

NOTE: • This service Manual covers only change points.
Please refer to the Service Manual OB227 REVISED EDITION-B for unchanged contents.
• Please refer to the following service manual when the outdoor unit is the under mentioned model.
MXZ-32SV-E1: OB254
MXZ-18TV-E1: OB280
MUX-19/20/25TV-E1: OB284
• Please void OB252 REVISED EDITION-B.

No. OB252
REVISED EDITION-C

SERVICE MANUAL

Wireless type Models

MSC-07RV - E2 (WH)
MSC-09RV - E2 (WH)
MSC-12RV - E2 (WH)
MSC-07RV - E3 (WH)
MSC-09RV - E3 (WH)
MSC-12RV - E3 (WH)
MSC-07RV - E4 (WH)
MSC-09RV - E4 (WH)
MSC-12RV - E4 (WH)
MSC-07RV - E2 (WH)
MSC-09RV - E2 (WH)
MSC-12RV - E2 (WH)
MSC-07RV - E3 (WH)
MSC-09RV - E3 (WH)
MSC-12RV - E3 (WH)
MSC-07RV - E4 (WH)
MSC-09RV - E4 (WH)
MSC-12RV - E4 (WH)

Multi system type

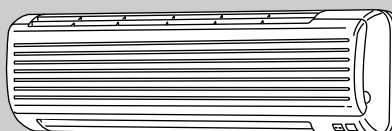
MSC-07RV - E2 (WH)
MSC-09RV - E2 (WH)
MSC-12RV - E2 (WH)

Inverter controlled multi system type

MU-07RV - E2
MU-09RV - E2
MU-12RV - E2
MU-07RV - E3
MU-09RV - E3
MU-12RV - E3
MU-07RV - E4
MU-09RV - E4
MU-12RV - E4
MUH-07RV - E2
MUH-09RV - E2
MUH-12RV - E2
MUH-07RV - E3
MUH-09RV - E3
MUH-12RV - E3
MUH-07RV - E4
MUH-09RV - E4
MUH-12RV - E4

MUX-10RV - E2
MUX-18RV - E2
MUX-24RV - E2

MXZ-18RV - E2



MSC-07RV - E4
MSC-09RV - E4
MSC-12RV - E4



CONTENTS

1. TECHNICAL CHANGES	3
2. PART NAMES AND FUNCTIONS.....	8
3. SPECIFICATION	11
4. WIRING DIAGRAM	13
5. REFRIGERANT SYSTEM DIAGRAM	15
6. MICROPROCESSOR CONTROL	16
7. TROUBLESHOOTING.....	16
8. PARTS LIST	27

REVISION

Parts numbers have been partially modified.

Model	Page	Part name	Part number
MSC-07/09/12RV- E1 MSC-07/09/12RV- E2	P27	REMOTE CONTROLLER HOLDER	E02 504 426 ➔ E02 141 083
MSC-07/09/12RV- E2	P27	REMOTE CONTROLLER	E02 141 083 ➔ E02 504 426

No.	Change point	Circle shows the change point of the model.											
		MSC-07RV-				MSC-09RV-				MSC-12RV-			
		E1	E2	E3	E4	E1	E2	E3	E4	E1	E2	E3	E4
1	The specifications of Indoor and Outdoor fan motor. The data of Med. and Low speed are added to Indoor fan motor specification* *The data value of indoor fan motor does not change if the indoor unit is connected to a multi-type outdoor unit.				○				○				○
2	Remote controllers of COOL ONLY or COOL & HEAT type are outdoor unit accessory.	○				○				○			
3	Remote controller is included as an indoor unit accessory.		○	○	○		○	○	○		○	○	○
4	Two-way common remote controller		○				○				○		
5	Two-way (using dip switch) remote controller			○	○			○	○			○	○
6	The specification of electronic control P.C. board is compatible with remote controllers of COOL ONLY and COOL & HEAT type.	○				○				○			
7	Indoor electronic control P.C. board has changed for two-way remote controller.		○				○				○	○	
8	Indoor electronic control P.C. board has changed for two-way remote controller. Microprocessor programing flow has changed. Electronic control P.C. board for E3 is interchangeable with the one for E2 (except for MSC-12RV).			○				○					
9	(New P.C. board) Indoor electronic control P.C. board has changed. Earth wire from the board is fixed to the electrical box with screw. The shape of connector CN211 has changed. Indoor electronic control P.C. board has been connected with Power monitor, receiver P.C. board using connector.				○				○				○
10	When fan speed is set to "Auto", initial temperature difference specifying changing fan speed has been improved in order to reach the set temperature faster than E1, E2, and E3.				○				○				○
11	The mark of terminal block has changed. Terminal block for E4 is interchangeable with the ones for E1, E2 and E3.				○				○				○
12	Winding resistance and shape of fan motor have changed. Fan motor for E4 is not interchangeable with the ones for E1, E2 and E3 except for MSC-12RV.				○				○				
13	Fan motor rubber mount has changed because the shape of fan motor was changed.				○				○				

No.	Change point	Circle shows that change points apply to the models.											
		MU-07RV-				MU-09RV-				MU-12RV-			
		E1	E2	E3	E4	E1	E2	E3	E4	E1	E2	E3	E4
1	Remote controller of COOL ONLY type is outdoor unit accessory.	○				○				○			
2	Remote controller is included as an indoor unit accessory.		○	○	○		○	○	○		○	○	○
3	Compressor contactor (52C) has changed. Compressor contactor for E2,E3,E4 are interchangeable with the ones for E1.		○	○	○		○	○	○		○	○	○
4	Compressor has changed. Compressors for E3 and E4 are not interchangeable with the ones for E1 and E2.			○	○			○	○			○	○
5	Compressor capacitor has changed. Due to different shape, compressor capacitor for E4 is not interchangeable with the ones for E1, E2 and E3.				○				○				○
6	Fuse has been removed.				○				○				○
7	Wiring diagram has changed because fuse was removed.				○				○				○
8	The shape of propeller fan has changed. The number of propeller fan has changed from four to three. Propeller fan for E4 is not interchangeable with the ones for E1, E2 and E3.				○				○				○
9	The shape, diameter of axis and fan speed of fan motor have changed. Fan motor for E4 is not interchangeable with the ones for E1, E2 and E3.				○				○				○
10	Fan motor capacitor has changed. 1.5μF→2.0μF Fan motor capacitor for E4 is not interchangeable with the ones for E1, E2 and E3(MU-12RV only).												○
11	Refrigerant filling capacity has changed. 0.85kg→0.80kg							○	○				
12	The method of troubleshooting for outdoor unit has changed.	○	○	○	○	○	○	○	○	○	○	○	○
13	The repairing procedure when outdoor unit does not stop has been added to troubleshooting.	○	○	○	○	○	○	○	○	○	○	○	○

No.	Change point	Circle shows that change points apply to the models.											
		MUH-07RV-				MUH-09RV-				MUH-12RV-			
		E1	E2	E3	E4	E1	E2	E3	E4	E1	E2	E3	E4
1	Remote controller of COOL & HEAT type is outdoor unit accessory.	○				○				○			
2	Remote controller is included as an indoor unit accessory.		○	○	○		○	○	○		○	○	○
3	Accumulator has been removed.			○	○			○	○			○	○
4	Compressor has changed.			○	○			○	○			○	○
5	Compressor capacitor has changed. Due to different shape, compressor capacitor for E4 is not interchangeable with the ones for E1, E2 and E3.				○				○				○
6	The mark of terminal block has changed. Terminal block for E4 is interchangeable with the ones for E1, E2 and E3.				○				○				○
7	Deicer P.C. board has changed. Jumper wire of compulsory defrosting mode has changed. (JP607-R853→JPDS-JPSG) Jumper wire for defrost setting has changed. (JPC-JPE→JRF-JRG) (Refer to page 26.) The defrosting intervals which are changed by setting a short circuit are the same as E1, E2, and E3. Deicer P.C. board for E4 is not interchangeable with the ones for E1, E2 and E3.				○				○				○
8	Wiring diagram has changed according to the following reasons; the shape of connectors CN711 and CN661 has changed and R.V. coil relay (X62) has changed into SSR (SR62).				○				○				○
9	X62 has changed into SR62 in Example of Operation time chart in HEAT operation. Compared to E1, E2, and E3, no change has been made about the operational condition for defrosting and the control system of R.V. coil (timing of switching on/off).				○				○				○
10	The shape of propeller fan has changed. The number of propeller fan has changed from four to three. Propeller fan for E4 is not interchangeable with the ones for E1, E2, and E3.				○				○				○
11	The shape and diameter of axis of fan motor have changed. The shape of connector has changed. Fan motor and connector for E4 are not interchangeable with those for E1, E2 and E3.				○				○				○
12	Refrigerant filling capacity has changed. 0.80kg→0.85kg			○	○			○	○				
13	The method of checking serial signal error for E4 has been added.	○	○	○	○	○	○	○	○	○	○	○	○
14	The method of troubleshooting for outdoor unit has changed.	○	○	○	○	○	○	○	○	○	○	○	○
15	The method for checking thermistor has been added to troubleshooting.	○	○	○	○	○	○	○	○	○	○	○	○
16	The method for checking 4-way valve has been added to troubleshooting.	○	○	○	○	○	○	○	○	○	○	○	○
17	The repairing procedure when outdoor unit does not stop has been added to troubleshooting.	○	○	○	○	○	○	○	○	○	○	○	○

MUX-10RV -E1 → **MUX-10RV -E2**

MUX-18RV -E1 → **MUX-18RV -E2**

MUX-24RV -E1 → **MUX-24RV -E2**

MXZ-18RV -E1 → **MXZ-18RV -E2**

1. Remote controller is unprovided as the outdoor unit accessory.

Reference

Model	REMOTE CONTROLLER			
	COOL ONLY	COOL & HEAT	TWO-WAY	TWO-WAY DIP switch
MS-07/09/12RV-[E1]	○	×	×	×
MSH-07/09/12RV-[E1]	×	○	○	○
MS-07/09/12RV-[E2]	○	○※	○	○
MSH-07/09/12RV-[E2]	×	○	○	○
MS-07/09/12RV-[E3]	○	○	○	○
MSH-07/09/12RV-[E3]	×	○	○	○
MS-07/09/12RV-[E4]	○	○	○	○
MSH-07/09/12RV-[E4]	×	○	○	○

※ When HEAT mode is selected by the remote controller of COOL & HEAT type, the unit will operate in FAN mode.

MSC-07RV -[E1] → **MSC-07RV -[E2]**
MSC-09RV -[E1] → **MSC-09RV -[E2]**
MSC-12RV -[E1] → **MSC-12RV -[E2]**
MU-07RV -[E1] → **MU-07RV -[E2]**
MU-09RV -[E1] → **MU-09RV -[E2]**
MU-12RV -[E1] → **MU-12RV -[E2]**
MUH-07RV -[E1] → **MUH-07RV -[E2]**
MUH-09RV -[E1] → **MUH-09RV -[E2]**
MUH-12RV -[E1] → **MUH-12RV -[E2]**

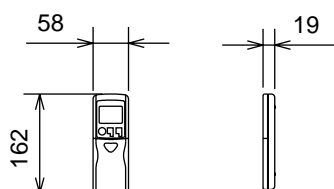
COOL ONLY REMOTE CONTROLLER → TWO-WAY REMOTE CONTROLLER
COOL&HEAT REMOTE CONTROLLER → TWO-WAY REMOTE CONTROLLER

- Both of COOL ONLY and COOL & HEAT remote controller are unified into a two-way remote controller.
- FAN mode operation is available in COOL ONLY unit. In this case the set room temperature will be displayed on the remote controller, however, the room temperature can not be controlled by remote controller button. HEAT operation is available in only HEAT & COOL type unit.

MSC-07RV -[E2] → **MSC-07RV -[E3]**
MSC-09RV -[E2] → **MSC-09RV -[E3]**
MSC-12RV -[E2] → **MSC-12RV -[E3]**

TWO-WAY REMOTE CONTROLLER → TWO-WAY DIP SWITCH REMOTE CONTROLLER

- Outlines and dimensions have been changed.



Wireless remote controller

- The way of remodelling individual operation of P.C Board of remote controller has changed.

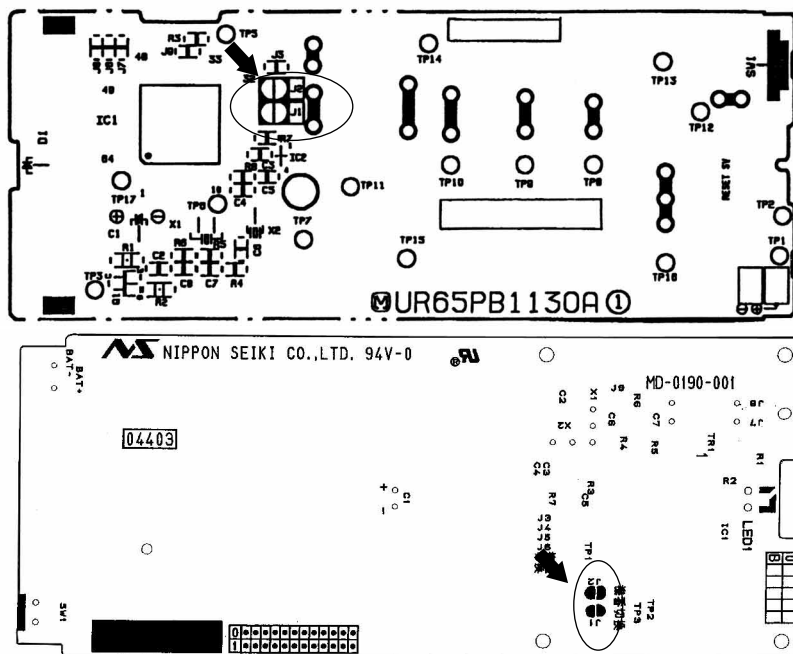
A maximum of 4 indoor units with wireless remote controllers can be used in a room.

