.

Legend : BF : Bypass Factor
SHC : Sensible Heat Capacity
TC : Total Cooling Capacity
Note *SHC is based on 27°C (DB) temp. of air entering evaporator.
Below 27°C (DB), Subtract (correction factor × ㎥/min) from SHC.
Above 27°C (DB), add (correction factor × ㎥/min) to SHC.
Conversion Multiplier : 1kcal/h=3.968 BTU/h
: 1 ㎥/min=35.3 cfm
:°F=$\frac{9}{5}$ × °C + 32

SHC CORRECTION FACTORS

	ENT AIR TEMP. (DB, °C)				
	26.5	26.0	25.5	25.0	24.5
	27.5	28.0	28.5	29.0	29.5
BF	CORRECTION FACTORS				
0.10	7.72	15.44	23.7	30.88	38.61
0.20	6.86	13.73	20.59	27.46	34.32
0.30	6.09	12.01	18.02	24.02	30.03

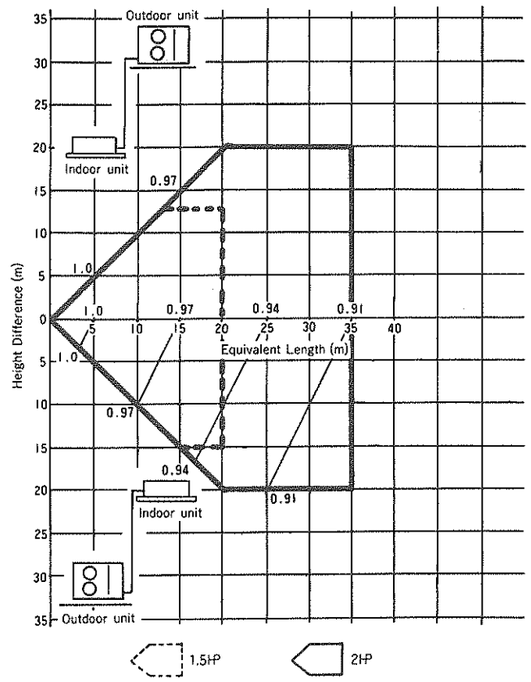
Temperature under 24°C or over 29.5°C use formula.
Correction Factor = 17.16 × (1−BF) × (DB−27)

CORRECTION OF COOLING CAPACITIES

Correction of cooling capacities according to the connecting pipe length.

The data of cooling capacities (marked on the name plate) are based on 5 meters connecting pipe and horizontal installation.

(Cooling)



Equivalent Length = actual pipe length + number of elbow x ELE + number of oil trap x ELO

ELE: equivalent length of elbow.

ELO: equivalent length of oil trap.

Outer diameter of gas side pipe mm (inch)	ELE	ELO
12.7 (1/2)	0.20	1.5

REFRIGERANT ADDITIONAL CHARGE

Before shipment, this air conditioner is filled with the rated amount of refrigerant including additional amount required for air-purging, subject to 5 m piping length. (The rated amount of refrigerant is indicated on the name plate.) But when the piping length exceeds 5 meters, additional charge is required according to the following table.

Model	Ref. Charge
1.5HP	40g per 1m
2HP	70g per 1m

Example: CS-2UV5S

In case of 10 m long pipe (one-way), the amount of refrigerant to be replenished is; (10 − 5) x 70 = 350 g.

8. SAFETY DEVICE, SPECIFICATION OF POWER SOURCE

Specification of Power Source

Item \ Model			CS-1.5UV5S·P	CS-2UV5S·P
Power Source			Single~ 220~240V	Single~ 220~240V
Power Capacity		kVA	5	5
Running Current		A	6.42/6.15	10.17/11.15
Wire Size Up to 10m (33 ft)	Single wire	(mm)	1.6	2
	Twisted Wire	(mm^2)	2.0	3.5
Up to 30m (98 ft)	Single wire	(mm)	2.6	3.2
	Twisted Wire	(mm^2)	5.5	8.0
Up to 50m (160 ft)	Single wire	(mm)	——	——
	Twisted Wire	(mm^2)	14	14
Isolator Switch rating		A	30	40
Element Fuse size		A	20	30

*Stoke-line (/) distinguishes 50/60Hz values.

9. FAN PERFORMANCE CURVE

Indoor Unit		CS-1.5UV5S·P			CS-2UV5S·P		
		Hi	Me	Lo	Hi	Me	Lo
Air Volume	m^3/min	12/12	11/11	10/10	15/15	12/12	10/10
Power Consumption	kW	0.06/0.06	0.05/0.05	0.03/0.03	0.06/0.07	0.05/0.05	0.03/0.04
Fan Speed	rpm	470/470	400/400	330/330	510/510	425/425	365/365
Outdoor Unit		CU-1.5CV12S·P			CU-2CV12S·P		
Air Volume	m^3/min	28/30			28/30		
Power Consumption	kW	0.08/0.10			0.08/0.10		
Fan Speed	rpm	860/950			860/950		

10. OPERATING CHARACTERISTICS

Model	Main Power Source		Compressor Motor			Evaporator Fan Motor		Condenser Fan Motor	
	Voltage (V)	Frequency (Hz)	S.C. (A)	R.C. (A)	IPT (kW)	R.C. (A)	IPT (kW)	R.C. (A)	IPT (kW)
CS-1.5UV5S·P	1~220 230 240	50/60 50 50	22.9/23.6 23.9 24.8	5.77/5.40 5.52 5.29	1.17/1.16 1.17 1.17	0.28/0.29 0.27 0.26	0.06/0.06 0.06 0.06	0.37/0.46 0.36 0.34	0.08/0.10 0.08 0.08
CS-2UV5S·P	1~220 230 240	50/60 50 50	47.0/43.0 49.1 51.3	9.50/10.36 8.55 9.56	1.85/2.12 1.76 1.95	0.30/0.33 0.29 0.28	0.06/0.07 0.06 0.06	0.37/0.46 0.36 0.34	0.08/0.10 0.08 0.08

