

TOSHIBA

FILE NO. A90-9607

SERVICE MANUAL

AIR-CONDITIONER

SPLIT BUILT-IN DUCT TYPE, HEAT PUMP

RAV-362BH-PE/RAV-363AH8-PE

RAV-462BH-PE/RAV-463AH8-PE

SPLIT CEILING TYPE, HEAT PUMP

RAV-362CH-PE/RAV-363AH8-PE

RAV-462CH-PE/RAV-463AH8-PE

SPLIT CASSETTE TYPE, HEAT PUMP

RAV-362UH-PE/RAV-363AH8-PE

RAV-462UH-PE/RAV-463AH8-PE

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SUMMARY

- The units referred to within this manual conform with the protection requirements of Directives 89/336/EEC Electromagnetic Compatibility and 73/23/EEC Low Voltage.
- Operating conditions of units are as follows:

TEMPERATURE	
OUTDOOR TEMPERATURE	-2 TO 43°C (COOL) -10 TO 21°C (HEAT)
ROOM TEMPERATURE	18 TO 32°C (COOL) 15 TO 29°C (HEAT)
ROOM HUMIDITY	LESS THAN 80% (COOL)

Note 1: Cooling Capacity is based on the following temperature conditions:
Indoor air inlet temperature 27°C DB, 19°C WB.
Outdoor air inlet temperature 35°C DB.

Note 2: Heating Capacity is based on the following temperature conditions:
Indoor air inlet temperature 20°C DB.
Outdoor air inlet temperature 7°C DB, 6°C WB.

1. IMPORTANT NOTES

a. Refer to Service Manual, **File No. A90-9503** for details of Indoor Units and control circuits.

b. Reverse Phase Protector

The Scroll Compressor used in this unit can only rotate in one direction. For this reason a protective device (Reverse Phase Protector) is fitted to prevent incorrect wiring of the electrical phases. If the red LED on the remote controller does not flash when the system is switched on, then the wiring to the outdoor unit should be checked to ensure that the three phases are wired in the correct sequence.

c. Inner Overload Relay

If the Inner Overload Relay operates, the Magnetic Contactor will remain energised, but the compressor will stop. In this event Fault Code "09" will appear on the Remote Controller.

d. Delivery Temperature Sensor (T.D. Sensor)

An additional sensor is fitted to this unit to prevent the compressor from overheating. During abnormal conditions the following fault codes may appear:

Fault Code "1E" – Indicates a Refrigerant Gas Leak.

Fault Code "19" – Indicates T.D. sensor open circuit or short circuit.

e. Special Refrigerant Reclaim Procedure for Scroll Compressors

When the refrigerant charge is reclaimed only from the discharge side of Scroll Compressor, it is possible that the suction side of compressor remains pressurised. If a brazing torch is applied to the suction side the pressurised refrigerant and oil mixture could ignite.

THIS COULD RESULT IN A FIRE AND / OR SEVERE PERSONAL INJURY.

The refrigerant gas **MUST** be reclaimed simultaneously from the discharge and suction sides of the outdoor unit to avoid this possible problem.

2. SPECIFICATIONS

ITEM		MODEL	RAV-362BH-PE	RAV-462BH-PE
Cooling capacity	kW		10.0	12.5
Heating capacity	kW		10.8	13.8
Power source	Phase		3	3
	V		380-415	380-415
	Hz		50	50
Power consumption	kW	COOLING	4.2	5.15
		HEATING	4.0	4.9
Power factor	%		89	87
Running current	A		6.8	8.5
Starting current	A		42	50
Operating noise (SPL)	Indoor unit (High, Med, Low) dB (A)		45/42/39	46/43/40
	Outdoor unit dB (A)		55	55
Refrigerant	Name of refrigerant		R-22	R-22
	Charge volume kg		3.4	3.9
	Add. volume (20-50m) g/m		50	50
Refrigerant control			Capillary tube & Expansion valve	Capillary tube & Expansion valve
Interconnection pipe	Larger side size *1 mm		ø 19 (ø22)	ø 19 (ø22)
	Coupler style		Flare	Flare
	Smaller side size mm		ø 9.5	ø 9.5
	Coupler style		Flare	Flare
	Standard length m		7.5	7.5
	Maximum pipe lengths m		50	50
	Maximum height difference If indoor unit higher m		20	20
	If outdoor unit higher m		50	50
Condensate drain pipe diameter	mm		ø 32 (OD)	ø 32 (OD)
INDOOR UNIT Model			RAV-362BH-PE	RAV-462BH-PE
Appearance colour			Black (zinc galvanized steel + thermal insulator)	
Dimensions	Height mm		345	345
	Width mm		1,350	1,350
	Depth mm		800	800
Net weight	kg		58	62
Heat exchanger type			Finned tube	Finned tube
Indoor fan type			Multi-blade fan	Multi-blade fan
Air volume	m ³ /h		1,820	2,100
Fan motor output	W		120	140
External static pressure	Standard mmAq		4	4
	Max. motor mmAq		10	10
OUTDOOR UNIT Model			RAV-363AH8-PE	RAV-463AH8-PE
Appearance colour			Bronze white (Munsell 6Y7.5/1)	Bronze white (Munsell 6Y7.5/1)
Dimensions	Height mm		1,240	1,240
	Width mm		930	930
	Depth mm		385	385
Net weight	kg		101	109
Heat exchanger type			Finned tube	Finned tube
Outdoor fan type			Propeller fan	Propeller fan
Air flow volume	m ³ /h		6,000	6,000
Fan motor output	W		39+63	39+63
Compressor	Model		ZR49K3-TFD	ZR61K3-TFD
	Output kW		3.0	3.75
Safety device			High pressure switch, Fuse, Reverse Phase Protector, Crankcase heater, Inner overload relay,	High pressure switch, Fuse, Reverse Phase Protector, Crankcase heater, Inner overload relay,
CEILING PANEL Model			Delivery temperature sensor. RBC-B460PE(W)	Delivery temperature sensor. RBC-B460PE(W)
Appearance colour			Silky mist (Munsell 1Y8.9/0.5)	Silky mist (Munsell 1Y8.9/0.5)
Dimensions	Height mm		40	40
	Width mm		1,430	1,430
	Depth mm		500	500
Net weight	kg		7	7
Air filter			Washable	Washable
Flexible duct			RBC-FD202E	
Blowout unit			RBC-BU1E(W)	
Suction canvas			RBC-CA460BE	
Long-life filter kit			RBC-LK460BE	
Built-in duct filter kit			RBC-RK462BE-PE	

Specifications are subject to change without notice.

* Note 1: (ø22) should be used when length of pipe exceeds 30m.