In this case, to operate each indoor unit individually by each remote controller, P.C. boards of remote controller must be modified according to the number of the indoor unit.

How to modify the remote controller P.C. board

Remove batteries before modification.

The board has a print as shown below :



NOTE : For remodelling, take out the batteries and press the OPERATE/STOP(ON/OFF) button twice or 3 times at first. After finish remodelling, put back the batteries then press the RESET button.

The P.C. board has the print “J1” and “J2”. Solder “J1” and “J2” according to the number of indoor unit as shown in Table 1. After modification, press the RESET button.

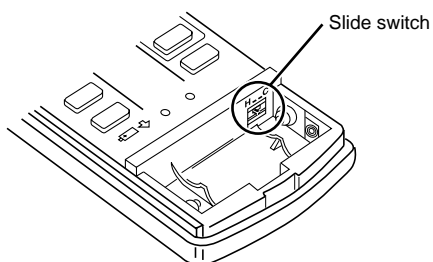
Table 1

	1 unit operation	2 units operation	3 units operation	4 units operation
No. 1 unit	No modification	Same as at left	Same as at left	Same as at left
No. 2 unit	—	Solder J1	Same as at left	Same as at left
No. 3 unit	—	—	Solder J2	Same as at left
No. 4 unit	—	—	—	Solder both J1 and J2

REMOTE CONTROLLER (How to set the type)

This remote controller setting needs to be switched according to the type of air conditioner (COOL & HEAT or COOL ONLY).

If the setting is incorrect, the air conditioner does not operate normally. Therefore, check if the setting corresponds to the type of air conditioner. If it does not, correct the setting as shown below.



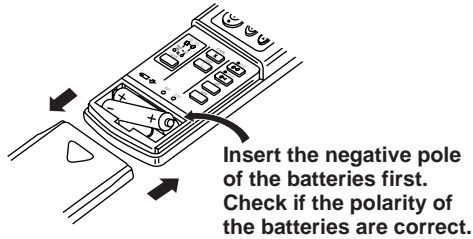
Type	COOL & HEAT	COOL ONLY
The position of the slide switch		

• How to replace batteries

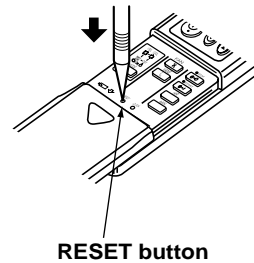
Weak batteries may cause the remote controller malfunction.

In this case, replace the batteries to operate the remote controller normally.

- ① Remove the front lid and insert batteries.
Then re-attach the front lid.



- ② Press the RESET button.



NOTE : If the RESET button is not pressed, the remote controller may not operate correctly.

2 PART NAMES AND FUNCTIONS

ACCESSORIES

MSC-07RV -[E1] • MU-07RV -[E1]
 MSC-09RV -[E1] • MU-09RV -[E1]
 MSC-12RV -[E1] • MU-12RV -[E1]
 MSC-07RV -[E1] • MUH-07RV -[E1]
 MSC-09RV -[E1] • MUH-09RV -[E1]
 MSC-12RV -[E1] • MUH-12RV -[E1]

<Indoor unit>

①	Installation plate	1
②	Installation plate fixing screw 4 × 25 mm	5
③	Remote controller mounting hardware	1
④	Fixing screw for ③ 3.5 × 16 mm	2
⑤	Battery (AAA) for remote controller	2
⑥	Felt tape (Used for left or left-rear piping)	1
⑦	Deodorizing filter	1
⑧	Air cleaning filter	1

<Outdoor unit>

⑨	Wireless remote controller	1
⑩	Drain socket: MUH type	1
⑪	Drain cap: MUH type	2

MSC-07RV -[E2] • MU-07RV -[E2]
 MSC-09RV -[E2] • MU-09RV -[E2]
 MSC-12RV -[E2] • MU-12RV -[E2]
 MSC-07RV -[E2] • MUH-07RV -[E2]
 MSC-09RV -[E2] • MUH-09RV -[E2]
 MSC-12RV -[E2] • MUH-12RV -[E2]
 MSC-07RV -[E3] • MU-07RV -[E3]
 MSC-09RV -[E3] • MU-09RV -[E3]
 MSC-12RV -[E3] • MU-12RV -[E3]
 MSC-07RV -[E3] • MUH-07RV -[E3]
 MSC-09RV -[E3] • MUH-09RV -[E3]
 MSC-12RV -[E3] • MUH-12RV -[E3]
 MSC-07RV -[E4] • MU-07RV -[E4]
 MSC-09RV -[E4] • MU-09RV -[E4]
 MSC-12RV -[E4] • MU-12RV -[E4]
 MSC-07RV -[E4] • MUH-07RV -[E4]
 MSC-09RV -[E4] • MUH-09RV -[E4]
 MSC-12RV -[E4] • MUH-12RV -[E4]

<Indoor unit>

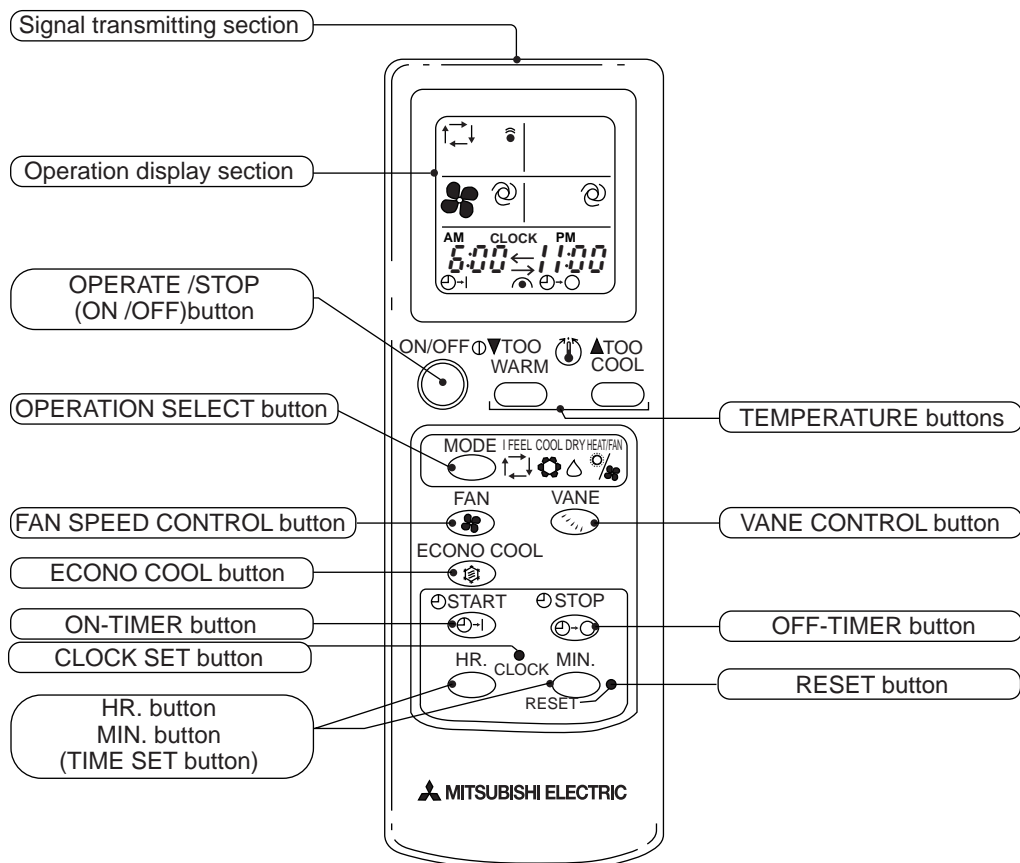
①	Installation plate	1
②	Installation plate fixing screw 4 × 25 mm	5
③	Remote controller mounting hardware	1
④	Fixing screw for ③ 3.5 × 16 mm	2
⑤	Battery (AAA) for remote controller	2
⑥	Wireless remote controller	1
⑦	Felt tape (Used for left or left-rear piping)	1
⑧	Deodorizing filter	1
⑨	Air cleaning filter	1