Legend: S.C.: Starting Current
R.C.: Running Current
IPT: Power Consumption

11. COMPONENT SPECIFICATION

Unit Model			CS-1.5UV5S·P CU-1.5CV12S·P	CS-2UV5S·P CU-2CV12S·P
Compressor Model			2KS220D5AA01 (50Hz) 2KS190H5AA01 (60Hz)	2JS350D3AA01 (50Hz) 2JS282H3AC01 (60Hz)
Compressor Type			Hermetic (Rotary)	
No. of Cylinders			1	1
Piston Displacement	cc/REV.	50Hz	22	35
		60Hz	19	28
Piston Unloading			—	—
Motor Type Starting Method			Direct on-line starting	
Rated Outpul		kW	1.1/1.0 (50Hz/60Hz)	1.7/1.4 (50Hz/60Hz)
Poles			2	2
Insulation Class			E	E
Oil Type			SUNISO 4GDID	SUNISO 4GSD
Charge		ℓ	0.41	0.81

Evaporator and Fan Section (Indoor Uuit)

Models			CS-1.5UV5S·P	CS-2UV5S·P
Evaporator	Tube Material		Copper tube	
	Outer Diameter	mm	9.53	9.53
	Thickness	mm	0.3	0.3
	Rows		2	2
	No. of Tubes/Evap.		10	10
	Fin Material		Aluminium	
	Thickness	mm	0.11	0.11
	Fin Pitch	No./inch	14	16
	Fin Surface		Louver fin	Louver fin
	Total Face Area	m^2	0.225	0.225
Evaporator Fan Type			Turbo fan	
No./Unit			1	1
Evaporator Fan Motor Starting Method			Direct on-line starting	
Rated Outpul		kW	0.02	0.02
Poles			6	6
Phase			single	single
Insulation Class			E	E

Condenser and Fan Section (Outdoor Unit)

Models			CU-1.5CV12S·P	CU-2CV12S·P
Condenser	Tube Material		Copper tube	
	Outer Diameter	mm	7.94	7.94
	Thickness	mm	0.3	0.35
	Rows		2	2
	No. of Tubes/Cond...		46	48
	Fin Material		Aluminium	
	Thickness	mm	0.11	0.11
	Fin Pitch	No./inch	12	14
	Fin Surface		Louver fin	Louver fin
	Total Face Area	m^2	0.380	0.380
Condenser Fan Type			Axial-flow fan	
No./Unit			1	1
Condenser Fan-Motor Starting Method			Direct on-line starting	
Rated Outpul		kW	0.03	0.03
Poles			6	6
Phase			single	single
Insulation Class			E	E

Safety Device

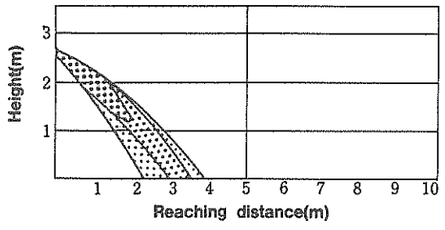
Model		CS-1.5UV5S•P	CS-2UV5S•P
For Compressor High Pressure Switch (63H1)			
Cut-Out	kg/cm2G	—	—
Cut-In	kg/cm2G	—	—
Bimetal thermostat (26S)			
Cut-Out	˚C	148	—
Cut-In	˚C	78	—
Internal Protector		—	Automatic Line-Break
Overcurrent Relay (51C)			
220V/50Hz	A	—	—
220V/60Hz	A	—	—
380, 400V/50Hz	A	—	—
380V/60Hz	A	—	—
415V/50Hz	A	—	—
Internal Thermostat (49C)			
Cut-Out	˚C	—	—
Cut-In	˚C	—	—
Fan Motor Internal Thermostat (49F)			
Cut-Out	˚C	135	135
Cut-In	˚C	88	88
For Control Indoor Unit	A	3	3
Fuse Capacity Outdoor Unit	A	5	5
For Outdoor Fan Motor Pressure Switch (63H2)			
Cut-Out	kg/cm2G	21	21
Cut-In	kg/cm2G	11.5	11.5

13. AIR VELOCITY V.S. REACHING DISTANCE

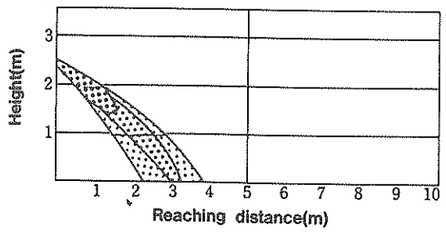
● CS-1.5UV5S•P

(Cooling) > 1.0m/s > 0.5m/s > 0.3m/s

● High Speed (MAIN−FLOW)



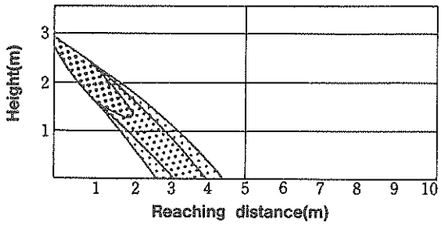
● High Speed (SUB−FLOW)



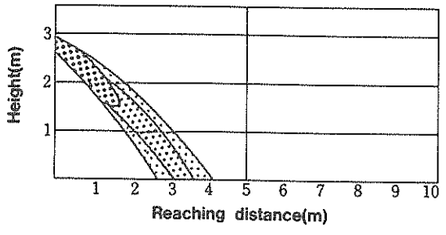
● CS-2UV5S•P

(Cooling) > 1.0m/s > 0.5m/s > 0.3m/s

● High Speed (MAIN−FLOW)