ITEM		MODEL	RAV-362CH-PE		RAV-462CH-PE	
Cooling capacity		kW	10.0		12.5	
Heating capacity		kW	10.8		13.8	
Power source		Phase	3		3	
		V	380-415		380-415	
		Hz	50		50	
			COOLING	HEATING	COOLING	HEATING
Power consumption		kW	4.2	4.0	5.15	4.9
Power factor		%	89	86	87	88
Running current		A	6.8	6.7	8.5	8.0
Starting current		A	42		50	
Operating noise (SPL)	Indoor unit (High, Med, Low)	dB (A)	47/43/40		49/45/41	
	Outdoor unit	dB (A)	55		55	
Refrigerant		Name of refrigerant	R-22		R-22	
		Charge volume	3.4		3.9	
		Add. volume (20-50m)	50		50	
Refrigerant control			Capillary tube & Expansion valve		Capillary tube & Expansion valve	
Interconnection pipe	Larger side size	*1 mm	ø 19 (ø22)		ø 19 (ø22)	
	Coupler style		Flare		Flare	
	Smaller side size	mm	ø 9.5		ø 9.5	
	Coupler style		Flare		Flare	
	Standard length	m	7.5		7.5	
	Maximum pipe lengths	m	50		50	
	Maximum height difference If indoor unit higher	m	20		20	
	If outdoor unit higher	m	50		50	
Condensate drain pipe diameter		mm	ø 20 (ID)		ø 20 (ID)	
INDOOR UNIT Model			RAV-362CH-PE		RAV-462CH-PE	
Appearance colour			Silky mist		Silky mist	
Dimensions	Height	mm	240		240	
	Width	mm	1,430		1,630	
	Depth	mm	640		640	
Net weight		kg	39		44	
Heat exchanger type			Finned tube		Finned tube	
Indoor fan type			Multi-blade fan		Multi-blade fan	
Air volume		m ³ /h	1,680		2,100	
Fan motor output		W	75		75	
Air filter			Washable		Washable	
OUTDOOR UNIT Model			RAV-363AH8-PE		RAV-463AH8-PE	
Appearance colour			Bronze white (Munsell 6Y7.5/1)		Bronze white (Munsell 6Y7.5/1)	
Dimensions	Height	mm	1,240		1,240	
	Width	mm	930		930	
	Depth	mm	385		385	
Net weight		kg	101		109	
Heat exchanger type			Finned tube		Finned tube	
Outdoor fan type			Propeller fan		Propeller fan	
Air flow volume		m ³ /h	6,000		6,000	
Fan motor output		W	39+63		39+63	
Compressor		Model	ZR49K3-TFD		ZR61K3-TFD	
		Output	kW		3.75	
Safety device			High pressure switch, Fuse, Reverse Phase Protector, Crankcase heater, Inner overload relay, Delivery temperature sensor.		High pressure switch, Fuse, Reverse Phase Protector, Crankcase heater, Inner overload relay, Delivery temperature sensor.	

Specifications are subject to change without notice.

* Note 1: (ø22) should be used when the length of pipe exceeds 30m.

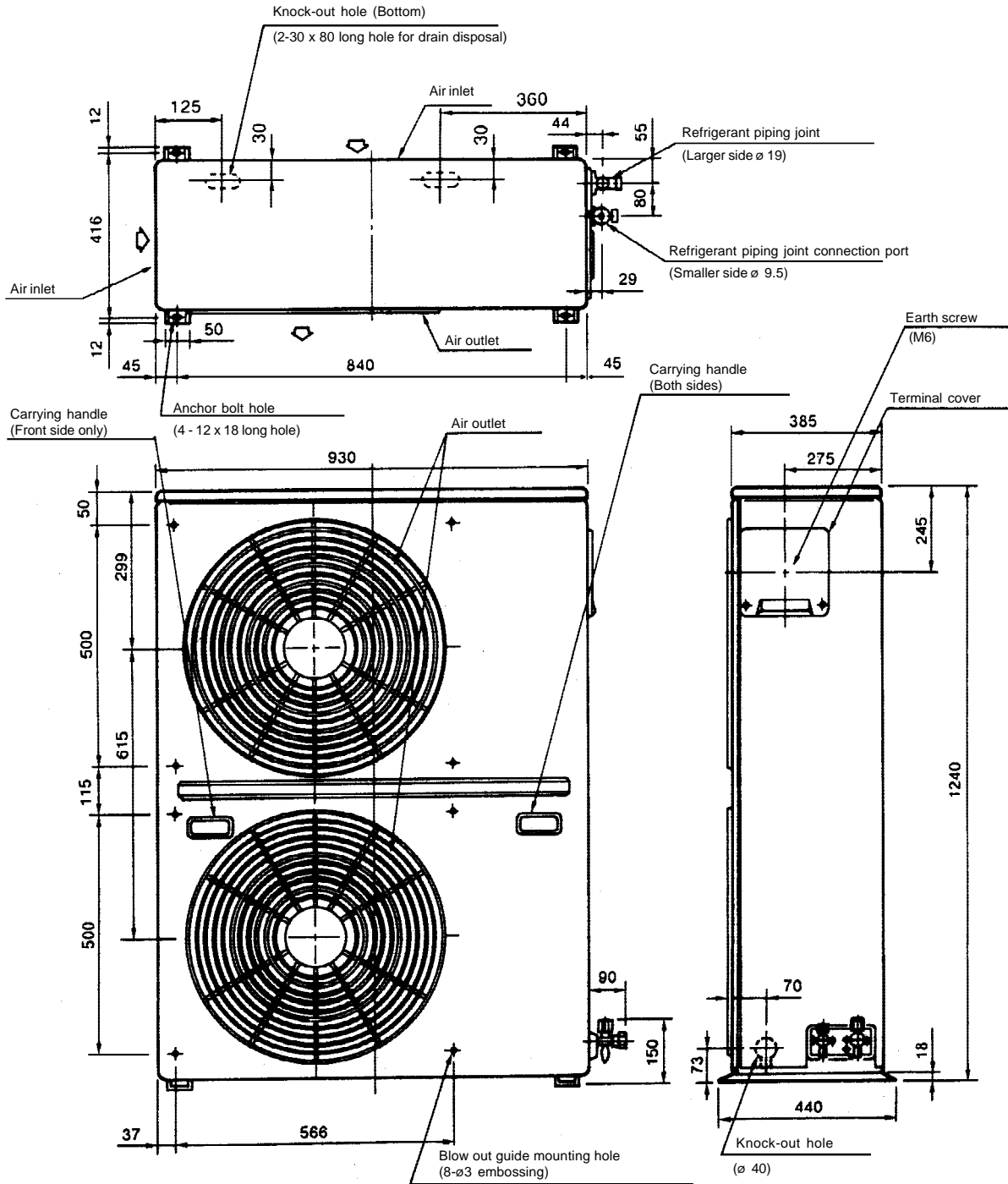
ITEM		MODEL	RAV-362UH-PE		RAV-462UH-PE	
Cooling capacity	kW		10.0		12.5	
Heating capacity	kW		10.8		13.8	
Power source	Phase		3		3	
	V		380-415		380-415	
	Hz		50		50	
Power consumption	kW		COOLING	HEATING	COOLING	HEATING
			4.2	4.0	5.15	4.9
Power factor	%		89	86	87	88
Running current	A		6.8	6.7	8.5	8.0
Starting current	A		42		50	
Operating noise (SPL)	Indoor unit	dB (A)	50/45/42		52/47/44	
	Outdoor unit	dB (A)	55		55	
Refrigerant	Name of refrigerant		R-22		R-22	
	Charge volume	kg	3.4		3.9	
	Add. volume (20-50m)	g/m	50		50	
Refrigerant control			Capillary tube & Expansion valve		Capillary tube & Expansion valve	
Interconnection pipe	Larger side size	*1 mm	ø 19 (ø22)		ø 19 (ø22)	
	Coupler style		Flare		Flare	
	Smaller side size	mm	ø 9.5		ø 9.5	
	Coupler style		Flare		Flare	
	Standard length	m	7.5		7.5	
	Maximum pipe lengths	m	50		50	
	Maximum height difference If indoor unit higher	m	20		20	
	If outdoor unit higher	m	50		50	
Condensate drain pipe diameter	mm		ø 32 (OD)		ø 32 (OD)	
INDOOR UNIT Model			RAV-362UH-PE		RAV-462UH-PE	
Appearance colour			Black (zinc galvanized steel + thermal insulator)			
Dimensions	Height	mm	350		350	
	Width	mm	1,130		1,130	
	Depth	mm	740		740	
Net weight	kg		53		53	
Heat exchanger type			Finned tube		Finned tube	
Indoor fan type			Centrifugal fan		Centrifugal fan	
Air volume	m ³ /h		1,680		1,860	
Fan motor output	W		80		90	
Air filter			Washable		Washable	
OUTDOOR UNIT Model			RAV-363AH8-PE		RAV-463AH8-PE	
Appearance colour			Bronze white (Munsell 6Y7.5/1)		Bronze white (Munsell 6Y7.5/1)	
Dimensions	Height	mm	1,240		1,240	
	Width	mm	930		930	
	Depth	mm	385		385	
Net weight	kg		101		109	
Heat exchanger type			Finned tube		Finned tube	
Outdoor fan type			Propeller fan		Propeller fan	
Air flow volume	m ³ /h		6,000		6,000	
Fan motor output	W		39+63		39+63	
Compressor	Model		ZR49K3-TFD		ZR61K3-TFD	
	Output	kW	3.0		3.75	
Safety device			High pressure switch, Fuse, Reverse Phase Protector, Crankcase heater, Inner overload relay,		High pressure switch, Fuse, Reverse Phase Protector, Crankcase heater, Inner overload relay,	
CEILING PANEL Model			Delivery temperature sensor. RBC-U462PG(W)-PE		Delivery temperature sensor. RBC-U462PG(W)-PE	
Appearance colour			Silky mist (Munsell 1Y8.9/0.5)		Silky mist (Munsell 1Y8.9/0.5)	
Dimensions	Height	mm	28		28	
	Width	mm	1,290		1,290	
	Depth	mm	840		840	
Net weight	kg		10		10	
Air filter			Washable		Washable	