<Outdoor unit: MUH type>

⑩	Drain socket	1
⑪	Drain cap	2

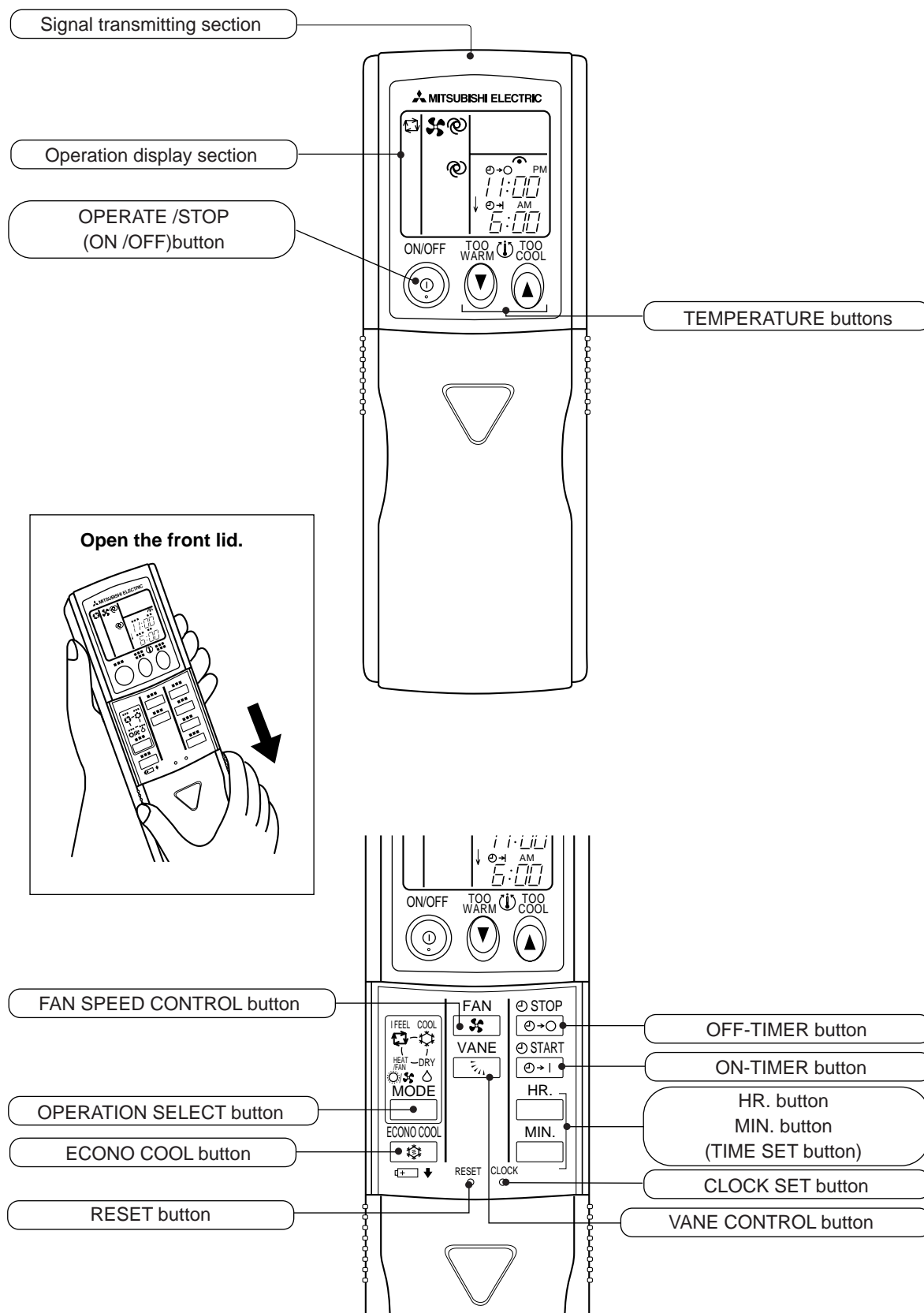
MSC-07RV -E2 MSC-09RV -E2 MSC-12RV -E2

REMOTE CONTROLLER



MSC-07RV -E3 MSC-09RV -E3 MSC-12RV -E3
 MSC-07RV -E4 MSC-09RV -E4 MSC-12RV -E4

REMOTE CONTROLLER



Indoor model			MSC-07RV - [E4]	MSC-09RV - [E4]	MSC-12RV - [E4]
Function			Cooling	Cooling	Cooling
Indoor unit power supply			Single phase 220-240V,50Hz	Single phase 220-240V,50Hz	Single phase 220-240V,50Hz
Capacity	Air flow(High/Med.*/Low*)	m³ /h	474/384*/294*	474/384*/294*	588/468*/360*
Electrical data	Power outlet	A	10	10	10
	Running current	A	0.17	0.17	0.19
	Power input	W	35	35	40
	Power factor	%	93.6-85.8	93.6-85.8	95.7-87.7
	Starting current	A	—	—	—
	Fan motor current	A	0.17	0.17	0.19
Fan motor	Model		RC4V19-LA	RC4V19-LA	RC4V19-GA
	Winding resistance(at20°C)	Ω	WHT-BLK 413 BLK-RED 334	WHT-BLK 413 BLK-RED 334	WHT-BLK 375 BLK-RED 294
	Dimensions W×H×D	mm	850×278×191	850×278×191	850×278×191
	Weight	kg	9	9	10
	Air direction		5	5	5
Special remarks	Sound level(High/Med.*/Low*)	dB	36/31*/26*	36/31*/26*	39/34*/29*
	Fan speed (High/Med.*/Low*)	rpm	950/790*/640*	950/790*/640*	1020/850*/690*
	Fan speed regulator		3	3	3
	Thermistor RT11(at25°C)	kΩ	10	10	10
	Thermistor RT12(at25°C)	kΩ	10	10	10
Outdoor model			MU-07RV - [E4]	MU-09RV - [E4]	MU-12RV - [E4]
Outdoor unit power supply			Single phase 220-240V,50Hz	Single phase 220-240V,50Hz	Single phase 220-240V,50Hz
Capacity	Capacity	kW	2.2	2.5	3.5
	Dehumidification	ℓ /h	0.8	1.1	1.6
	Outdoor air flow	m³ /h	1620-1752	1620-1752	1848-1980
Electrical data	Power outlet	A	10	10	10
	Running current	A	2.98-2.93	3.43-3.28	6.01-6.16
	Power input	W	645-675	745-775	1270-1350
	Auxiliary heater	A(kW)	—	—	—
	Power factor	%	98.4-96.0	98.7-98.5	96.1-91.3
	Starting current	A	19	20	35
	Compressor motor current	A	2.77-2.71	3.22-3.06	5.72-5.84
	Fan motor current	A	0.21-0.22	0.21-0.22	0.29-0.33
Coefficient of performance(C.O.P)			3.24-3.10	3.21-3.09	2.67-2.52
Compressor	Model		RH-130VGCT	RH-140VGCT	RH-220VHAT
	Output	W	650	700	1050
	Winding resistance(at20°C)	Ω	C-R 4.18 C-S 5.76	C-R 4.03 C-S 5.71	C-R 2.13 C-S 3.91
Fan motor	Model		RA6V23-FC	RA6V23-FC	RA6V33-DC
	Winding resistance(at20°C)	Ω	WHT-BLK 353 BLK-RED 321	WHT-BLK 353 BLK-RED 321	WHT-BLK 301 BLK-RED 332
	Dimensions W×H×D	mm	780×540×255	780×540×255	780×540×255
	Weight	kg	32	32	34
Special remarks	Sound level	dB	44-45	44-45	49
	Fan speed	rpm	710-760	710-760	810-840
	Fan speed regulator		1	1	1
	Refrigerant filling capacity(R22)	kg	0.80	0.80	0.88
	Refrigerating oil (Model)	cc	300 (MS56)	300 (MS56)	520 (MS56)

NOTE: Test conditions are based on ISO 5151.

Cooling : Indoor DB27°C WB19°C

Outdoor DB35°C WB24°C

Indoor-Outdoor piping length 5m

* Reference value



Indoor model			MSC-07RV - [E4]		MSC-09RV - [E4]		MSC-12RV - [E4]	
Function			Cooling	Heating	Cooling	Heating	Cooling	Heating
Indoor unit power supply			Single phase 220-240V,50Hz		Single phase 220-240V,50Hz		Single phase 220-240V,50Hz	
Capacity	Air flow(High/Med.*/Low*)	m³ /h	474/384*/294*	504/414*/336*	474/384*/294*	504/414*/336*	588/468*/360*	642/516*/402*
Electrical data	Power outlet	A	10		10		10	
	Running current	A	0.17		0.17		0.19	
	Power input	W	35		35		40	
	Power factor	%	93.6-85.8		93.6-85.8		95.7-87.7	
	Starting current	A	—		—		—	
	Fan motor current	A	0.17		0.17		0.19	
Fan motor	Model		RC4V19-LA		RC4V19-LA		RC4V19-GA	
	Winding resistance(at20°C)	Ω	WHT-BLK 413 BLK-RED 334		WHT-BLK 413 BLK-RED 334		WHT-BLK 375 BLK-RED 294	
	Dimensions W×H×D	mm	850×278×191		850×278×191		850×278×191	
	Weight	kg	9		9		10	
Special remarks	Air direction		5		5		5	
	Sound level(High/Med.*/Low*)	dB	36/31*/26 *	35/30*/26 *	36/31*/26 *	35/30*/26 *	39/34*/29 *	39/34*/29 *
	Fan speed(High/Med.*/Low*)	rpm	950/790*/640 *	1000/850*/710*	950/790*/640 *	1000/850*/710*	1020/850*/690*	1100/920*/750*
	Fan speed regulator		3		3		3	
	Thermistor RT11(at25°C)	kΩ	10		10		10	
	Thermistor RT12(at25°C)	kΩ	10		10		10	
Outdoor model			MUH-07RV - [E4]		MUH-09RV - [E4]		MUH-12RV - [E4]	
Outdoor unit power supply			Single phase 220-240V,50Hz		Single phase 220-240V,50Hz		Single phase 220-240V,50Hz	
Capacity	Capacity	kW	2.2	2.5	2.5	3.1	3.4	4.0
	Dehumidification	ℓ /h	0.8	—	1.1	—	1.6	—
	Outdoor air flow	m³ /h	1620-1752		1620-1752		1656-1758	
Electrical data	Power outlet	A	10		10		10	
	Running current	A	3.13-3.03	2.98-2.88	3.93-3.83	4.13-3.93	5.56-5.71	5.76-5.91
	Power input	W	675-715	645-685	845-885	885-905	1180-1260	1220-1310
	Auxiliary heater	A(kW)	—		—		—	
	Power factor	%	98.0-98.3	98.4-99.1	97.7-96.3	97.4-95.9	96.5-91.9	96.3-92.4
	Starting current	A	25		25		35	
	Compressor motor current	A	2.92-2.81	2.77-2.66	3.72-3.61	3.92-3.71	5.27-5.39	5.47-5.59
	Fan motor current	A	0.21-0.22		0.21-0.22		0.29-0.32	
Coefficient of performance(C.O.P)			3.10-2.93	3.68-3.47	2.84-2.72	3.37-3.30	2.79-2.62	3.17-2.96
Compressor	Model		RH-130VGCT		RH-165VGCT		RH-220VHAT	
	Output	W	650		800		1050	
	Winding resistance(at20°C)	Ω	C-R 4.18 C-S 5.76		C-R 3.30 C-S 5.80		C-R 2.13 C-S 3.91	
Fan motor	Model		RA6V23-FB		RA6V23-FB		RA6V33-DB	
	Winding resistance(at20°C)	Ω	WHT-BLK 353 BLK-RED 321		WHT-BLK 353 BLK-RED 321		WHT-BLK 301 BLK-RED 332	
	Dimensions W×H×D	mm	788×540×255		780×540×255		780×540×255	
Special remarks	Weight	kg	33		33		38	
	Sound level	dB	47		47		49	
	Fan speed	rpm	710-760		710-760		810-840	
	Fan speed regulator		1		1		1	
	Refrigerant filling capacity(R22)	kg	0.85		0.85		1.19	
	Refrigerating oil (Model)	cc	300 (MS56)		300 (MS56)		520 (MS56)	
	Thermistor RT61(at0°C)	kΩ	33.18		33.18		33.18	

NOTE: Test conditions are based on ISO 5151.

Cooling : Indoor DB27°C WB19°C

Outdoor DB35°C WB24°C

Indoor-Outdoor piping length 5m

Heating : Indoor DB20°C

Outdoor DB 7°C / WB 6°C

* Reference value

4

WIRING DIAGRAM

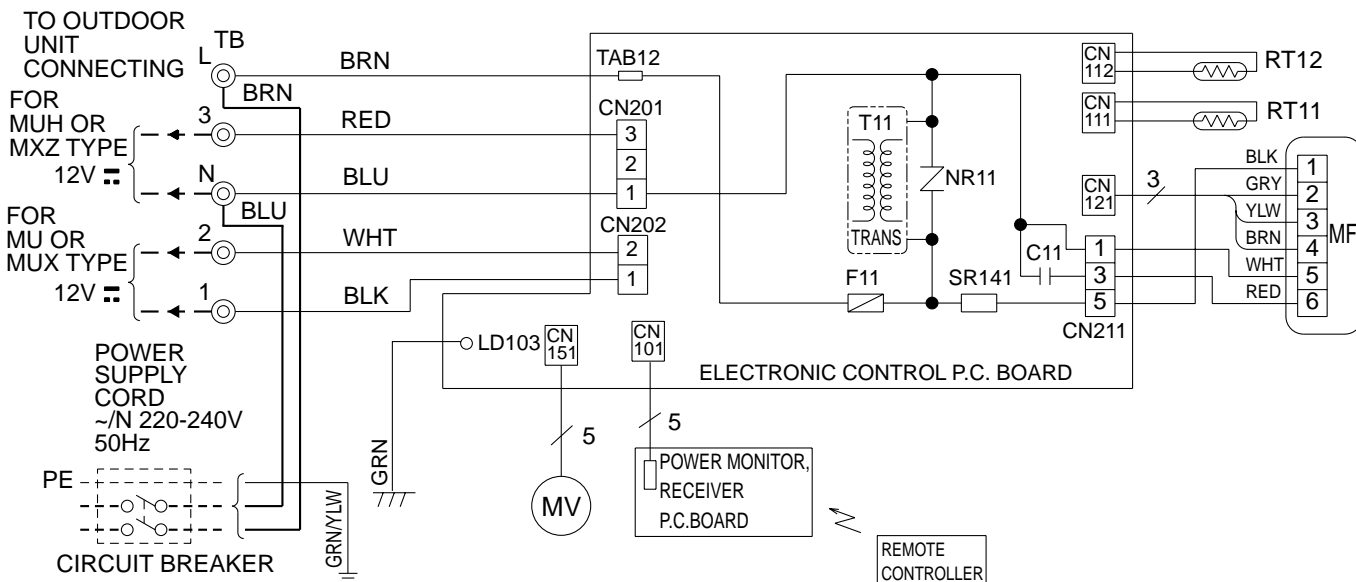
MSC-07RV -E4

MSC-09RV -E4

MSC-12RV -E4

MODELS WIRING DIAGRAM

INDOOR UNIT



SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
C11	INDOOR FAN CAPACITOR	NR11	VARISTOR	TB	TERMINAL BLOCK
F11	FUSE(3.15A)	RT11	ROOM TEMPERATURE THERMISTOR	T11	TRANSFORMER
MF	INDOOR FAN MOTOR(INNER FUSE)	RT12	INDOOR COIL THERMISTOR		
MV	VANE MOTOR	SR141	SOLID STATE RELAY		

NOTE:1. About the outdoor side electric wiring refer to the outdoor unit electric wiring diagram for servicing.

2. Use copper conductors only. (For field wiring)

3. Symbols below indicate.

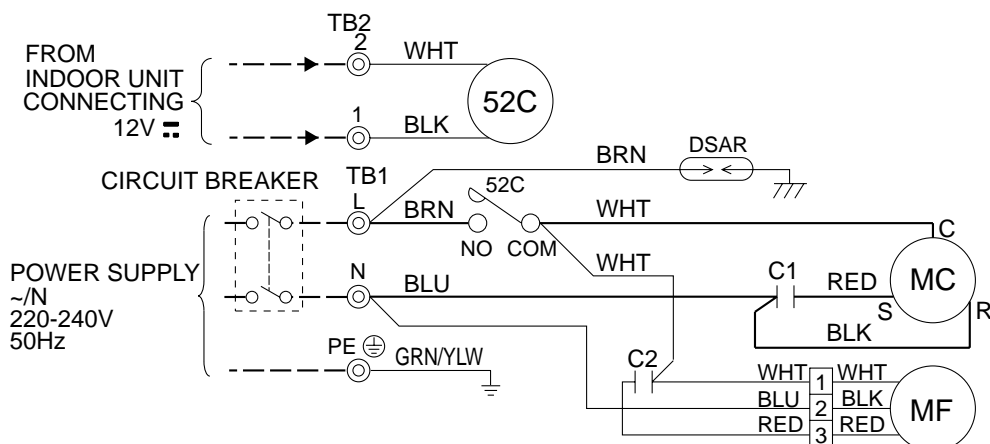
⊙: Terminal block, □□□□: Connector

SG79J412H01

MU-12RV - E4

MODELS WIRING DIAGRAM

OUTDOOR UNIT



SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
C1	COMPRESSOR CAPACITOR	MC	COMPRESSOR(INNER PROTECTOR)	52C	COMPRESSOR CONTACTOR
C2	OUTDOOR FAN CAPACITOR	MF	OUTDOOR FAN MOTOR(INNER FUSE)		
DSAR	SURGE ABSORBER	TB1,TB2	TERMINAL BLOCK		

NOTE:1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.