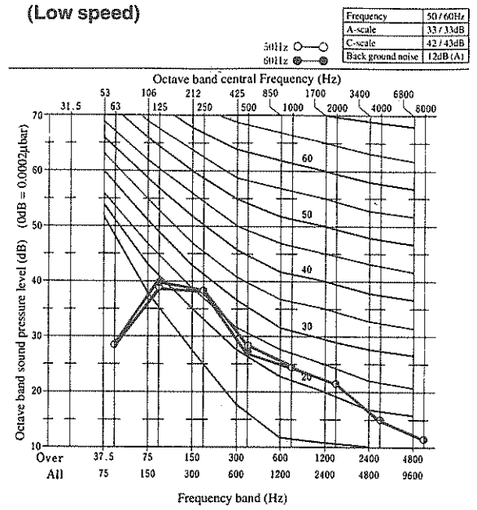


● High Speed (SUB−FLOW)



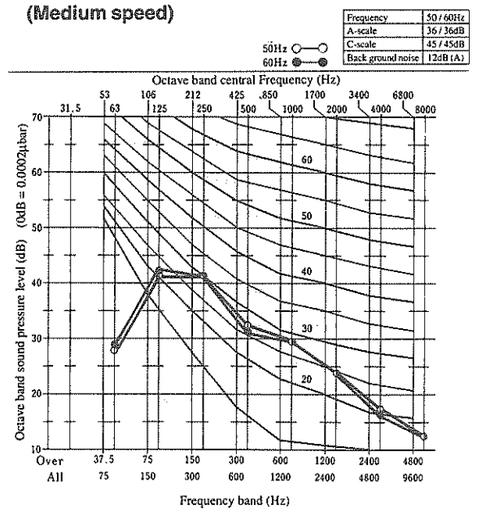
CS-1.5UV5S•P (Low speed)

Frequency	50/60Hz
A-scale	33/33dB
C-scale	42/43dB
Back ground noise	12dB(A)



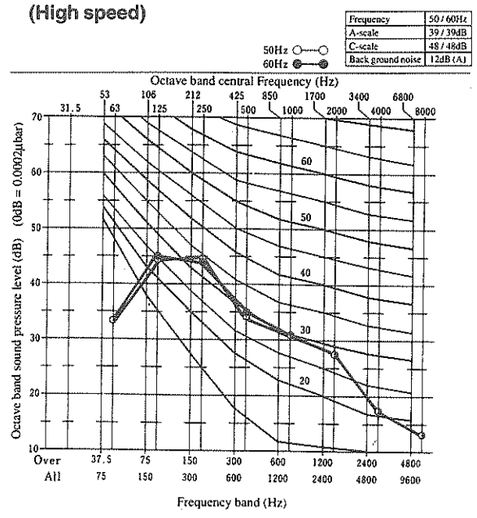
(Medium speed)

Frequency	50/60Hz
A-scale	36/36dB
C-scale	45/45dB
Back ground noise	12dB(A)



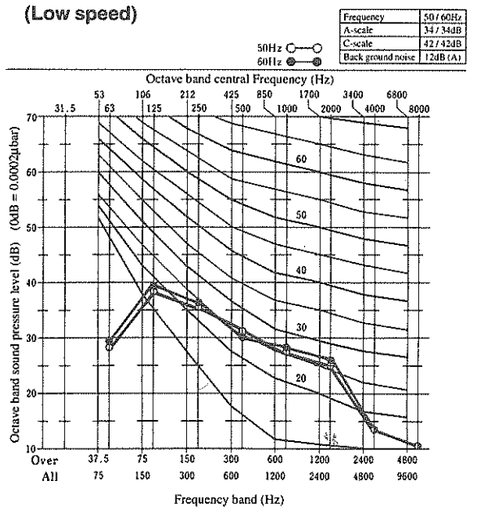
(High speed)

Frequency	50/60Hz
A-scale	39/39dB
C-scale	48/48dB
Back ground noise	12dB(A)



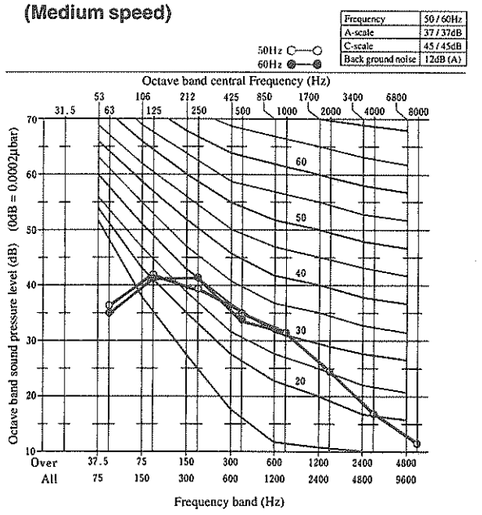
CS-2UV5S•P (Low speed)

Frequency	50/60Hz
A-scale	34/34dB
C-scale	42/42dB
Back ground noise	12dB(A)



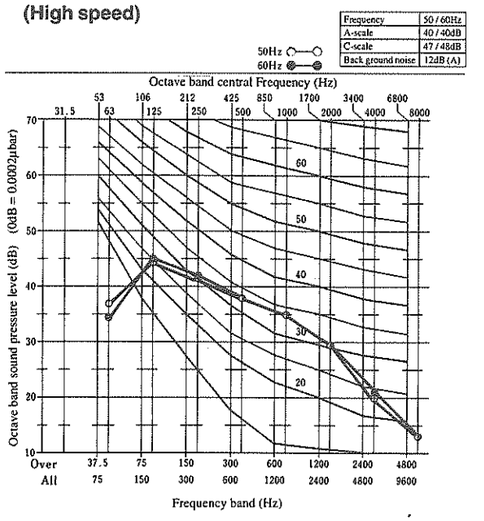
(Medium speed)

Frequency	50/60Hz
A-scale	37/37dB
C-scale	45/45dB
Back ground noise	12dB(A)



(High speed)

Frequency	50/60Hz
A-scale	40/40dB
C-scale	47/48dB
Back ground noise	12dB(A)



Self-Diagnosis Function

To which part a malfunction han occurred is indicated by an LED display in the electron control device. Please be sure to correct the trouble, while referring to the table below, before resuming the operation.