Specifications are subject to change without notice.

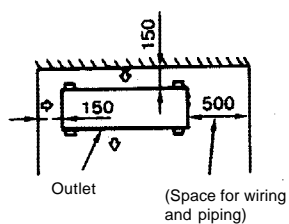
* Note 1: (ø22) should be used when the length of pipe exceeds 30m.

3. CONSTRUCTION VIEWS

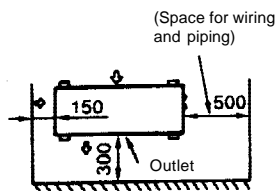
RAV-363AH8-PE
RAV-463AH8-PE



Space required for service

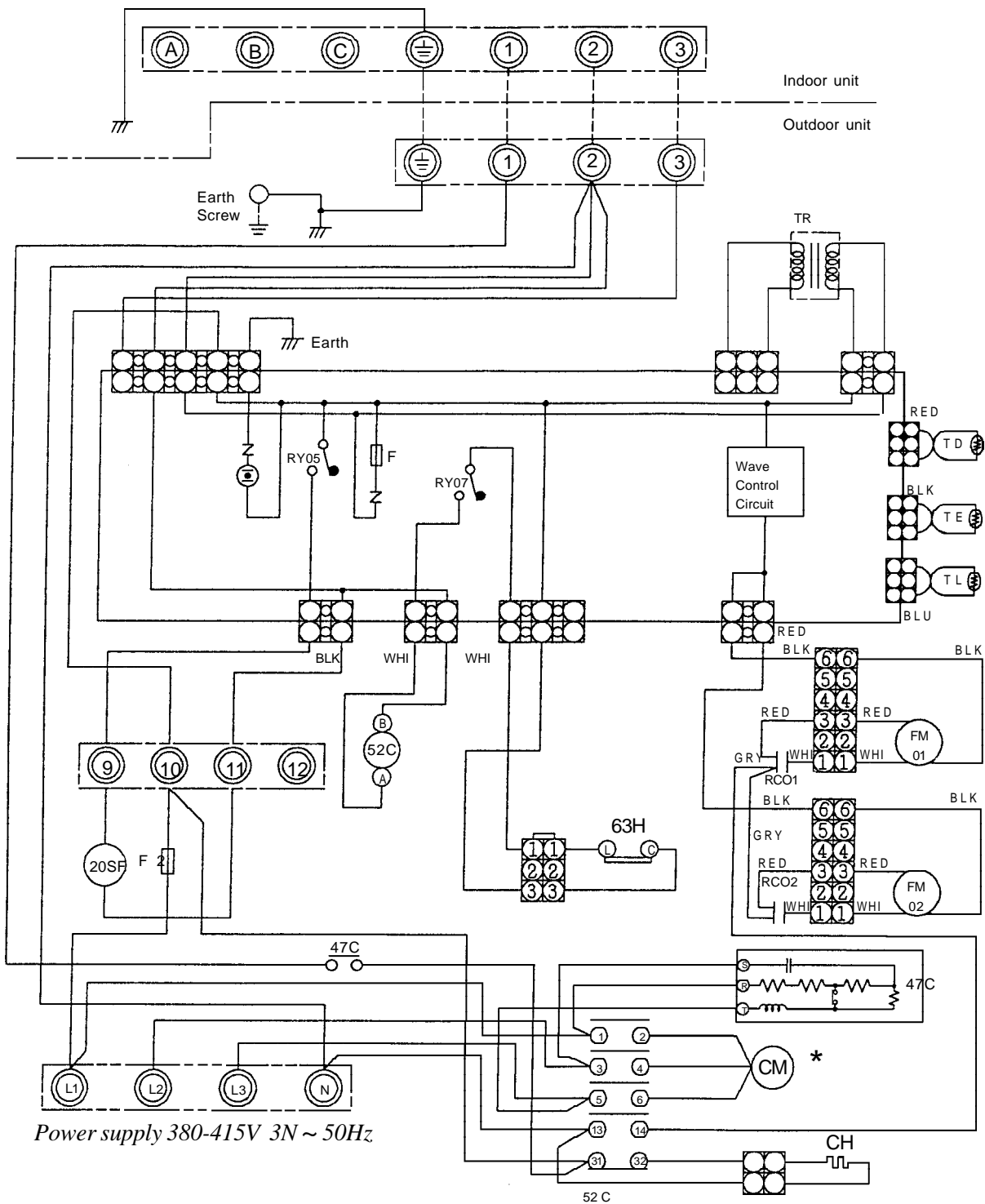


When installed with the inlet faced to the wall side



When installed with the outlet faced to the wall side

4. WIRING DIAGRAM



1. Ⓢ shows terminal block and figures show terminal numbers.
Broken lines show wiring at site.
2. When the phases are not connected correctly, the reverse phase protector operates and the unit will not start.
In this case, check the three phase wiring.

* Compressor has internal thermal protection.

Do not operate the units with the magnetic contactor pushed in.