VG79B132H01

2. Use copper conductors only. (For field wiring)

3. Symbols below indicate.

©: Terminal block, □□□□: Connector

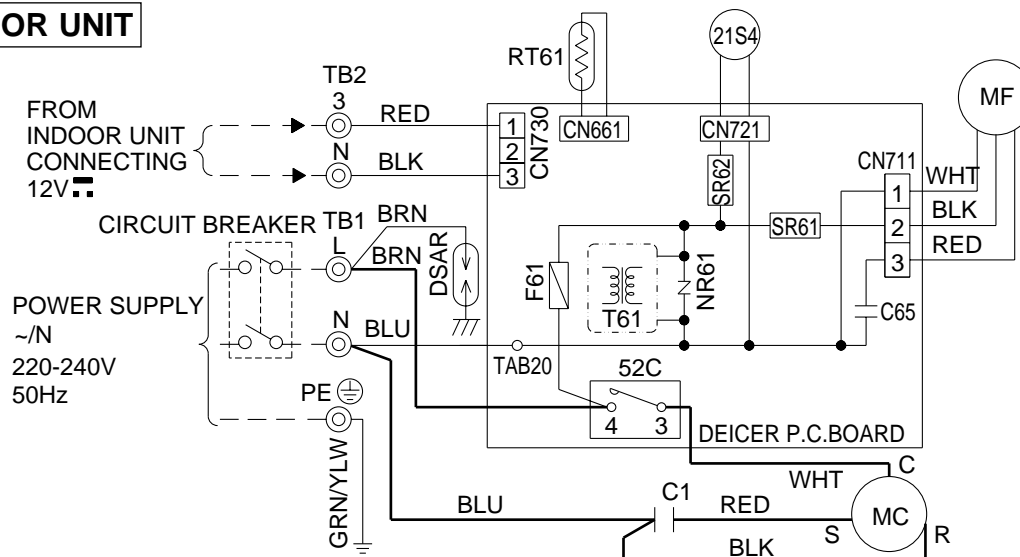
MUH-07RV - **E4**

MUH-09RV - E4

MUH-12RV - **E4**

MODELS WIRING DIAGRAM

OUTDOOR UNIT



SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
C1	COMPRESSOR CAPACITOR	MF	OUTDOOR FAN MOTOR(INNER FUSE)	TB1,TB2	TERMINAL BLOCK
C65	OUTDOOR FAN CAPACITOR	NR61	VARISTOR	21S4	R.V. COIL
DSAR	SURGE ABSORBER	RT61	DEFROST THERMISTOR	52C	COMPRESSOR CONTACTOR
F61	FUSE(2A)	SR61, SR62	SOLID STATE RELAY		
MC	COMPRESSOR(INNER PROTECTOR)	T61	TRANSFORMER		

NOTE:1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.

SG79B111H01

2. Use copper conductors only. (For field wiring)

3. Symbols below indicate.

©: Terminal block, : Connector

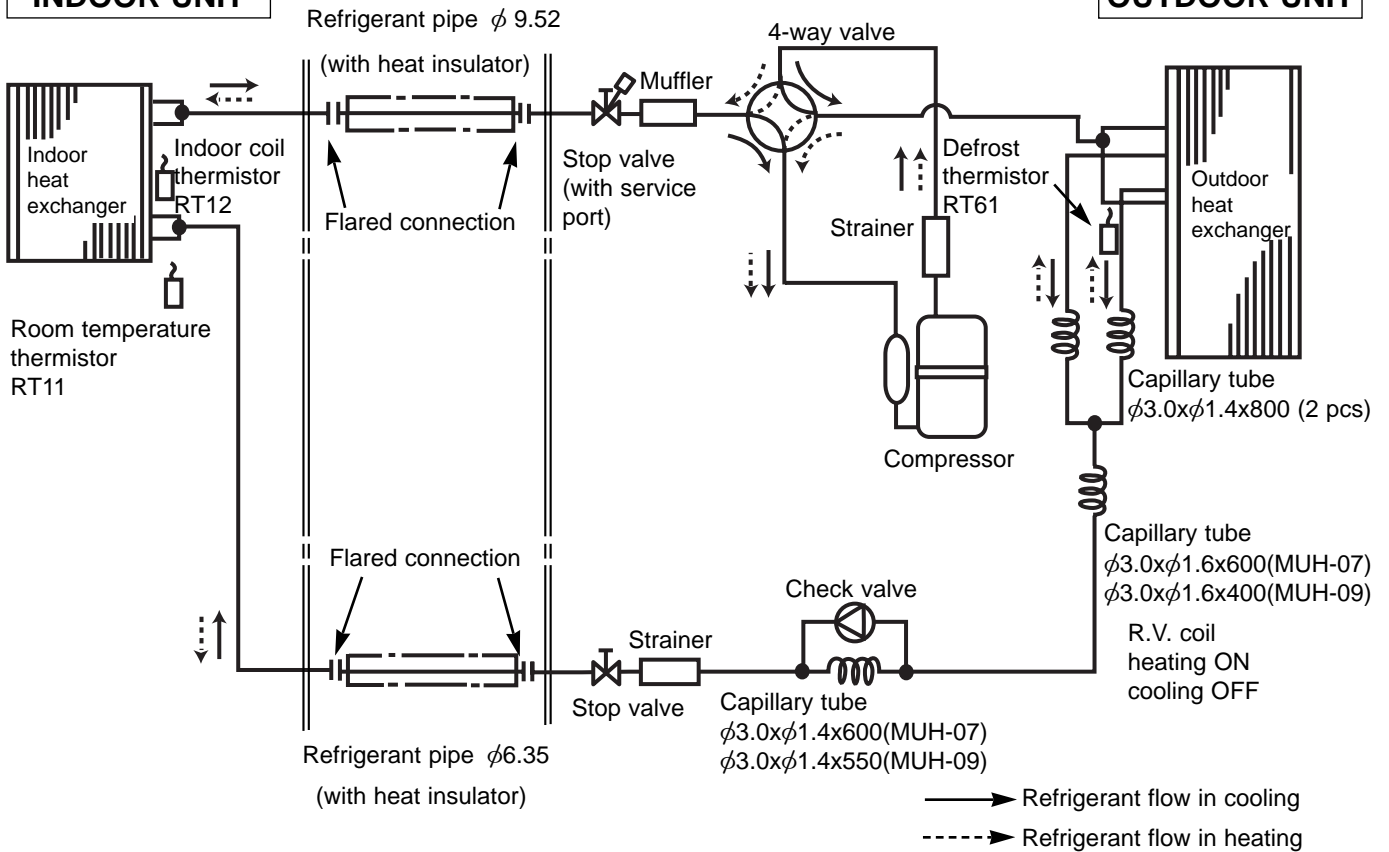
Unit:mm

MSC-07RV -E3 MSC-07RV -E4
 MSC-09RV -E3 MSC-09RV -E4

MUH-07RV -E3 MUH-07RV -E4
 MUH-09RV -E3 MUH-09RV -E4

INDOOR UNIT

OUTDOOR UNIT



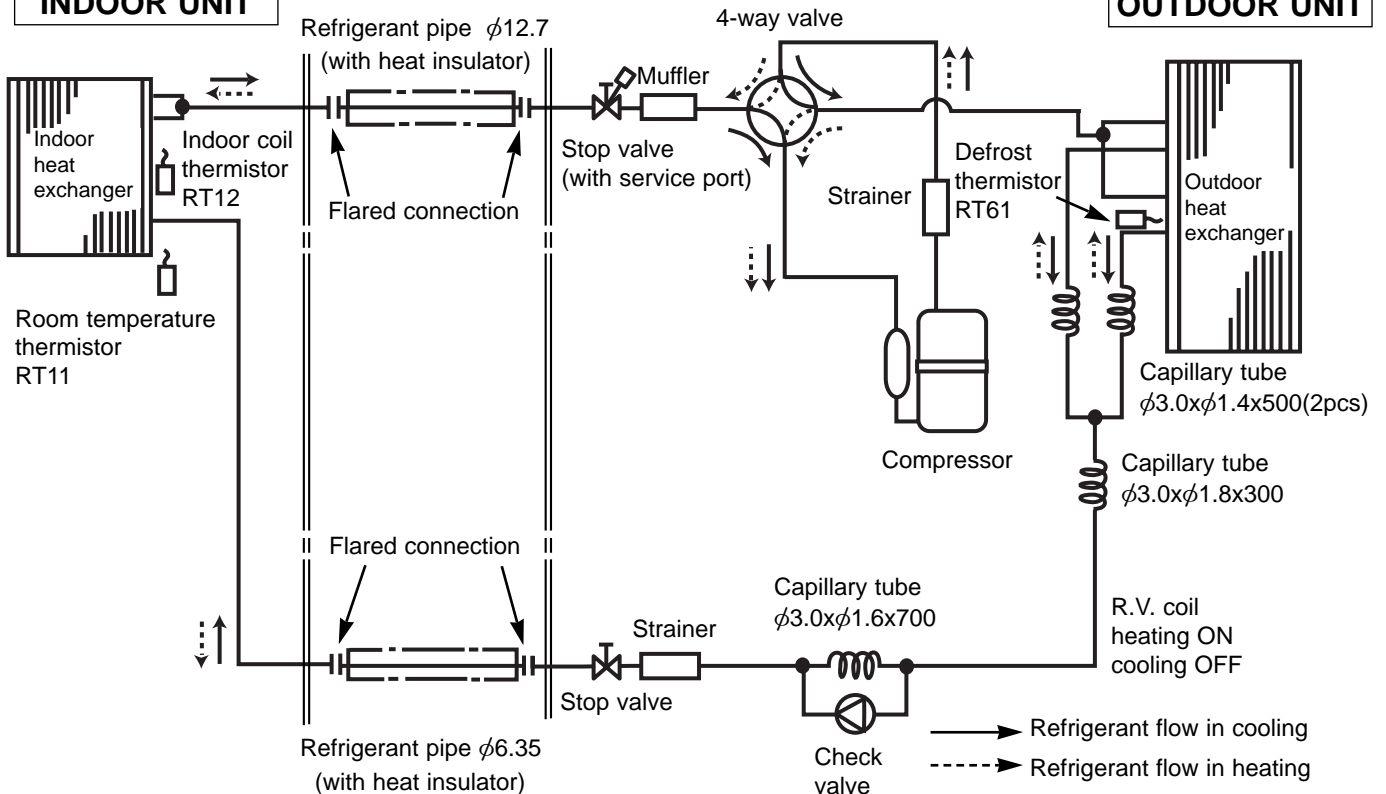
Unit:mm

MSC-12RV -E3 MSC-12RV -E4

MUH-12RV -E3 MUH-12RV -E4

INDOOR UNIT

OUTDOOR UNIT



MSC-07RV -[E4] **MU-07RV** -[E4] **MUH-07RV** -[E4]

MSC-09RV -[E4] **MU-09RV** -[E4] **MUH-09RV** -[E4]

MSC-12RV -[E4] **MU-12RV** -[E4] **MUH-12RV** -[E4]

6-1. 11-1. COOL () OPERATION

1. Indoor fan speed control

Indoor fan operates continuously at the set speed by FAN SPEED CONTROL button regardless of thermostat's OFF-ON.

In Auto the fan speed is as follows.