- The CHECK (SET TEMP) indicator in the remote controller, and the self-diagnosis LED (red) display in the printed circuit board of indoor and outdoor unit indicate where a malfunction has occurred.
- The "CHECK" indicator in the remote controller blinks when a malfunction occurs.
- If you press the Check Switch, the SET TEMP indicator in the remote controller shows the nature of the malfunction.

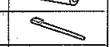
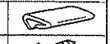
Nature of Malfunction	Remote Controller Indicator Code	Indoor Unit LED 1	2	3	4	Outdoor Unit LED 1	2	3	4	Malfunction Location (Check Point)
Drainage Malfunction	E 2	○	○		○	○				Dofective drainage float switch (Drain pump, drain pipe arrangement)
Room temperature sensor malfunction	E 3		○			○				Defective room temperature sensor (Room temperature sensor lead wire)
Indoor unit pipe arrangement temperature sensor malfunction	E 4			○		○				Defective pipe arrangement temperature sensor (Pipe arrangement temperature sensor lead wire)
Transmission error from the remote controller	E 5	○	○	○	○	○				Error in data transmission from the remote controller (Confirm the wave form of transmission)
Disconnection of the remote controller	(E 5)	○	○			○				Defective wire of the remote controller cord (Remote controller cord or connector terminals)
Error in transmission between the indoor and outdoor units	E 6		○	○	○	○				Error in data transmission between the interior and exterior units (Confirm the wave form of transmission between the units)
Disconnection between the indoor and outdoor units	E 6			○	○	○				Defective wire of the connector cord between the interior and exterior units (Connector cord of the interior unit or connector terminal)
Louver malfunction (see Note 1)	E 9	○			○	○				Defective louver switch (LS) (Motor and connector terminal for louver)
Protection against excess current	E 13	○				○			○	Exterior unit protection against excess current (Confirm the lock or that the compressor is out of phase)
Defective outdoor pipe arrangement temperature sensor	E 18	○		○				○		Defective exterior pipe arrangement temperature thermistor (Exterior pipe arrangement temperature thermistor lead wire)
High pressure switch cut out	E 15	○				○	○			High pressure switch cut out (Confirm radiator and pipe arrangement systems)

○···illuminates

- Blinking LED5 (yellow) for indoor and outdoor printed circuit boad indicates that the microcomputer of the electronic control device is properly functioning.
- Illuminating LED6 (red) for indoor and outdoor printed circuit boad indicates that the power for the electronic control device is on.

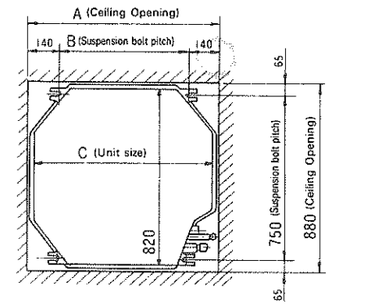
(Note 1) In the cases of louver malfunction, the CHECK indicator blinks, but the machine continues to operate.

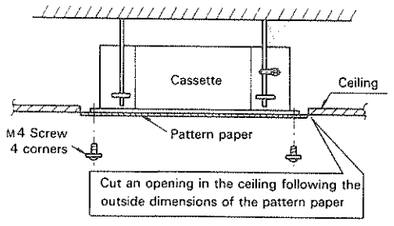
PARTS PACKED WITH INDOOR UNIT

Name	Q'ty	
Drain hose	1	
Insulation tube	1	
Band	2	
Cord cramp	1	
ϕ10 washer	8	
Pattern paper for installation	1	
M4 Screw	4	

- **Ceiling hole size and suspension bolt position**

Model No.	A	B	C
CS-1.5UV5S•P CS-2UV5S•P	880	600	820





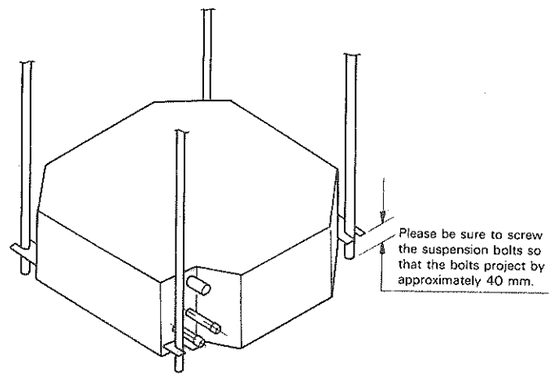
〈Tips for cutting an opening in the ceiling〉

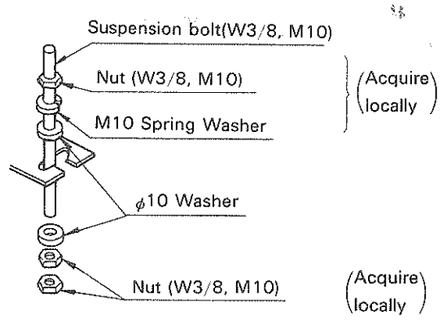
The dimensions of the pattern paper are the same as those of the hol es cut into the ceiling.

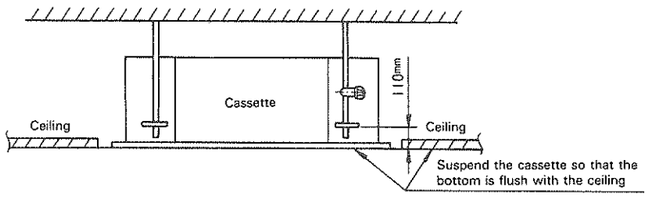
Please be sure to leave the pattern paper on the cassette until ceiling construction is completely finished.