Symbol	Name	Symbol	Name	Symbol	Name
20SF	Solenoid Coil	CM	Compressor	63H	High Pressure Switch
RY05, 07	Relay	52C	Magnetic Contactor	CH	Crankcase Heater
47C	Reverse Phase Protector	FM01, 02	Fan Motor (Outdoor)	F	Fuse (on PCB)
F2	Fuse (T5A)	TL	Sensor	TR	Transformer
RC01, 02	Running Capacitor	TE	Sensor	TD	Sensor

5. SPECIFICATIONS OF ELECTRICAL PARTS

5.1 RAV-363AH8-PE

No.	PARTS NAME	TYPE	SPECIFICATIONS			
1	Compressor	ZR49K3-TFD	Output (Rated) 3.0kW, 2 pole, 3 phase, 380/415V, 50Hz			
			Winding resistance 3.73 Ω at 20°C			
2	Outdoor unit fan motor	SMF-230-63N-2	Output (Rated) 63W, 6 pole, 1 phase, 230V, 50Hz			
		SMF-230-39N-2	Output (Rated) 39W, 6 pole, 1 phase, 230V, 50Hz			
3	Running capacitor for outdoor fan motor	EEP2G405HQA114	AC 400V, 4 μ F			
4	Magnetic contactor	FMca-1S	AC 230V, 50Hz			
5	High pressure switch	ACB-2TBO4W	Tripping pressure 30kg/cm ² G Resetting pressure 23kg/cm ² G			
6	Solenoid coil	CHV-AC240V	AC 220~240V			
7	Crankcase heater		AC 240V, 28W			
8	Outdoor unit sensor for heat-exchanger temperature		Maximum input 15.5mA	°C	-12	10
				ký	67.5	21.3
9	Transformer for outdoor unit	FT-67	AC 187~264V			
10	Fuse		5A			
11	Sensor for cooling operation in low ambient temperature		Maximum input 15.5mA	°C	-12	10
				ký	67.5	21.3
12	Reverse Phase Protector	STR-4AB				
13	Sensor for delivery pipe temperature			°C	23	100
				ký	57.0	3.4

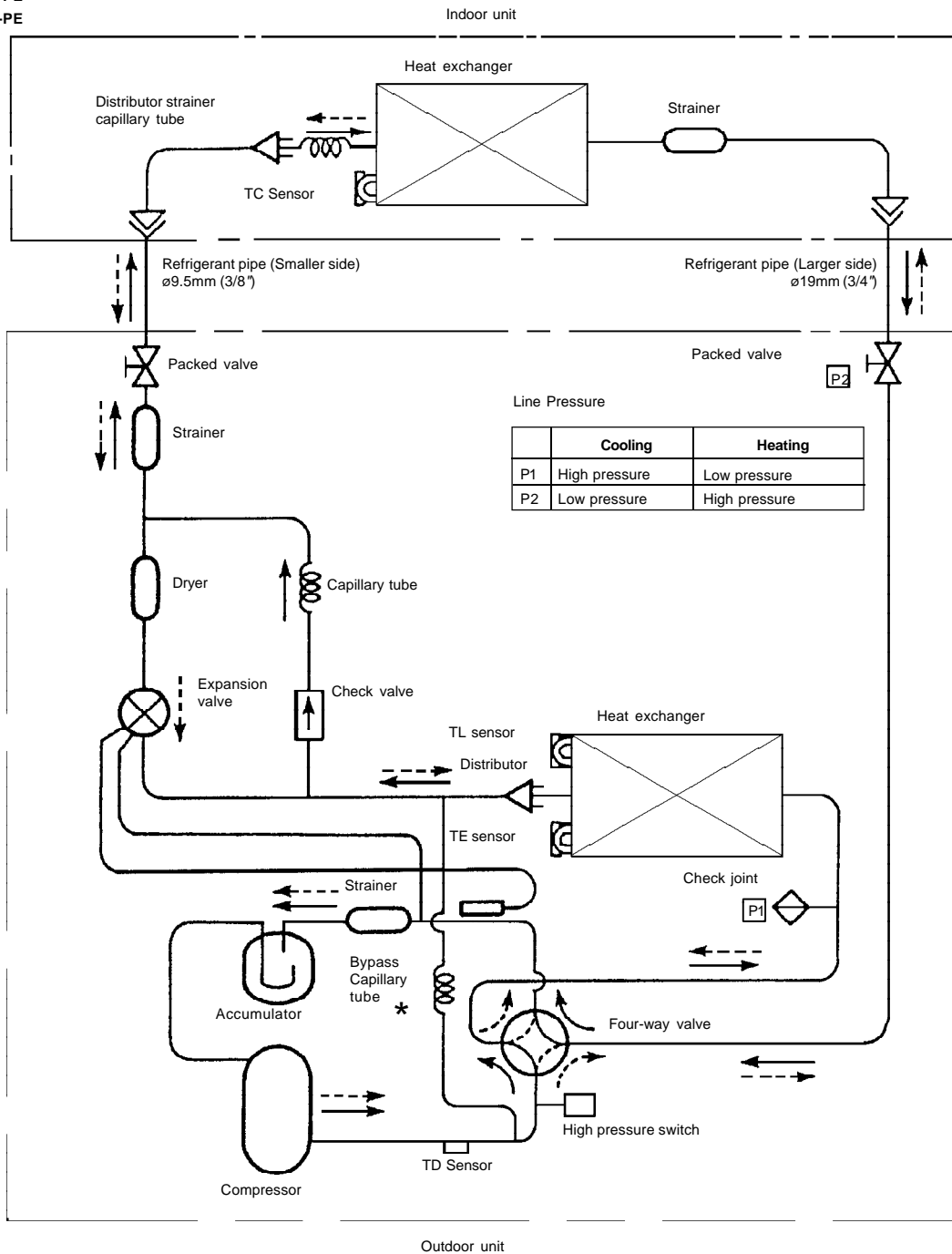
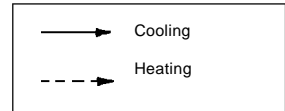
5.2 RAV-463AH8-PE

No.	PARTS NAME	TYPE	SPECIFICATIONS			
1	Compressor	ZR61K3-TFD	Output (Rated) 3.75kW, 2 pole, 3 phase, 380/415V, 50Hz			
			Winding resistance 2.91 Ω at 20°C			
2	Outdoor unit fan motor	SMF-230-63N-2	Output (Rated) 63W, 6 pole, 1 phase, 230V, 50Hz			
		SMF-230-39N-2	Output (Rated) 39W, 6 pole, 1 phase, 230V, 50Hz			
3	Running capacitor for outdoor fan motor	EEP2G405HQA114	AC 400V, 4 μ F			
4	Magnetic contactor	FMca-1S	AC 230V, 50Hz			
5	High pressure switch	ACB-2TBO4W	Tripping pressure 30kg/cm ² G Resetting pressure 23kg/cm ² G			
6	Solenoid coil	CHV-AC240V	AC 220~240V			
7	Crankcase heater		AC 240V, 28W			
8	Outdoor unit sensor for heat-exchanger temperature		Maximum input 15.5mA	°C	-12	10
				ký	67.5	21.3
9	Transformer for outdoor unit	FT-67	AC 187~264V			
10	Fuse		5A			
11	Sensor for cooling operation in low ambient temperature		Maximum input 15.5mA	°C	-12	10
				ký	67.5	21.3
12	Reverse Phase Protector	STR-4AB				
13	Sensor for delivery pipe temperature			°C	23	100
				ký	57.0	3.4