MSC-07RV -[E1] **MSC-07RV** -[E2] **MSC-07RV** -[E3]

MSC-09RV -[E1] **MSC-09RV** -[E2] **MSC-09RV** -[E3]

MSC-12RV -[E1] **MSC-12RV** -[E2] **MSC-12RV** -[E3]

Initial temperature difference	Fan speed	Difference between room temperature and set temperature during operation
Room temperature minus set temperature : 2 degrees or more.....	High	1 deg. 1.7 deg. 2 deg. 4 deg.
Room temperature minus set temperature : Between 1 and 2 degrees.....	Med.	
Room temperature minus set temperature : less than 1 degree.....	Low	

MSC-07RV -[E4]

MSC-09RV -[E4]

MSC-12RV -[E4]

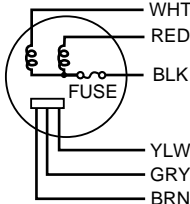
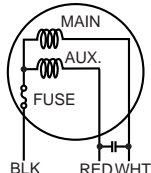
Initial temperature difference	Fan speed	Difference between room temperature and set temperature during operation
Room temperature minus set temperature : 1.7 degrees or more.....	High	1 deg. 1.7 deg. 3 deg.
Room temperature minus set temperature : Between 1 and 1.7 degrees.....	Med.	
Room temperature minus set temperature : less than 1 degree.....	Low	

7-1. Trouble criterion of main parts

MSC-07RV -[E4] **MU-07RV** -[E4] **MUH-07RV** -[E4]

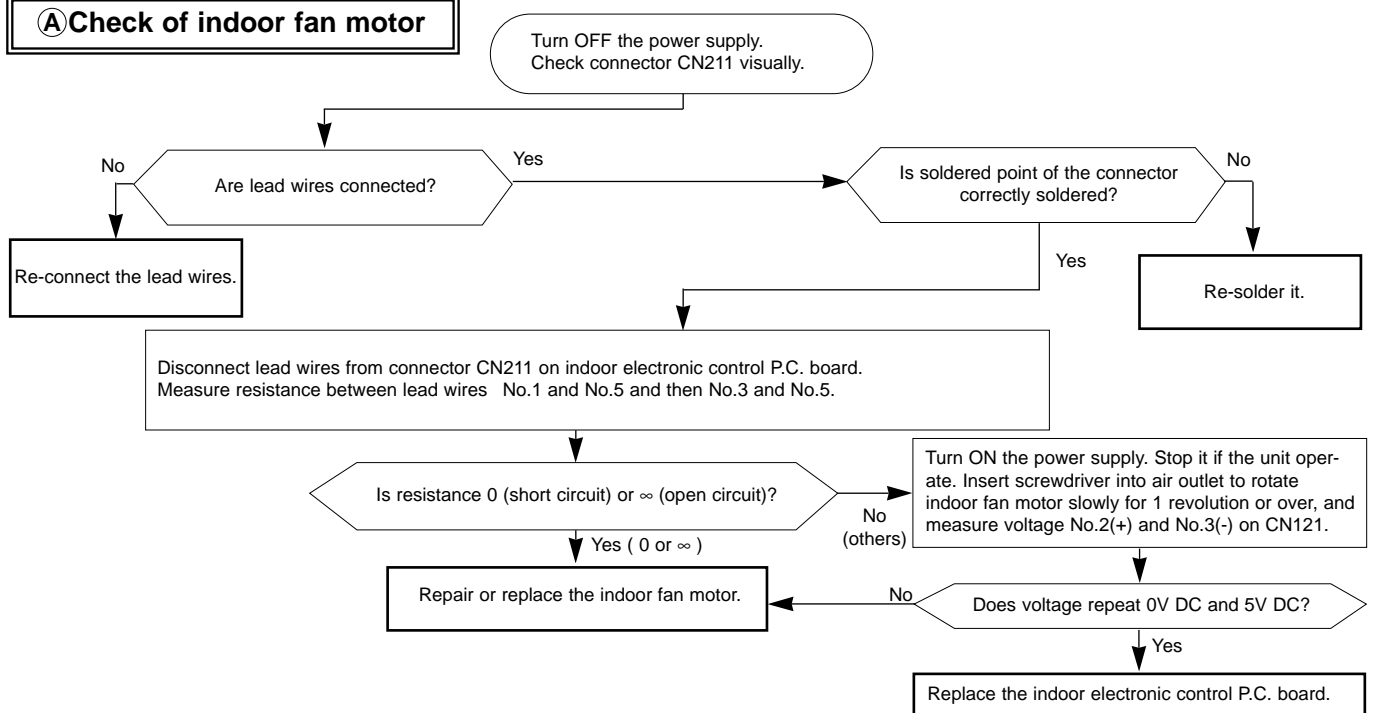
MSC-09RV -[E4] **MU-09RV** -[E4] **MUH-09RV** -[E4]

MSC-12RV -[E4] **MU-12RV** -[E4] **MUH-12RV** -[E4]

Part name	Check method and criterion				Figure	
Indoor fan motor(MF) INNER FUSE 136±3 CUT OFF	Motor part	Measure the resistance between the terminals with a tester. (Coil wiring temperature10°C ~ 30°C)				
		Color of lead wire	Normal			Abnormal
			MSC-07/09RV-[E4]	MSC-12RV-[E4]		
		WHT-BLK	396 ~ 430Ω	396 ~ 430Ω		Open or short-circuit
		BLK-RED	320 ~ 348Ω	320 ~ 348Ω		
Outdoor fan motor(MF) INNER FUSE 163±3 CUT OFF	Motor part	Measure the resistance between the terminals with a tester. (Coil wiring temperature −10°C ~ 40°C)				
		Color of lead wire	Normal			Abnormal
			MU-07/09RV-[E4]	MU-12RV-[E4]		
		WHT-BLK	311 ~ 381 Ω	265 ~ 325Ω		Open or short-circuit
		BLK-RED	283 ~ 347Ω	292 ~ 359Ω		
		Color of lead wire	Normal		Abnormal	
			MUH-07/09RV-[E4]	MUH-12RV-[E4]		
	WHT-BLK	311 ~ 381 Ω	265 ~ 325Ω	Open or short-circuit		
	BLK-RED	283 ~ 347 Ω	292 ~ 359 Ω			

**When OPERATION INDICATOR lamp flashes 3-time.
Indoor fan motor doesn't operate.**

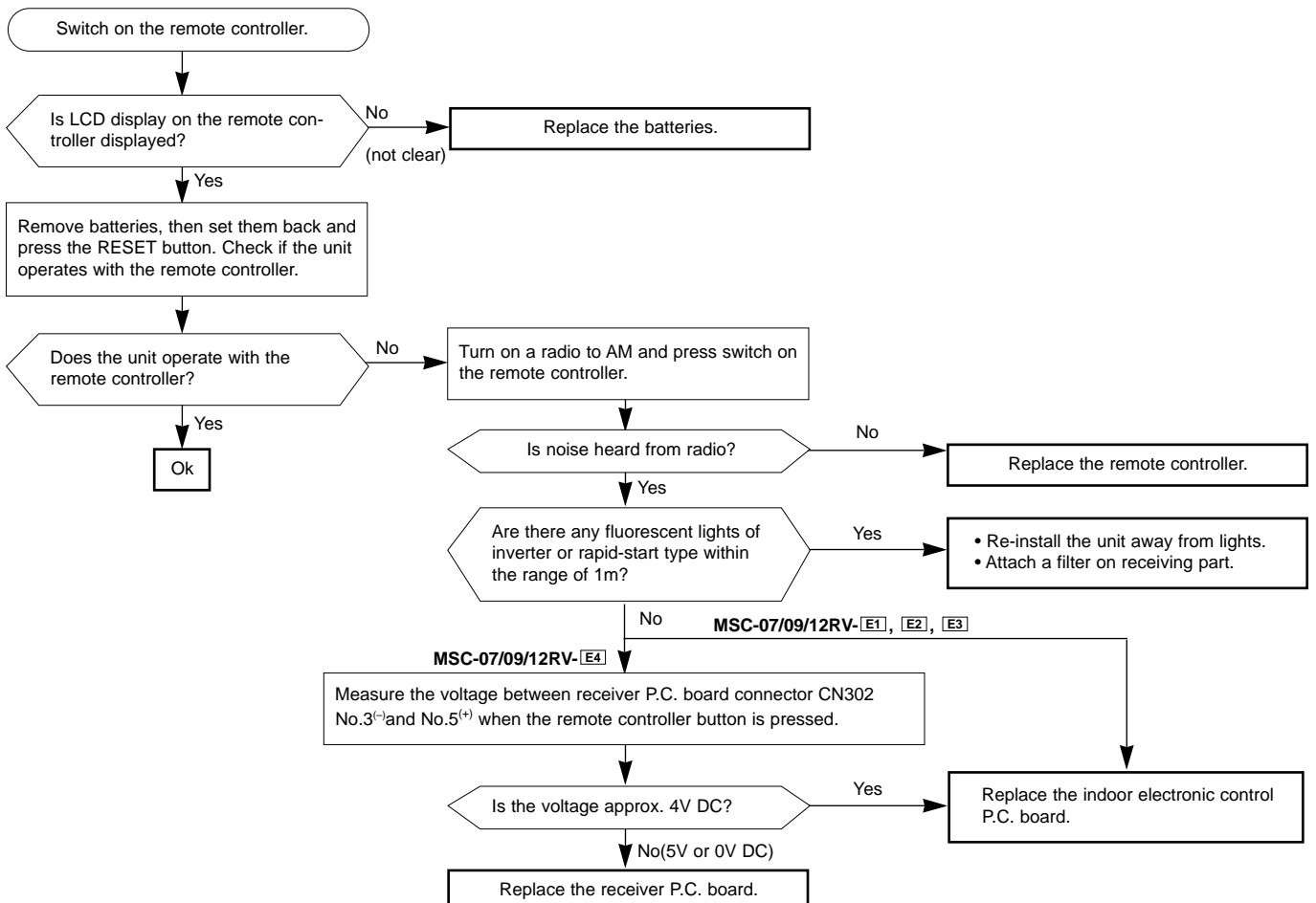
① Check of indoor fan motor



Indoor unit operates by pressing the EMERGENCY OPERATION switch, but doesn't operate with the remote controller.

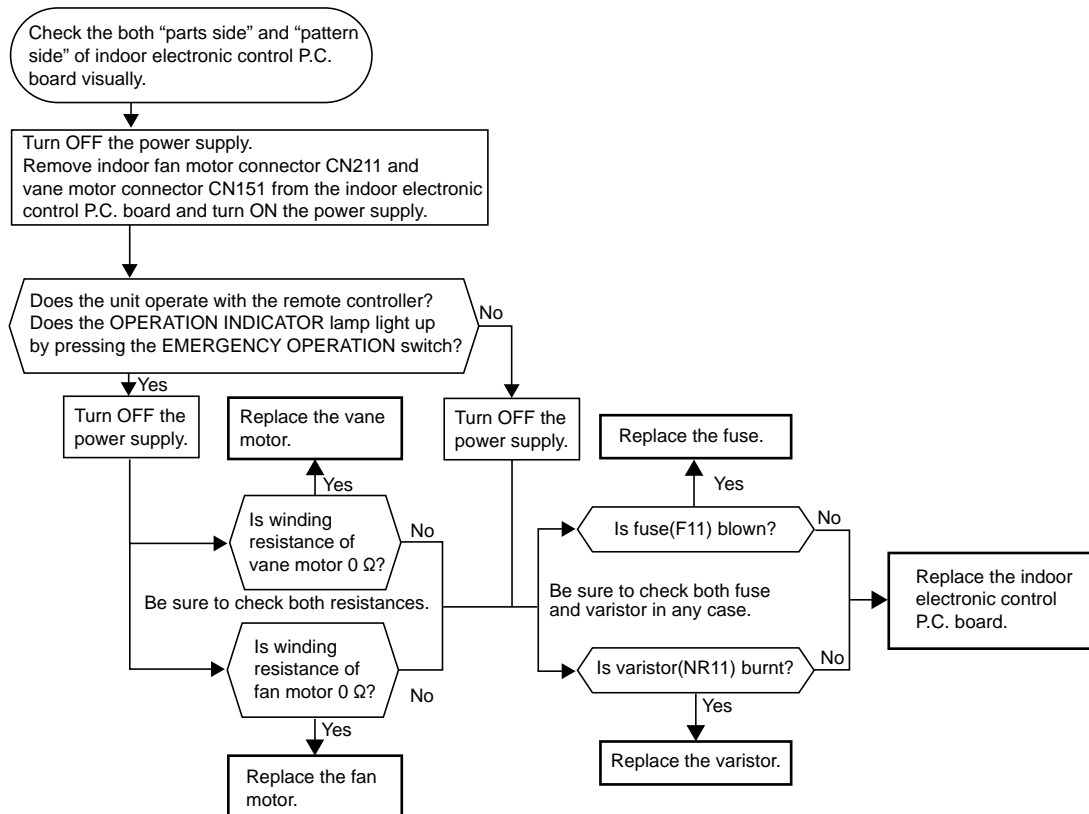
② Check of remote controller and receiver P.C. board

※Check the remote controller is exclusive for this air conditioner.



The unit doesn't operate with the remote controller.
Also, the OPERATION INDICATOR lamp doesn't light up by pressing the EMERGENCY OPERATION switch.