＊Please keep in close touch with those in charge of ceiling construct-ion.

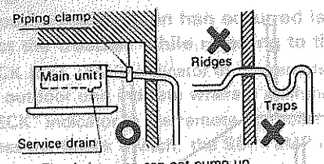
- **Suspension bolt installation and suspension notes**







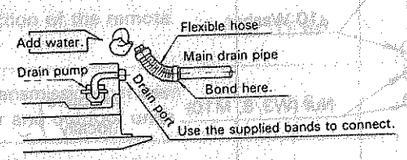
- **Drainage preparations.**



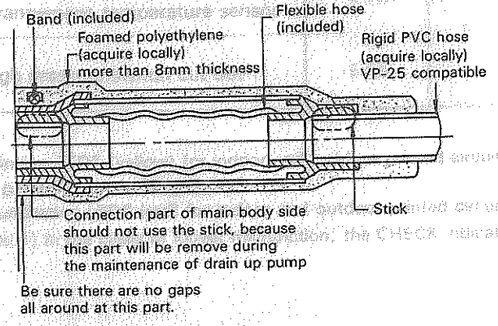
1. **Drain piping must be located on a downward slope (1/50 ~ 1/100), and with no obstacles which would cause a reverse flow.**
2. **When making drain pipe connections, be careful not to apply force to the drain connection port of the indoor unit.**
3. **The diameter of the drain connection port of the outdoor unit is 32 mm (rigid polyvinyl chloride pipe VP-25).**
4. **Be sure to insulate the drain piping (polyethylene foam, 8 mm or thicker).**

- **Drainage test**

This air conditioner uses a drain pump. Supply water as shown in the figure below, and then perform the drainage test.



- Leave the drain pipe connected temporarily until the drainage test is completed.
- Supply water through the flexible hose as shown in the figure at left, and check for any water leakage in the piping.
- Be sure to check drain pump operation.
- When the drain test is completed, connect (bond) the flexible hose and the main drain pipe.



Drain piping notes

1. Connect the flexible hose (included) all the way and then secure it by using the band (included).
2. Drain piping must be on a downward slope, and care should be taken regarding bends in the flexible hose.

Refrigerant amount

Before shipment, this air conditioner is filled with the rated amount of refrigerant including additional amount required for air-purging, subject to 5 m piping length. (The rated amount of refrigerant is indicated on the name plate.) But when the piping length exceeds 5 meters, additional charge is required according to the following table.

Model	Ref. Charge
1.5HP	40 g per 1 m
2HP	70 g per 1 m

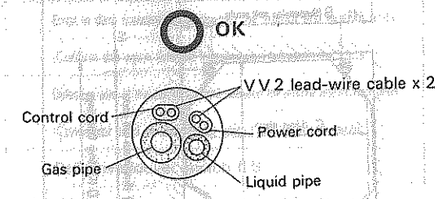
Example: CS-2UV5·P

In case of 10 m long pipe (one-way), the amount of refrigerant to be replenished is; (10 – 5) x 70 = 350 g.

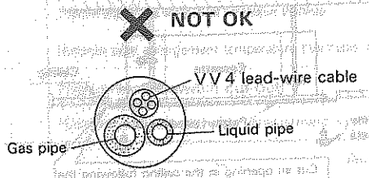
6-5 Wiring

Use the special 2-lead wire cable (V V cable) as shown below rather than a 4-lead wire cable for the power and control cords connecting the indoor and outdoor units in order to prevent incorrect operation (noise generation).