6. REFRIGERANT PIPING DIAGRAM

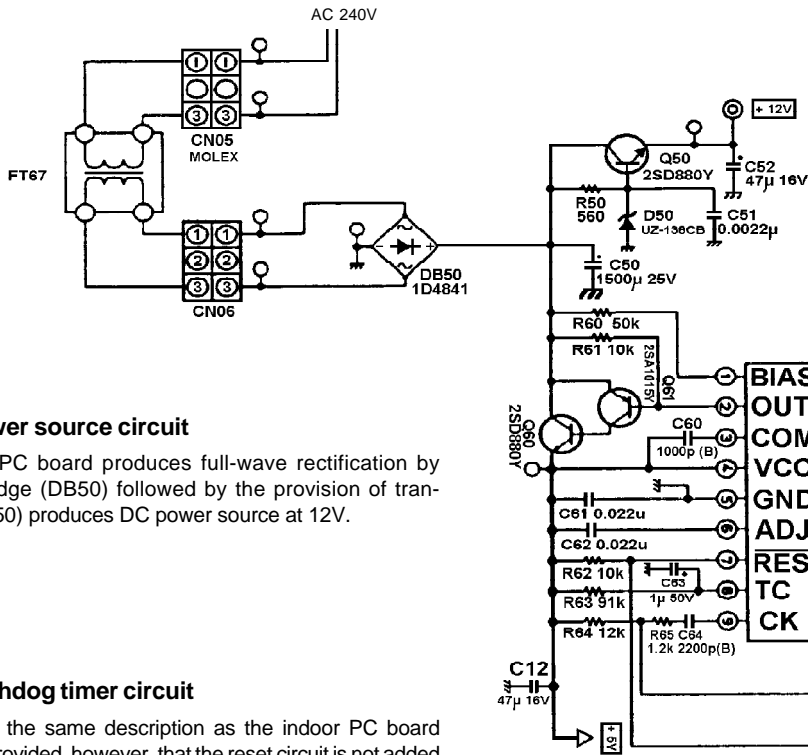
Indoor unit
 RAV-362BH-PE
 RAV-362CH-PE
 RAV-362UH-PE
 RAV-462BH-PE
 RAV-462CH-PE
 RAV-462UH-PE

Outdoor unit
 RAV-363AH8-PE RAV-463AH8-PE



* RAV-363AH8-PE only

INDOOR UNIT		OUTDOOR UNIT		
MODEL	CAPILLARY	MODEL	MAIN CAPILLARY	BYPASS CAPILLARY
RAV-362BH-PE	IDø 2X400Lx6P	RAV-363AH8-PE	IDø 2.4x650Lx1P	IDø 1.7x1000Lx1P
RAV-362CH-PE	IDø 2X300Lx7P			
RAV-362UH-PE	IDø 2X300Lx8P			
RAV-462BH-PE	IDø 2.2X200Lx6P	RAV-463AH8-PE	IDø 3x600Lx1P	—
RAV-462CH-PE	IDø 2X200Lx8P			
RAV-462UH-PE	IDø 2X300Lx8P			



7.2 12V power source circuit

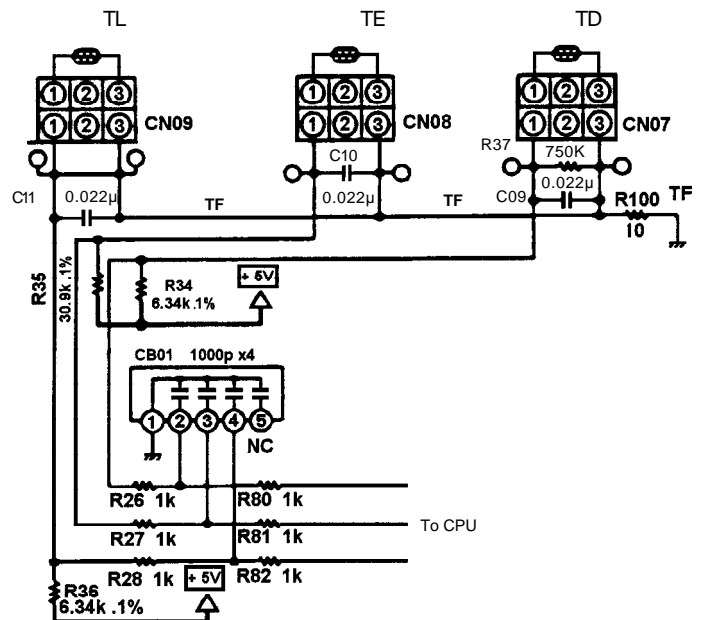
Outdoor PC board produces full-wave rectification by diode bridge (DB50) followed by the provision of transistor (Q50) produces DC power source at 12V.

7.3 5V watchdog timer circuit

Basically, the same description as the indoor PC board applies, provided, however, that the reset circuit is not added to the outdoor side.

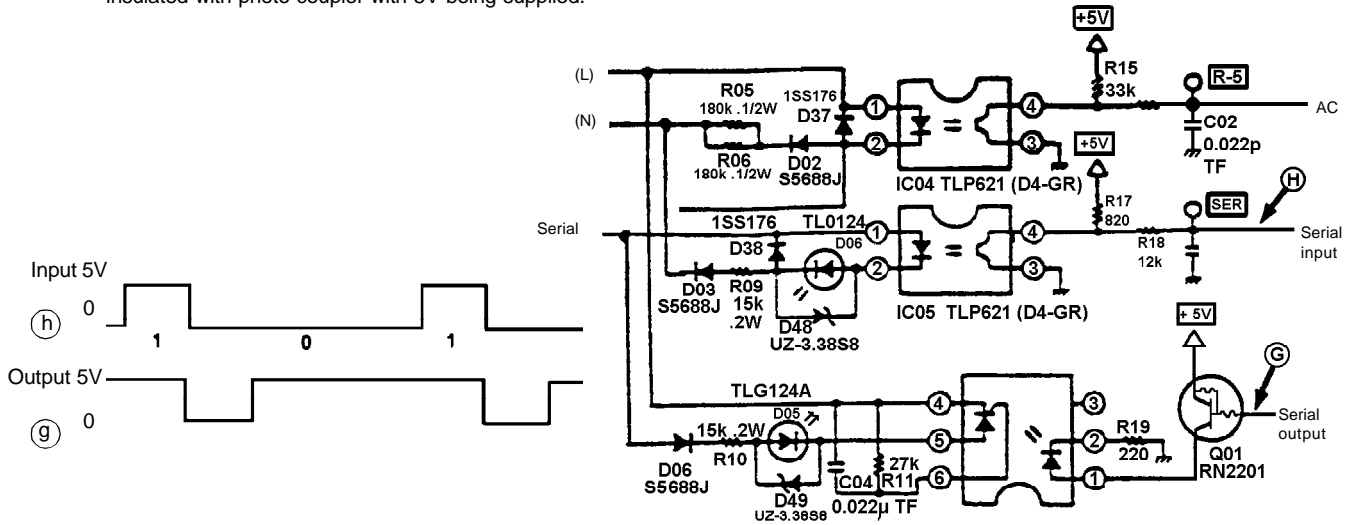
7.4 Sensor circuit

This circuit detects the temperature by dividing voltage with resistance and sensor and bringing the voltage value into CPU, using the characteristics of the sensor that resistance varies with different temperatures. TE is for defrosting, while TL is for low ambient cooling operation. TD is to protect the compressor from overheating.



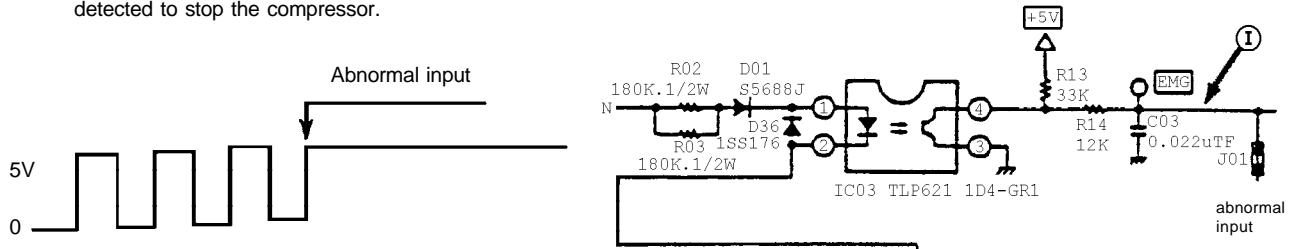
7.5 Serial signal circuit (between indoor and outdoor units)

Transmits and receives the signals between indoor and outdoor units in serial signals. As 230V is used for transmitting the signal, the microcomputer section is insulated with photo-coupler with 5V being supplied.