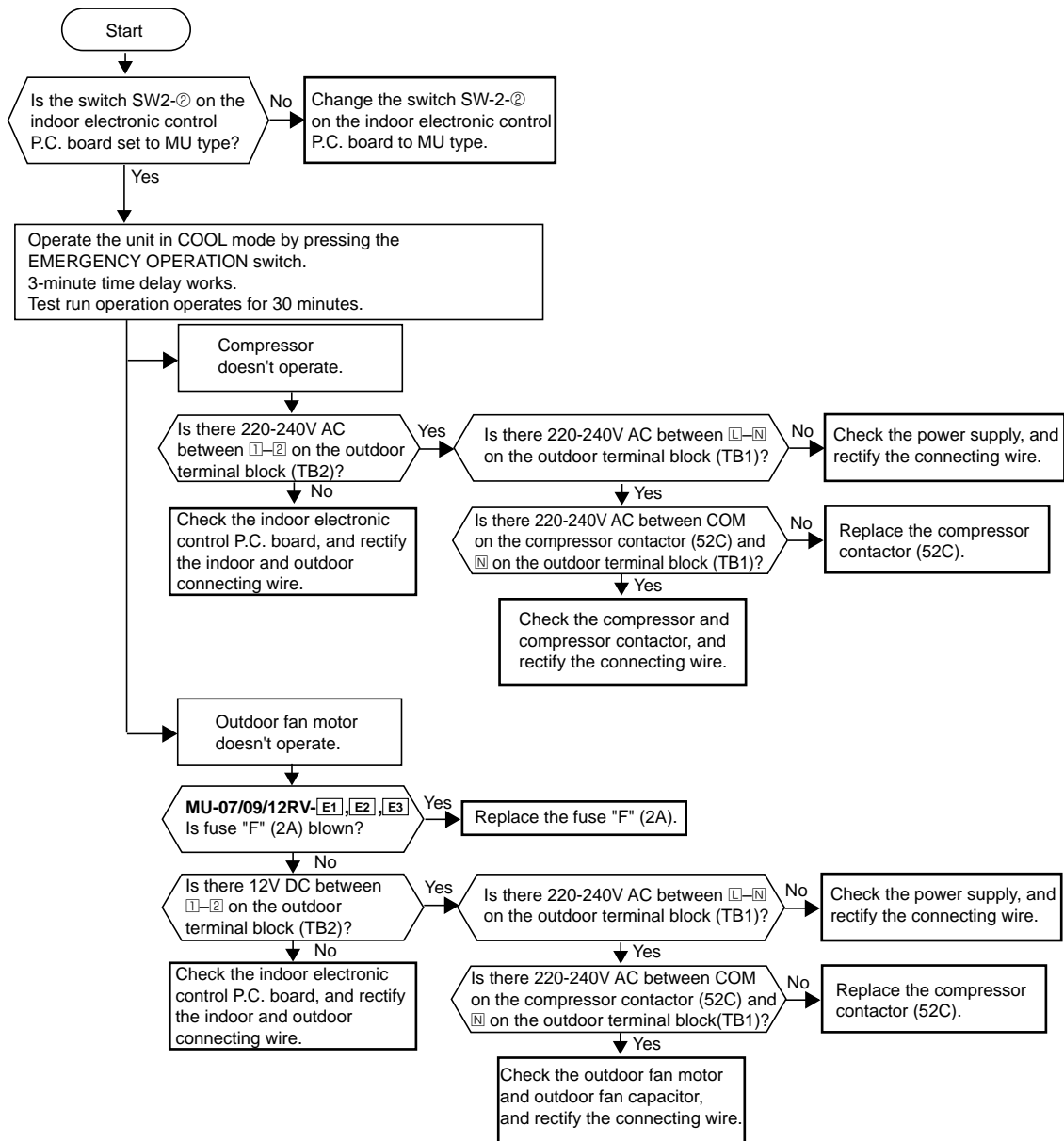
© Check of indoor electronic control P.C. board



Compressor and / or outdoor fan motor doesn't operate.

④ Check of outdoor unit

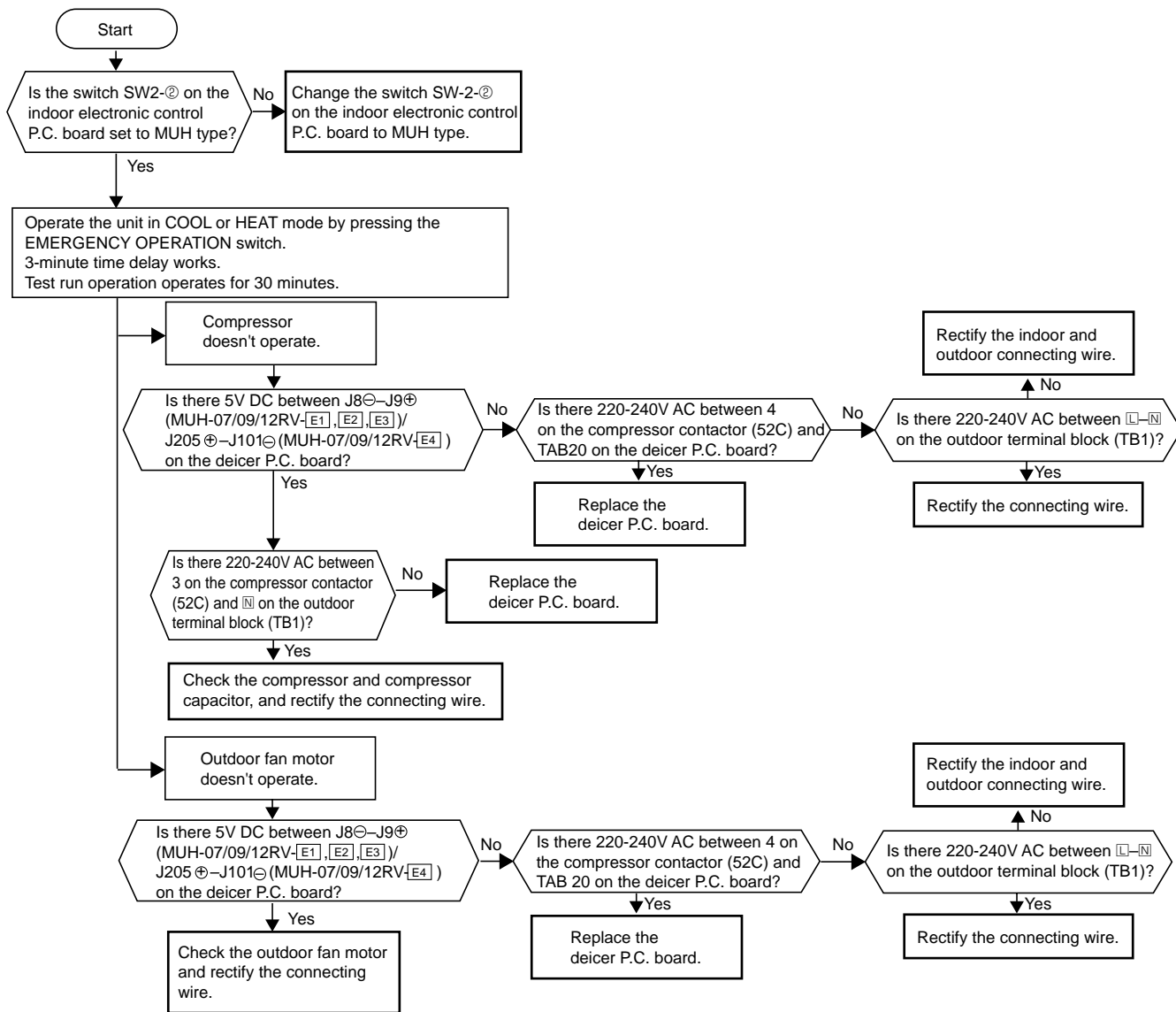
<MU-07/09/12RV>



Compressor and / or outdoor fan motor doesn't operate.

④ Check of outdoor unit

<MUH-07/09/12RV>

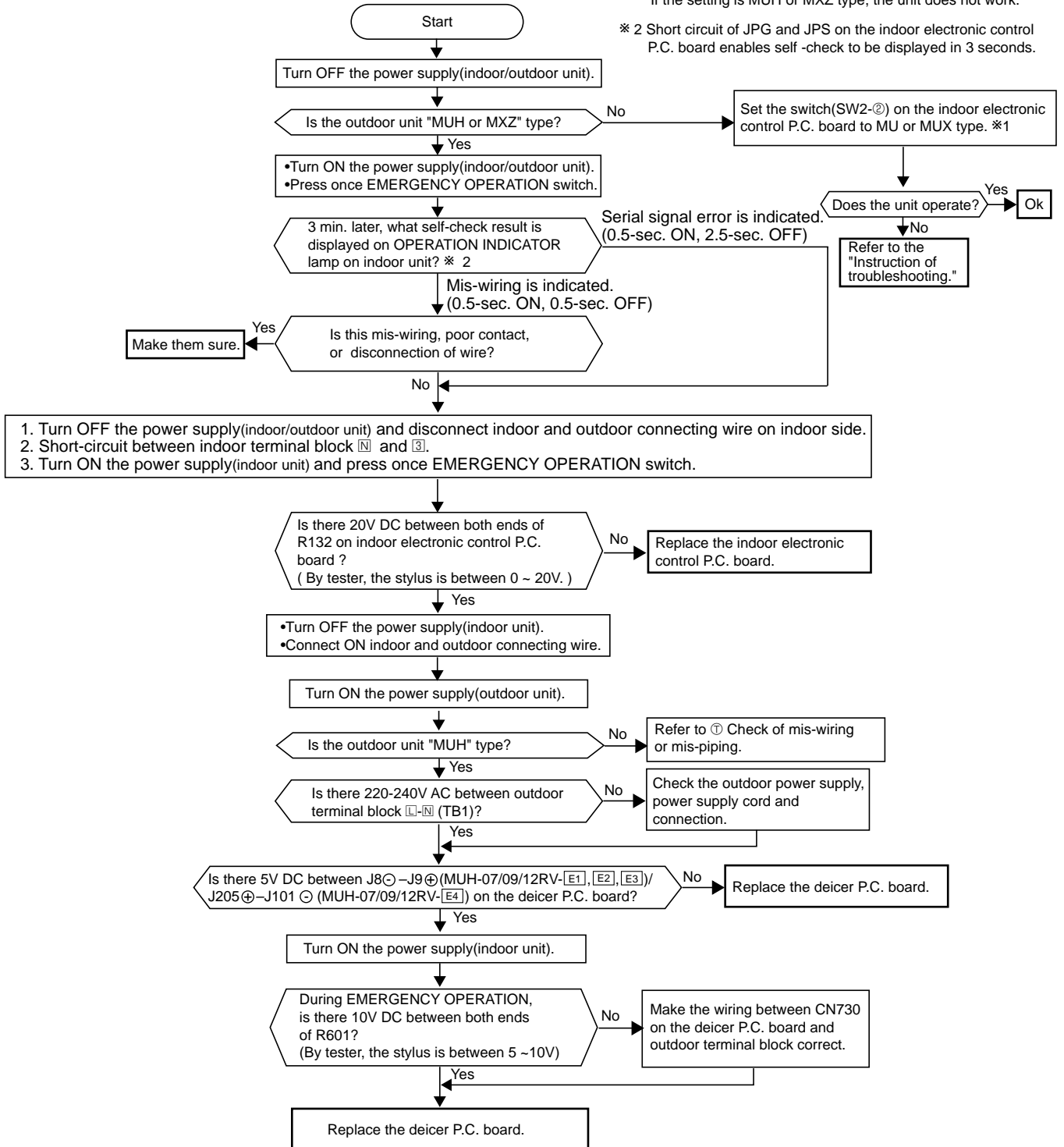


⑤ How to check mis-wiring and serial signal error

Outdoor unit does not work.

※ 1 Set the switch(SW2-②) on indoor electronic control P.C. board to MU or MUX type, when the outdoor unit is MU or MUX type. If the setting is MUH or MXZ type, the unit does not work.

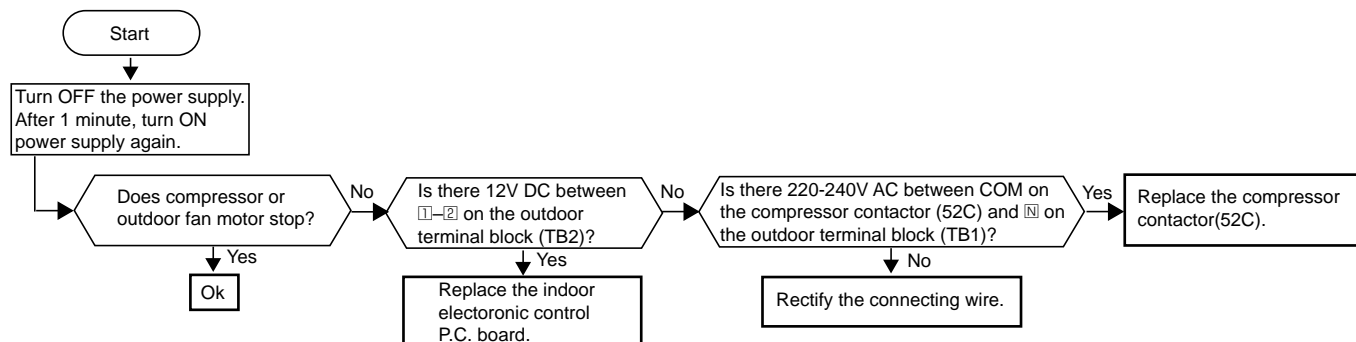
※ 2 Short circuit of JPG and JPS on the indoor electronic control P.C. board enables self -check to be displayed in 3 seconds.



Compressor and / or outdoor fan motor doesn't stop.