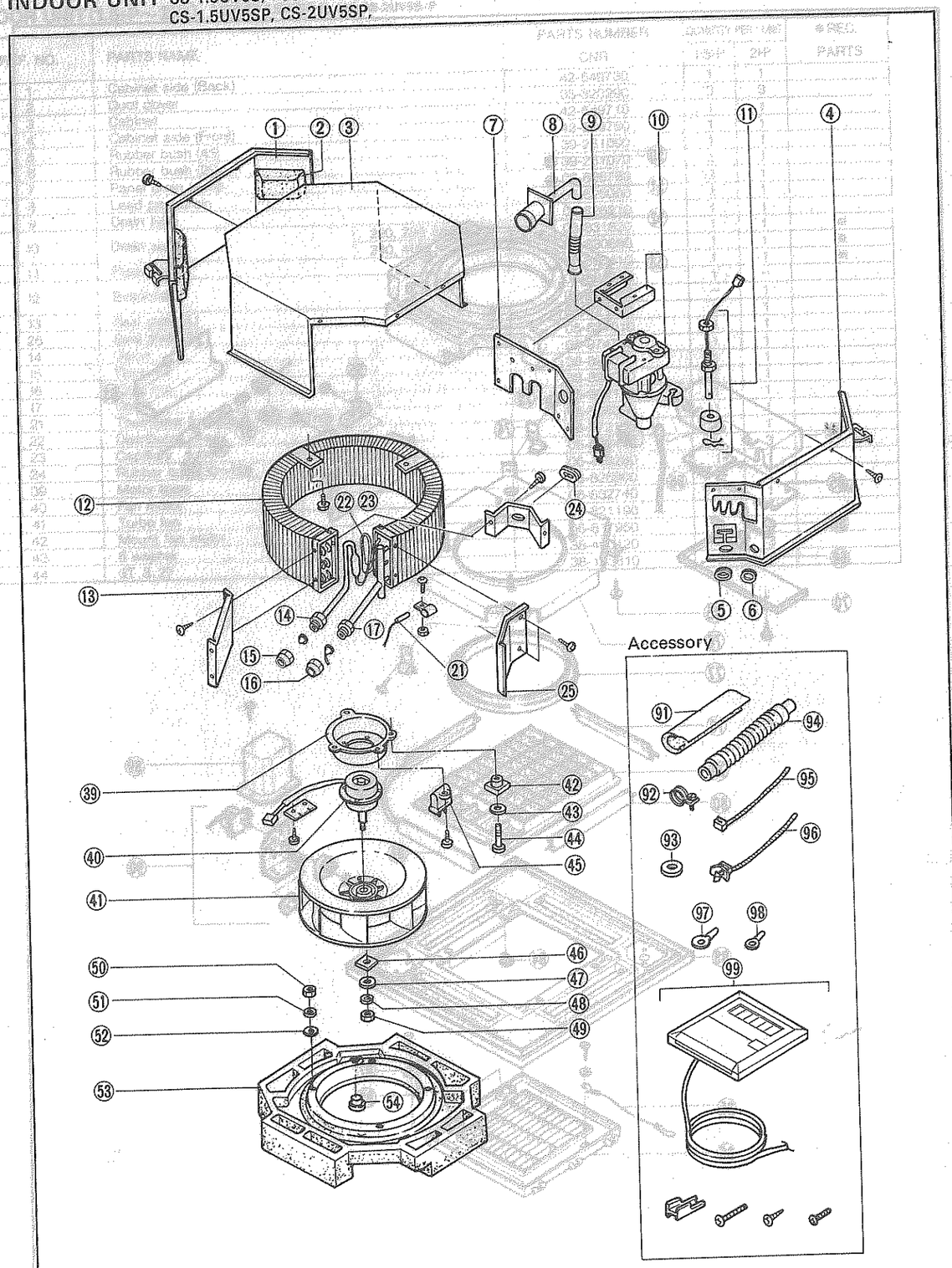
Example 1 V V 2 lead-wire cable

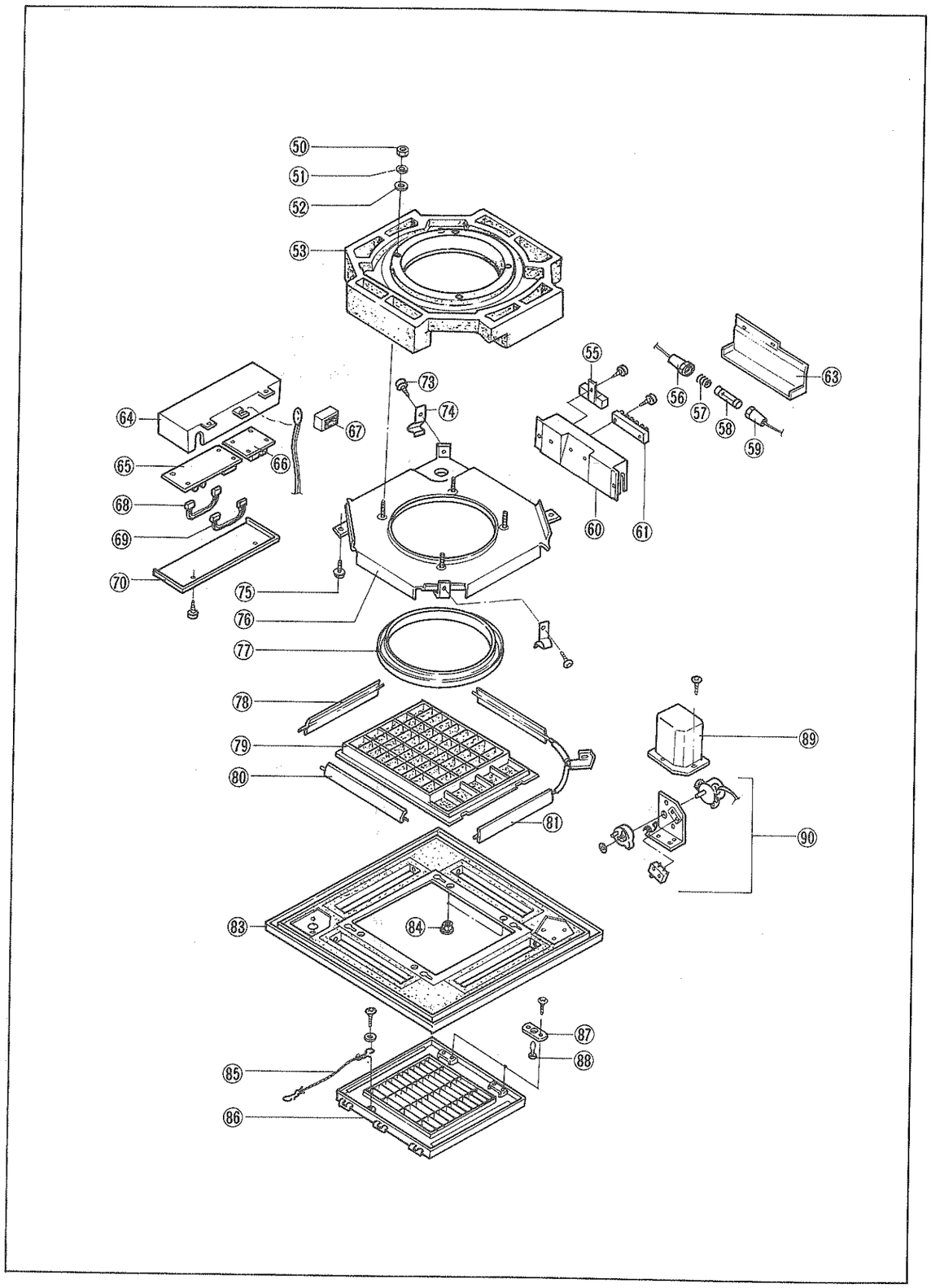


Example 2 V V 4 lead-wire cable



INDOOR UNIT CS-1.5UV5S, CS-2UV5S, CS-1.5UV5SP, CS-2UV5SP





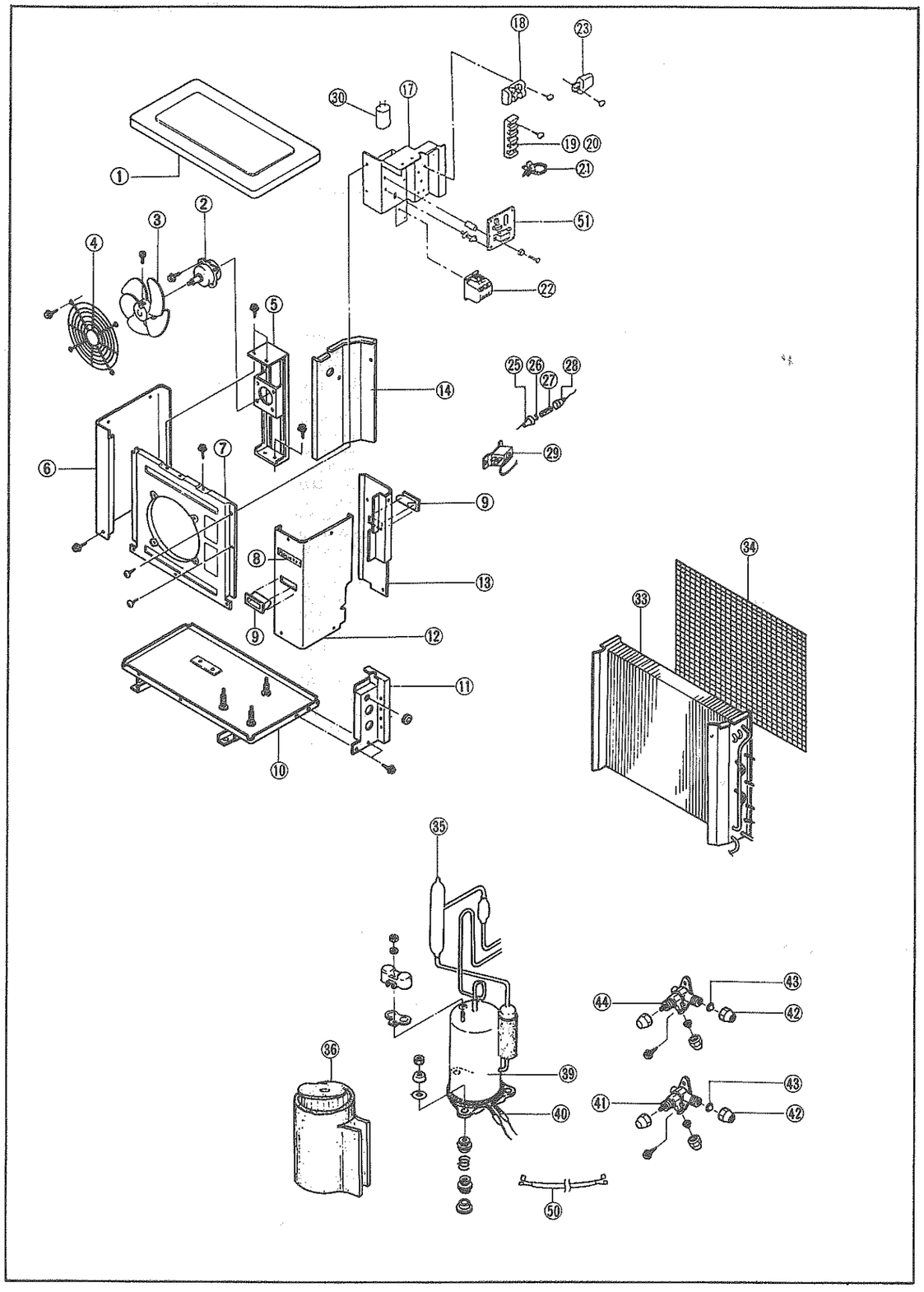
INDOOR UNIT (1.5HP～2HP) 1.5HP:CS-1.5UV5S·P, 2HP:CS-2UV5S·P

REF. NO.	PARTS NAME		PARTS NUMBER CNR	QUANTITY PER 1 UNIT 1.5HP	QUANTITY PER 1 UNIT 2HP	※REC. PARTS
1	Cabinet side (Back)		42-549730	1	1	
2	Duct cover		05-820290	3	3	
3	Cabinet		42-549710	1	1	
4	Cabinet side (Front)		42-549750	1	1	
5	Rubber bush (45)		39-251090	1	1	
6	Rubber bush (29)		39-251070	1	1	
7	Panel drain pump		06-826780	1	1	
8	Lead pipe drain		06-826060	1	1	
9	Drain tube		06-826210	1	1	
10	Drain pump	220, 230, 380, 400V	06-831820	1	1	※
		240, 415V	06-830680	1	1	※
11	Float switch		06-828110	1	1	※
12	Evaporator		05-821000	1	—	
			05-822060	—	1	
13	Seal plate (L)		05-821020	1	1	
25	Seal plate (R)		05-821010	1	1	
14	Union	1/4"	05-974740	1	1	
15	Flare nut	1/4"	38-890070	1	1	
16	Flare nut	1/2"	38-890090	1	1	
17	Union	1/2"	05-962170	1	1	
21	Thermistor for Indoor Piping (Th2)		06-826390	1	1	
22	Distributor Assy		45-572150	—	1	
23	Capillary tube		05-822140	—	3	
24	Rubber bush(30～80)		06-496280	1	1	
39	Motor base		06-826900	1	1	
40	Fan motor		06-832740	1	1	※
41	Turbo fan		05-821190	1	1	※
42	Mount fan motor		06-817950	3	3	
43	6 washer		38-490120	3	3	
44	5T.S.27		38-193610	3	3	