7.6 Abnormality-detecting circuit

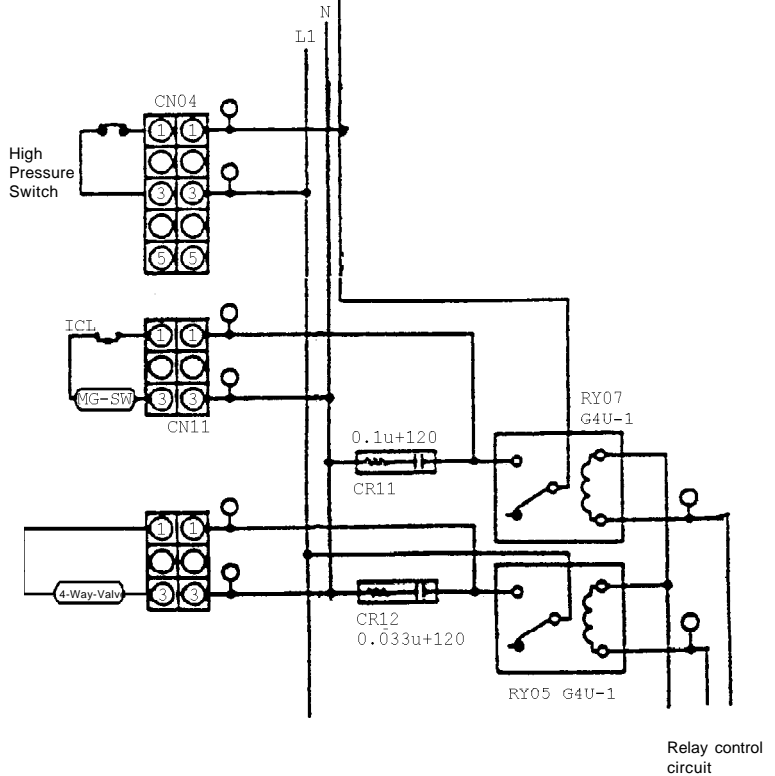
When high pressure switch is operated, abnormality is detected to stop the compressor.



7.7 Relay circuit

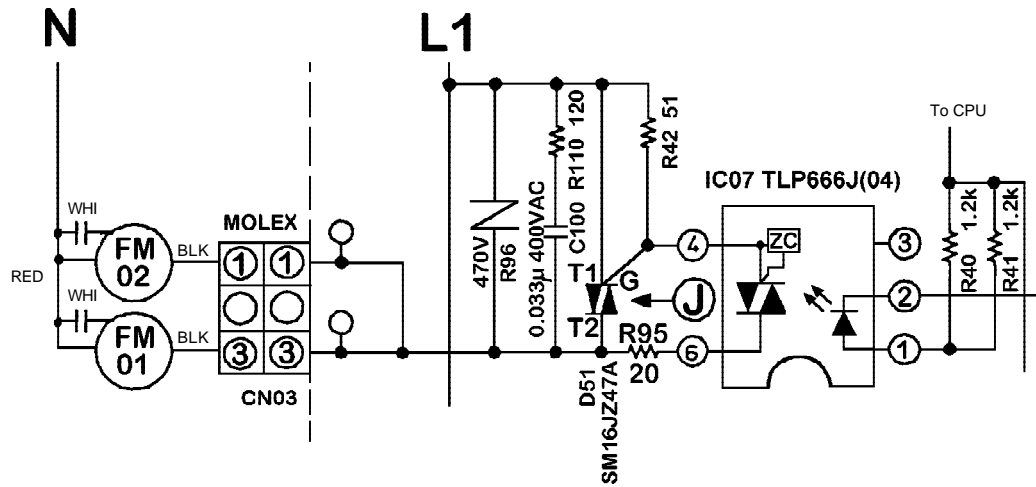
The relay circuit consists of the diagram on the right-hand side.

- RY05 : 4-way valve ON/OFF
- RY07 : Magnetic switch ON/OFF

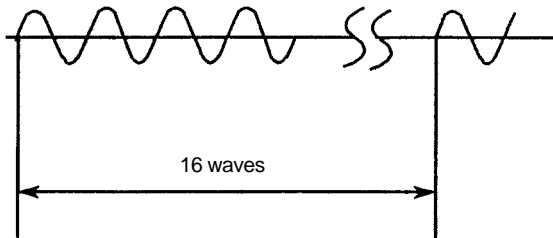


7.8 Fan speed control circuit

The fan speeds are controlled by triac IC07. This allows the fan to operate at any one of 16 speeds. This function only occurs when the unit is in the cooling mode, zero waves equates to fan stop.

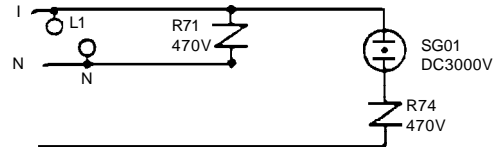


Waveform obtained between J and N.
Example shown is for 4 waves.




7.9 Lightning surge protection circuit

The circuit on the right, protects the PCB from damage caused by a lightning surge. Varistors are connected between the live and neutral and live and earth lines to protect against voltage surges.



8. EMERGENCY OPERATION

If the air conditioner develops a fault which stops it from operating normally, it is possible to operate the air conditioner using change-over connectors incorporated into the units. In this case, operation of the air conditioner is controlled by switching on and off the power supply. Details of how to change-over the units to operate in the emergency mode are shown below:

- ① Switch off the power supply to the outdoor unit.
- ② Remove the electrical parts cover from the indoor unit. Pull out the connector of R phase (red) lead wire from terminal 1  and connect it with the connector of lead wire for fan motor K1 output (red).