⑤ Check of outdoor unit

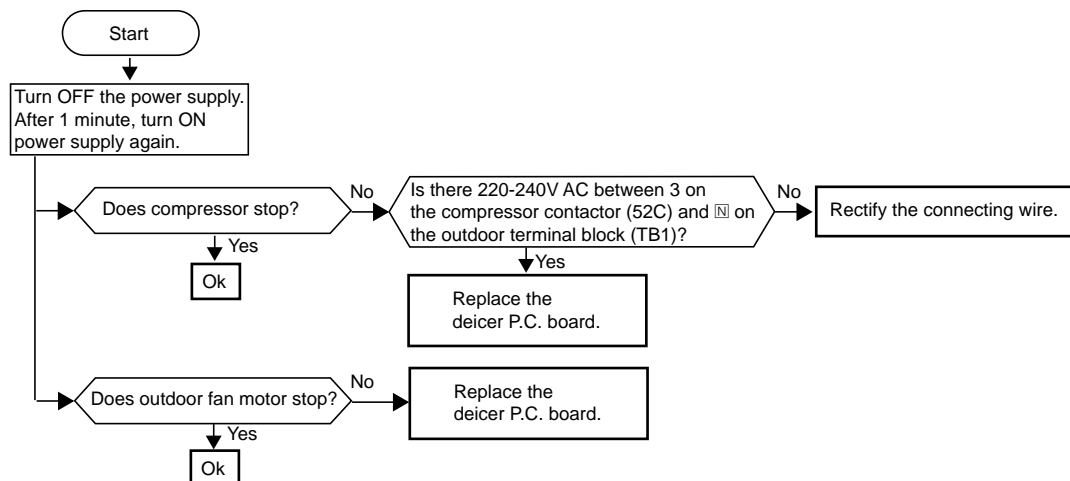
<MU-07/09/12RV>



Compressor and / or outdoor fan motor doesn't stop.

⑤ Check of outdoor unit

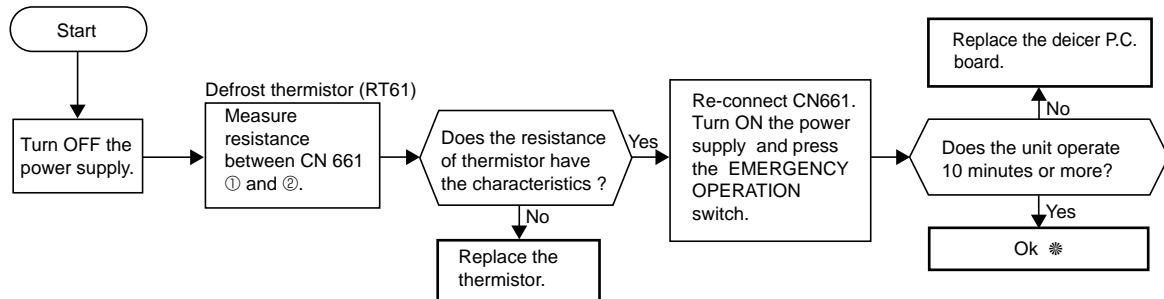
<MUH-07/09/12RV>



When OPERATION INDICATOR lamp flashes 6-time.
Thermistors in the outdoor unit are abnormal.

W Check of outdoor thermistor

<MUH-07/09/12RV>



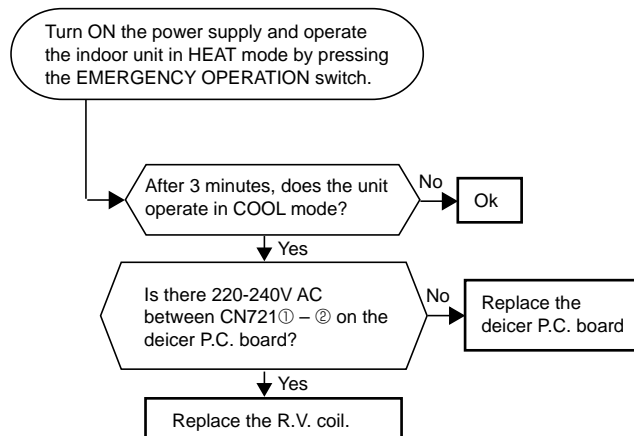
※ Defective contact of the connector is considered.

Unit operates COOL mode even if it is set to HEAT mode.

※ First, measure the resistance of R.V. coil to confirm it is disconnected or is not short-circuit.

X Check of R.V. coil

<MUH-07/09/12RV>

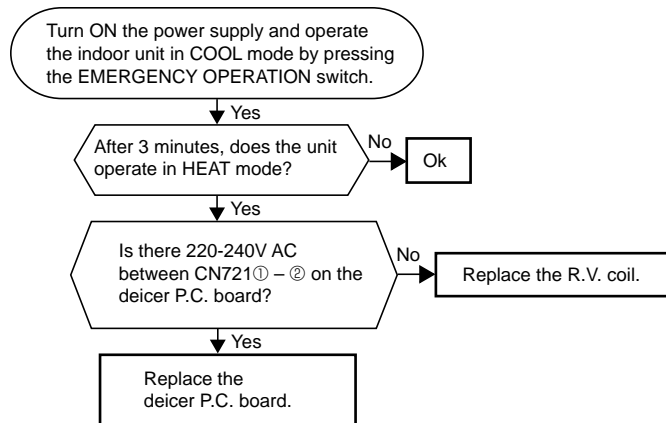


Unit operates HEAT mode even if it is set to COOL mode.

※ First, measure the resistance of R.V. coil to confirm it is disconnected or is not short-circuit.

ⓧ Check of R.V. coil

<MUH-07/09/12RV>



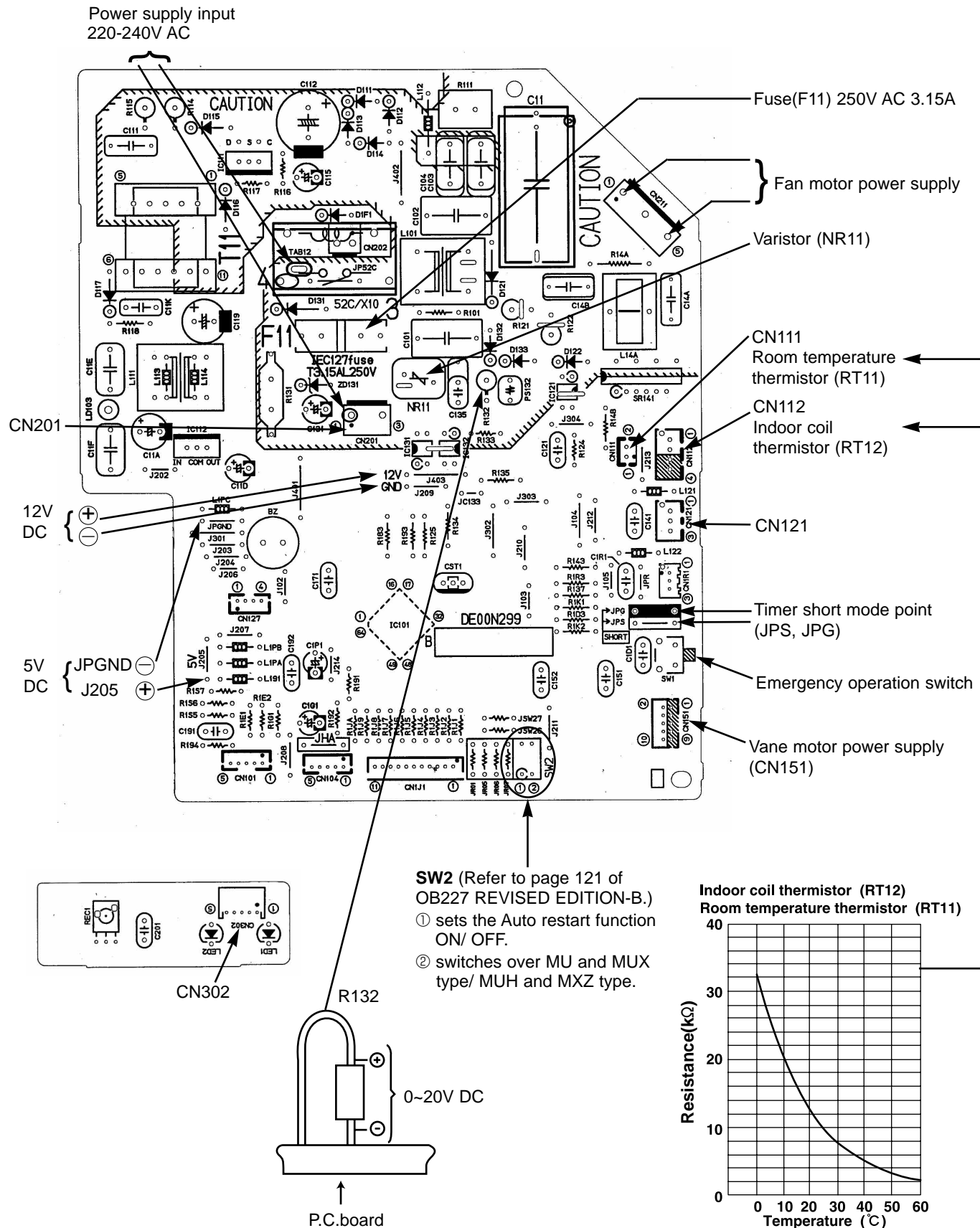
TEST POINT DIAGRAM AND VOLTAGE

MSC-07RV -E4

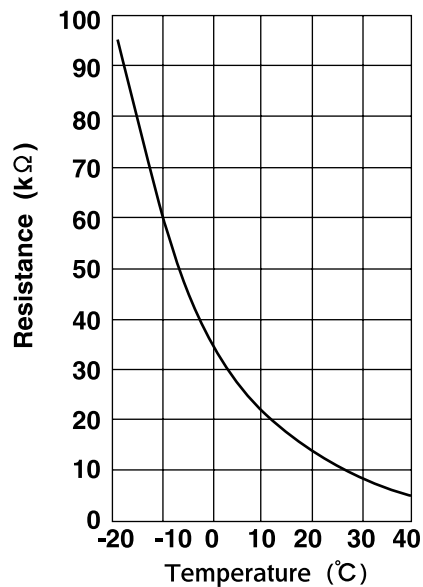
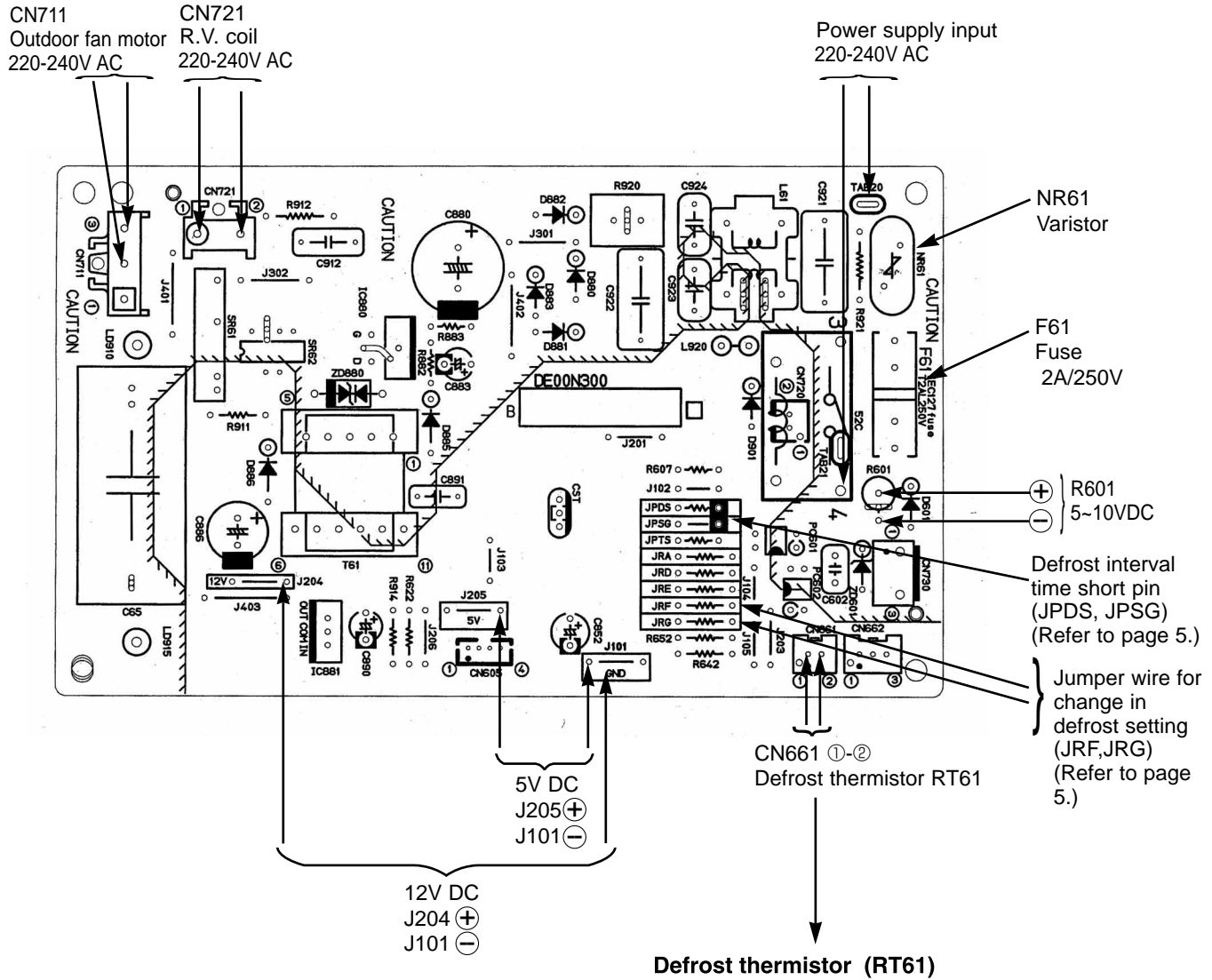
MSC-09RV -E4