INDOOR UNIT (1.5HP～2HP) 1.5HP:CS-1.5UV5S・P, 2HP:CS-2UV5S・P

REF. NO.	PARTS NAME		PARTS NUMBER CNR	QUANTITY PER 1 UNIT 1.5HP	QUANTITY PER 1 UNIT 2HP	※REC. PARTS
45	Electric capacitor	460V,1.6μF	06-831080	1	1	※
46	Washer for Fan		05-820310	1	1	
47	8 Washer		38-417010	1	1	
48	8 S P Washer		38-427080	1	1	
49	8 NUT		38-817010	1	1	
53	Drain pan		45-572310	1	1	
54	Drain pan cap		05-811470	1	1	
55	Serge absorber		06-498370	1	1	※
56	Fuse holder top		06-478380	1	1	
57	Fuse holder spring		06-478390	1	1	
58	Fuse (3A)		06-462980	1	1	
59	Fuse holder bottom		06-478400	1	1	
60	Terminal board Box		06-826180	1	1	
61	Terminal board (4P)		06-830510	1	1	
	Terminal board (8P)		06-831690	1	1	
63	Cover for Terminal board Box		06-826680	1	1	
64	Relay box		06-826080	1	1	
65	Printed Circuit Board (A)		06-830500	1	1	※
66	Printed Circuit Board (B)	220, 230, 380, 400V	06-830450	1	1	※
		240, 415V	06-830460	1	1	※
67	Tumbler switch		06-440050	1	1	
68	Connector for Relay		46-827220	1	1	
69	Connector for Transformer		46-827230	1	1	
70	Cover for Relay box		06-826120	1	1	
74	Drain pan holder		02-832050	2	2	
76	Drain pan panel		42-549550	1	1	
77	Orifice ring		05-822150	1	1	
78	Wing (Middle)		43-512580	1	1	
79	Air Filter		03-414720	1	1	※
80	Wing (Long)		43-512590	2	2	
81	Wing (Short)		43-512570	1	1	
83	Grill outer		43-513730	1	1	
84	Latch		03-415360	2	2	
85	Wire		47-512890	1	1	
86	Inlet grille		03-414660	1	1	
87	Latch (female)		03-406440	2	2	
88	Latch (male)		03-406430	2	2	
89	Louver motor cover		06-826360	1	1	
90	Louver motor		46-832530	1	1	
94	Drain hose		05-809090	1	1	
99	Romote controller	National	46-832690	1	1	※
		Panasonic	46-832700	1	1	※

OUTDOOR UNIT (CU-1.5CV12S・P / CU-2CV12S・P)



OUTDOOR UNIT (CU-1.5CV12S·P / CU-2CV12S·P)

REF. NO.	PARTS NAME		PARTS NUMBER CNR	QUANTITY PER 1UNIT CU-1.5CV12S·P	QUANTITY PER 1UNIT CU-2CV12S·P	※REC. PARTS
1	Top panel		02-847030	1	1	
2	Fan motor	AC30W	06-830860	1	1	※
3	Propeller fan		45-549020	1	1	
4	Fan guard		02-829810	1	1	
5	Motor stay		42-532490	1	1	
6	Side panel(Left)		02-829990	1	1	
7	Front panel		02-829950	1	1	
9	Shell hanger		04-414080	2	2	
10	Unit base		42-539880	1	—	
			42-559030	—	1	
11	Service valve stay		05-970030	1	1	
12	Front panel (Right)		02-830000	1	1	
13	Back panel(Right)		42-548120	1	1	
14	Seal plate		42-532500	1	—	
			42-537790	—	1	
17	Control box		46-854390	1	1	
18·19	Terminal boand		06-830510	1	1	
		4P	06-830560	1	1	
21	Cord band		06-460100	1	1	
22	Compressor relay (52C)	220, 230V	06-805840	1	1	※
		240V	06-805850	1	1	※
23	Electric capacitor for fan motor	1.4MF 220,230V	06-835440	1	1	※
		1.2MF 240V	06-835430	1	1	※
25	Fuse holder (Bottom)		06-478400	1	1	
26	Spring		06-478390	1	1	
27	Fuse (5A)		06-460290	1	1	
28	Fuse holder (Top)		06-478380	1	1	
29	Pressure switch		06-827080	1	1	
30	Electric capacitor for compressor	—	06-834470	1	—	※
		220V/60Hz	06-834460	—	1	※
		220, 230, 240V/50Hz	06-834480	—	1	※
33	Condenser		05-980930	1	—	
			05-966190	—	1	
34	Condenser guard		05-957820	1	1	
35	Accumulator		45-560830	1	—	
			45-558160	—	1	
36	Compressor cover		05-964690	1		
			05-957620	—	1	
39	Compressor	220V/60Hz	05-981530	1	—	※
			05-973580	—	1	※
		220, 230, 240V/50Hz	05-981540	1	—	※
			05-973570	—	—	※
40	Crank-case heater		46-809950	1	1	
			46-813010	—	1	
41	Service valve	¼	05-467920	1	1	
42	Flare nut	¼	38-890070	1	1	
		½	38-890090	1	1	
43	Bonnet	¼	05-464010	1	1	
		½	05-961750	1	1	
44	Service valve	½	05-975900	1	1	
45	Protector	220V/60Hz	06-812900	1	—	※
		220, 230, 240V/50Hz	06-812910	1	—	※
50	Compressor cord		46-854450	1	—	
			46-854470	—	1	
	capillary tube		05-964850	1	—	
51	Printed circuit board	220, 230V	06-830470	1	1	※
		240V	06-830830	1	1	※
	Pipe temperature sensor		46-833290	1	1	※
	Serge absorber		06-498370	1	1	※