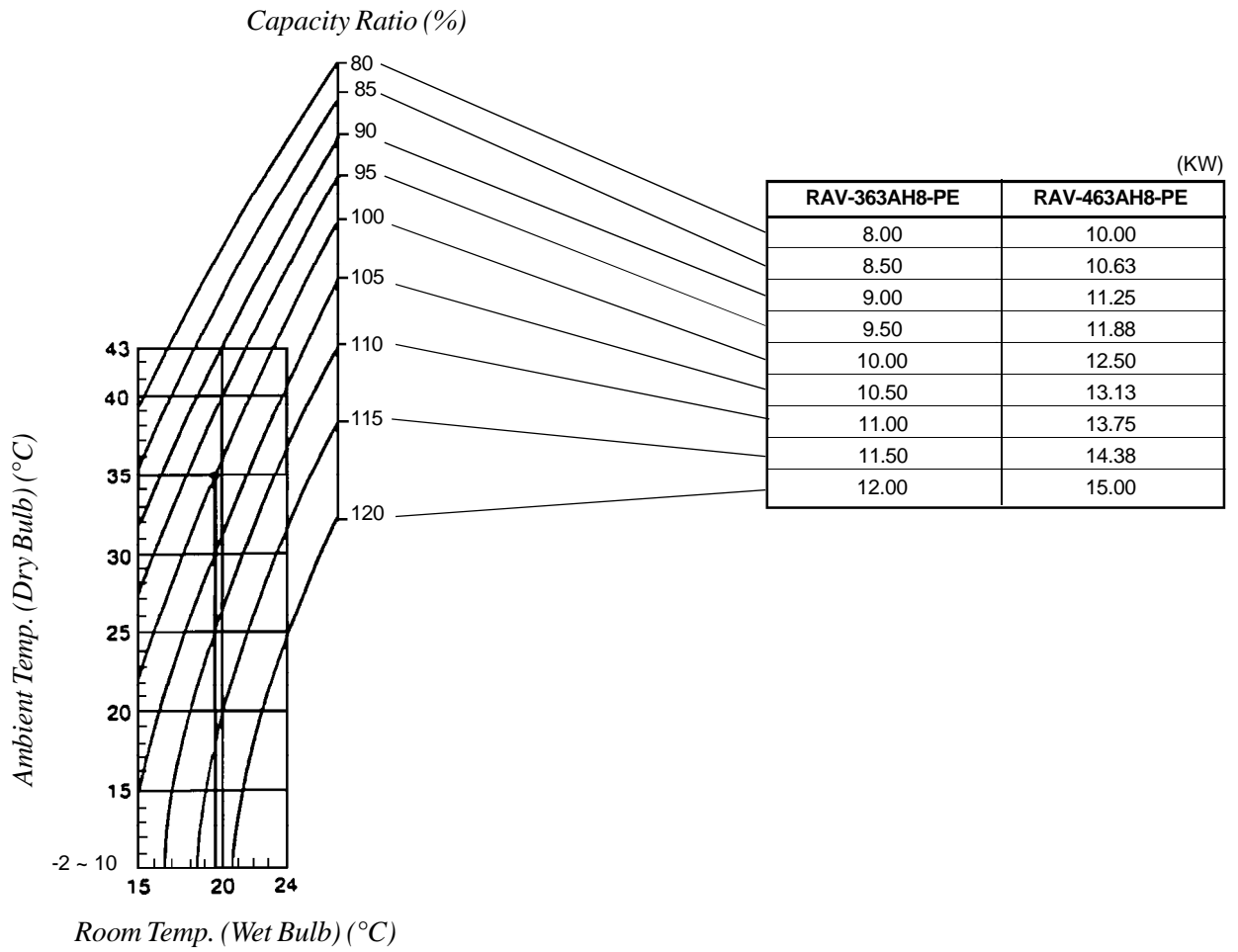
Note: If the indoor unit is a cassette model, the float switch connector must be removed from the PCB.
Replace the electrical parts cover on the indoor unit. On the outdoor unit PCB short the test pins as follows:

For Cooling Mode	Short CN22 with CN23
For Heating Mode	Short CN22 with CN23 and CN20 with CN21

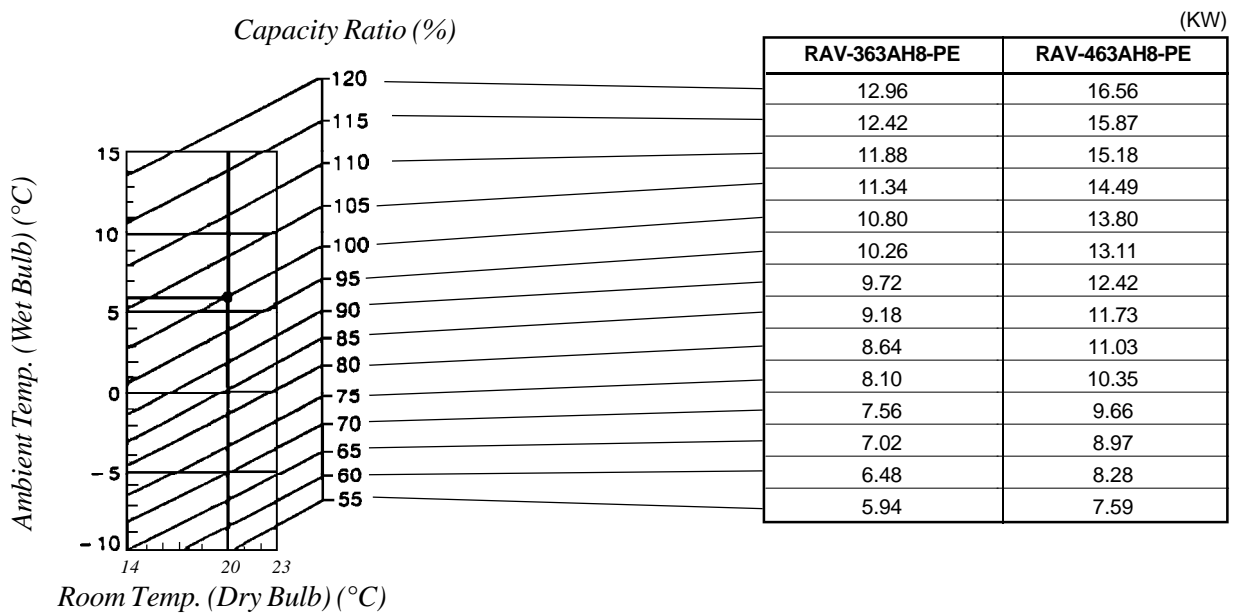
- ③ Switch on the power supply to the outdoor unit.

9. PERFORMANCE CHARACTERISTICS

9.1 Cooling capacity

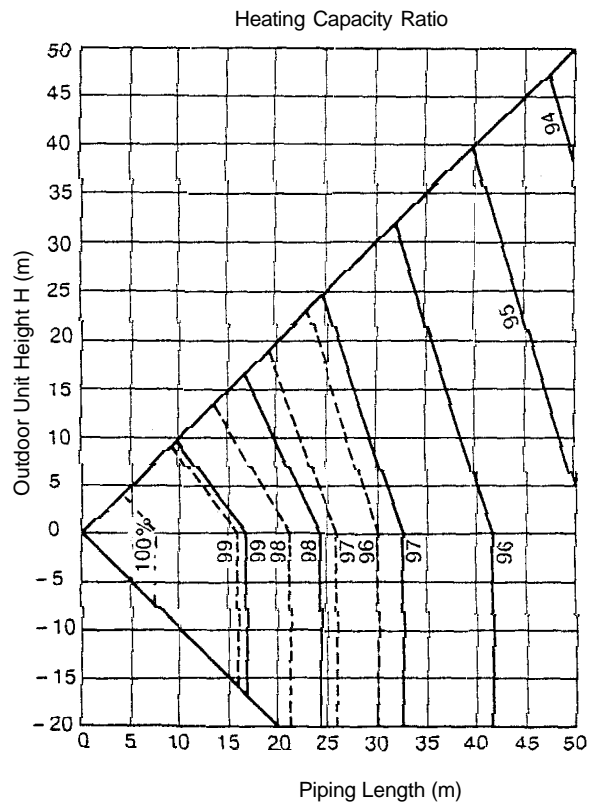
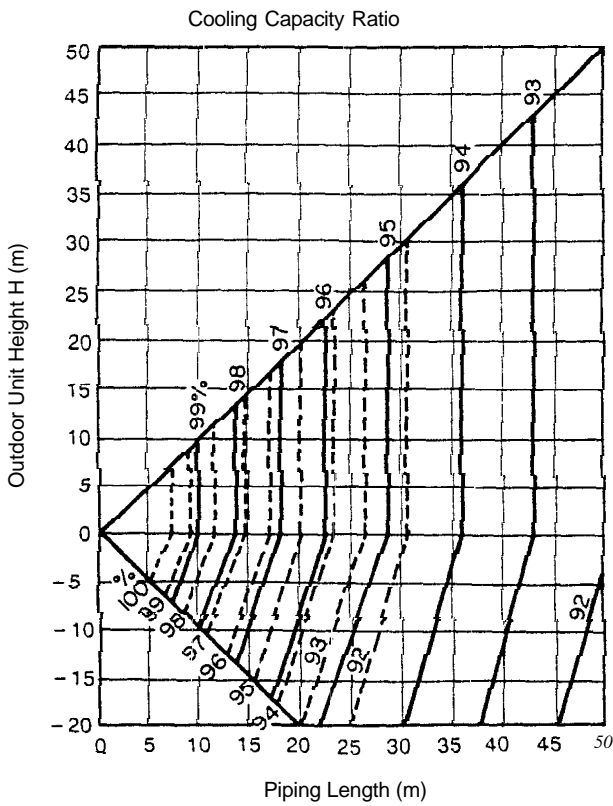


9.2 Heating capacity



9.3 Piping length / cooling capacity / heating capacity

RAV-363AH8-PE
RAV-463AH8-PE



The broken line shows in case the piping length is 30m or less.

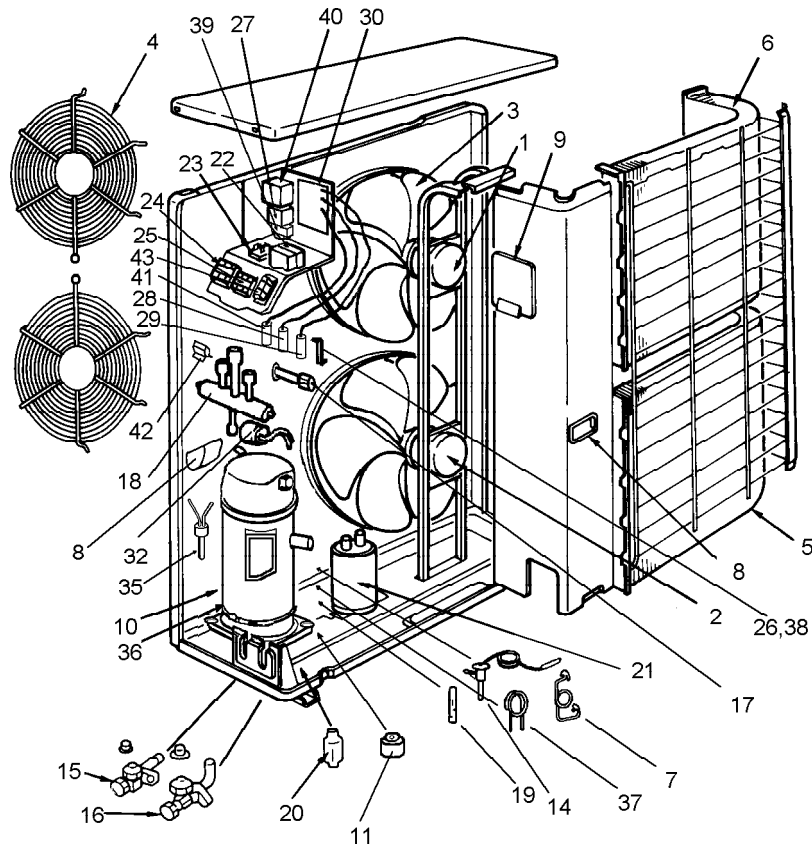
9.4 Piping length / additional refrigerant volume

Model (RAV-)	Piping length less than (m)	20	Additional amount of refrigerant at installation site (kg)					Recharge amount of interchange time (kg)										
			25	30	35	40	45	50	5	10	15	20	25	30	35	40	45	50
363AH8-PE	Filled at factory		0.25	0.5	0.75	1.0	1.25	1.5	3.0	3.15	3.25	3.4	3.65	3.9	4.15	4.4	4.65	4.9
463AH8-PE			0.25	0.5	0.75	1.0	1.25	1.5	3.6	3.7	3.8	3.9	4.15	4.4	4.65	4.9	5.15	5.4

- The amount of refrigerant put into the outdoor unit at the factory is equivalent to that which fills up 20m length of refrigerant pipe.
- If the length of refrigerant pipe is 20m or less, addition of refrigerant at the installation site is unnecessary. If the length of the pipe exceeds 20m, add the refrigerant R-22.
- Overcharge or undercharge of refrigerant in the outdoor unit will cause malfunction of the compressor. The prescribed amount of the replenishment of the refrigerant is shown in the table above. The permissible amount of refrigerant is the prescribed amount $\pm 50g$.
- For RAV-363AH8-PE and RAV-463AH8-PE, if the length of pipe exceeds 30m the size of pipe at the gas side must be raised one rank (e.g. OD 19.0 22.2).

10. EXPLODED VIEWS AND PARTS LIST

RAV-363AH8-PE
RAV-463AH8-PE



Location No.	Part No.	Description
1	43A21002	Motor, AC 230V, 50Hz, Fan
2	43A21003	Motor, AC 230V, 50Hz, Fan
3	43120156	Fan, Propeller
4	43A19001	Guard, Fan
5	43143638	Condenser, Lower (RAV-363AH8-PE)
5	43A43004	Condenser, Lower (RAV-463AH8-PE)
6	43143639	Condenser, Upper (RAV-363AH8-PE)
6	43A43003	Condenser, Upper (RAV-463AH8-PE)
7	43047492	Capillary Tube (RAV-363AH8-PE)
8	43119368	Hanger
9	43162027	Cover, Electric Parts
10	43A41500	Compressor, ZR49K3-TFD (RAV-363AH8-PE)
10	43A41501	Compressor, ZR61K3-TFD (RAV-463AH8-PE)
11	43A42001	Compressor Boot
14	43146362	Expansion Valve (RAV-363AH8-PE)
14	43146438	Expansion Valve (RAV-463AH8-PE)
15	43146451	Packed Valve (3/8")
16	4314616	Packed Valve (3/4")
17	43147321	Check Joint
18	43146498	Valve, 4-Way (RAV-363AH8-PE)
18	43146499	Valve, 4-Way (RAV-463AH8-PE)
19	43146283	Check Valve

Location No.	Part No.	Description
20	43145092	Dryer
21	43148096	Accumulator (RAV-363AH8-PE)
21	43148114	Accumulator (RAV-463AH8-PE)
22	43155080	Capacitor, Plastic Film
23	43060479	Terminal, 4P
24	43A60005	Terminal, 4P
25	43A60001	Terminal, 4P
26	43107215	Holder, Sensor (TL)
27	43152334	Magnetic Contactor
28	43150196	Sensor, Heat Exch. (TE)
29	43A50001	Sensor, Cond. (TL)
30	43A69006	PC Board
32	43A46004	Solenoid Coil
35	43A49001	Switch, High-Pressure
36	43157167	Heater, Crankcase
37	43146430	Capillary Tube (RAV-363AH8-PE)
37	43146431	Capillary Tube (RAV-463AH8-PE)
38	43107215	Holder, Sensor (TE)
39	43A58003	Transformer, Power
40	43154148	Reverse Phase Protector STR-4AB
41	43150261	Sensor, Delivery Pipe (TD)
42	43063219	Holder, Sensor (TD)
43	43A60006	Fuse F2 (T5A)

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