MSC-12RV -E4

Indoor electronic control P.C. board

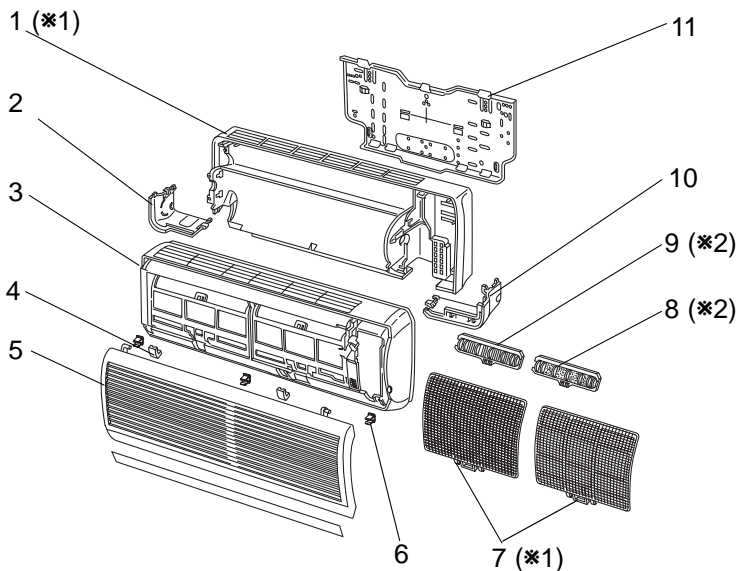


MUH-07RV -E4
MUH-09RV -E4
MUH-12RV -E4
Outdoor deicer P.C. board



MSC-07RV -E1 (WH) MSC-07RV -E2 (WH) MSC-07RV -E3 (WH) MSC-07RV -E4 (WH)
 MSC-09RV -E1 (WH) MSC-09RV -E2 (WH) MSC-09RV -E3 (WH) MSC-09RV -E4 (WH)
 MSC-12RV -E1 (WH) MSC-12RV -E2 (WH) MSC-12RV -E3 (WH) MSC-12RV -E4 (WH)

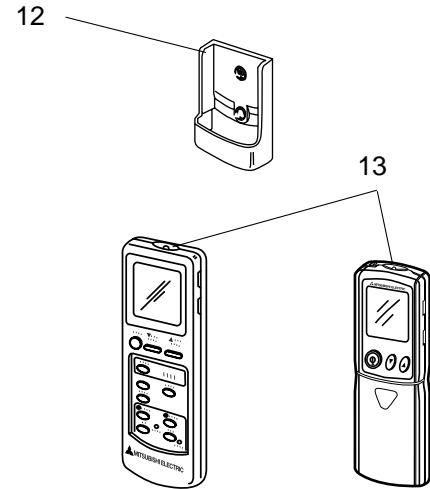
8-1. INDOOR UNIT STRUCTURAL PARTS



(※1) These figures show about MSC-12RV.

(※2) Refer to OB227 REVISED EDITION-B 16. OPTIONAL PARTS. (See page 184)

8-2. ACCESSORY AND REMOTE CONTROLLER



MSC-07RV -E2 MSC-07RV -E3 E4
 MSC-09RV -E2 MSC-09RV -E3 E4
 MSC-12RV -E2 MSC-12RV -E3 E4

8-1. INDOOR UNIT STRUCTURAL PARTS

No.	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty/unit												Remarks
				MSC-07RV-				MSC-09RV-				MSC-12RV-				
				E1 (WH)	E2 (WH)	E3 (WH)	E4 (WH)	E1 (WH)	E2 (WH)	E3 (WH)	E4 (WH)	E1 (WH)	E2 (WH)	E3 (WH)	E4 (WH)	
1	E02 409 234	BOX(WH)		1	1	1	1	1	1	1	1					
	E02 411 234	BOX(WH)										1	1	1	1	
2	E02 409 976	CORNER BOX (LEFT)		1	1	1	1	1	1	1	1	1	1	1	1	
3	E02 424 000	FRONT PANEL(WH)		1	1	1	1	1	1	1	1	1	1	1	1	Including No.4,5,6
4	E02 409 067	SCREW CAP(WH)		2	2	2	2	2	2	2	2	2	2	2	2	
5	E02 424 010	GRILLE(WH)		1	1	1	1	1	1	1	1	1	1	1	1	
6	E02 408 142	CATCH		3	3	3	3	3	3	3	3	3	3	3	3	3PCS/SET
7	E02 408 100	AIR FILTER		2	2	2	2	2	2	2	2					
	E02 410 100	AIR FILTER										2	2	2	2	
8	_____	DEODORIZING FILTER		1	1	1	1	1	1	1	1	1	1	1	1	MAC-1800DF
9	_____	AIR CLEANING FILTER		1	1	1	1	1	1	1	1	1	1	1	1	MAC-1300FT
10	E02 409 975	CORNER BOX (RIGHT)		1	1	1	1	1	1	1	1	1	1	1	1	
11	E02 408 970	INSTALLATION PLATE		1	1	1	1	1	1	1	1	1	1	1	1	

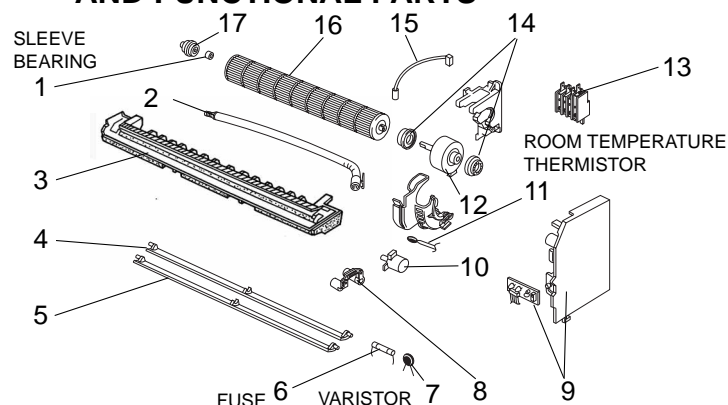
8-2. ACCESSORY AND REMOTE CONTROLLER

12	E02 141 083	REMOTE CONTROLLER HOLDER		1	1			1	1			1	1			
	E02 527 083	REMOTE CONTROLLER HOLDER				1	1			1	1			1	1	
13	E02 504 426	REMOTE CONTROLLER			1				1				1			
	E02 583 426	REMOTE CONTROLLER				1	1			1	1			1	1	

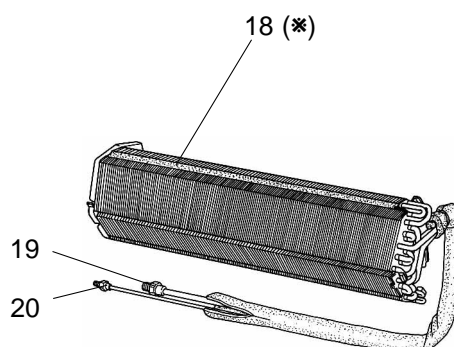
MSC-07RV -E1 (WH) MSC-07RV -E2 (WH) MSC-07RV -E3 (WH) MSC-07RV -E4 (WH)
 MSC-09RV -E1 (WH) MSC-09RV -E2 (WH) MSC-09RV -E3 (WH) MSC-09RV -E4 (WH)
 MSC-12RV -E1 (WH) MSC-12RV -E2 (WH) MSC-12RV -E3 (WH) MSC-12RV -E4 (WH)

8-3. INDOOR UNIT ELECTRICAL PARTS

AND FUNCTIONAL PARTS



8-4. INDOOR UNIT HEAT EXCHANGER



(*)These figures show about MSC-12RV.

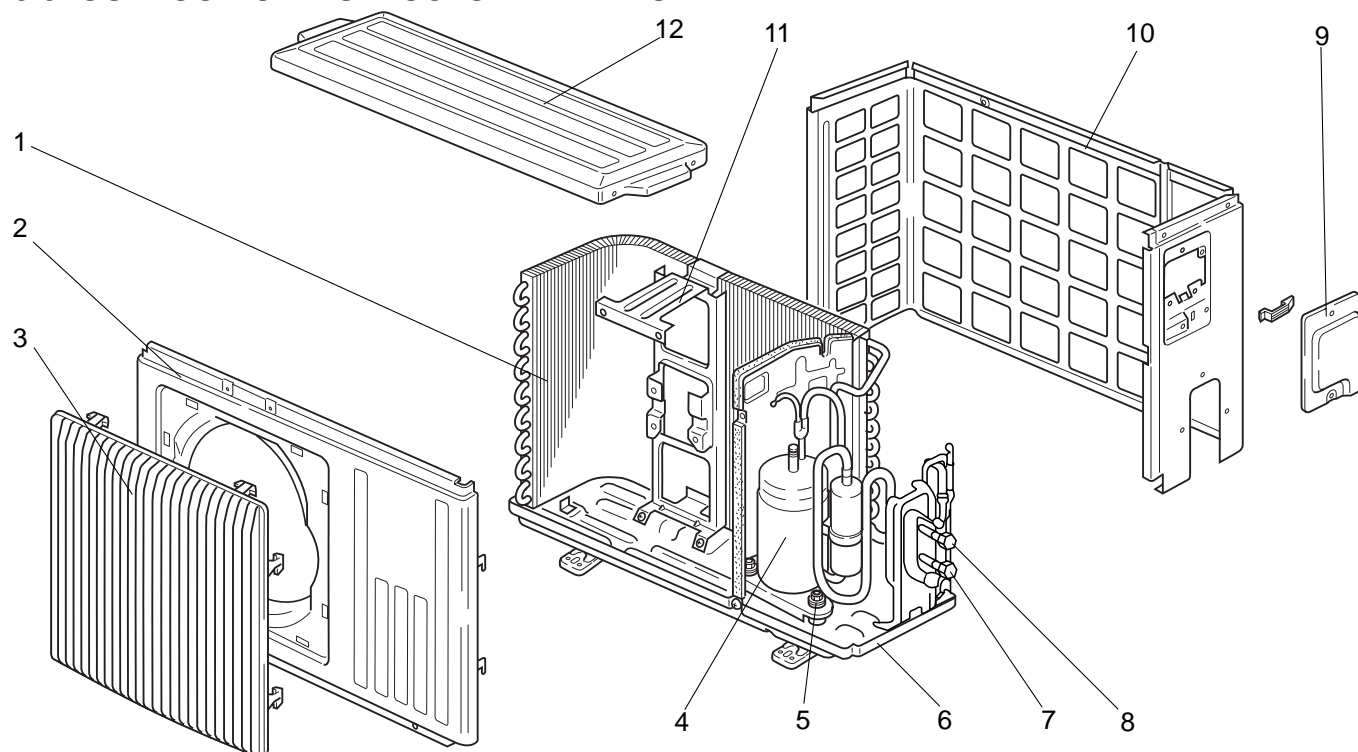
8-3. INDOOR UNIT ELECTRICAL PARTS AND FUNCTIONAL PARTS

No.	Part No.			Part Name	Symbol in Wiring Diagram	Q'ty/unit												Remarks
						MSC-07RV				MSC-09RV				MSC-12RV				
						E1 (WH)	E2 (WH)	E3 (WH)	E4 (WH)	E1 (WH)	E2 (WH)	E3 (WH)	E4 (WH)	E1 (WH)	E2 (WH)	E3 (WH)	E4 (WH)	
1	E02	001	504	SLEEVE BEARING		1	1	1	1	1	1	1	1	1	1	1		
2	E02	408	702	DRAIN HOSE		1	1	1	1	1	1	1	1	1	1	1		
3	E02	409	235	NOZZLE (WH)		1	1	1	1	1	1	1	1	1	1	1		
4	E02	409	040	VANE UPPER (WH)		1	1	1	1	1	1	1	1	1	1	1		
5	E02	409	041	VANE LOWER (WH)		1	1	1	1	1	1	1	1	1	1	1		
6	E02	127	382	FUSE	F11	1	1	1	1	1	1	1	1	1	1	1	3.15A	
7	E02	336	385	VARISTOR	NR11	1	1	1	1	1	1	1	1	1	1	1		
8	E02	408	034	VANE MOTOR SUPPORT SET		1	1	1	1	1	1	1	1	1	1	1		
9	E02	424	452	ELECTRONIC CONTROL P.C.BOARD		1											AUTO RESTART	
	E02	504	452	ELECTRONIC CONTROL P.C.BOARD			1										AUTO RESTART	
	E02	583	452	ELECTRONIC CONTROL P.C.BOARD				1									AUTO RESTART	
	E02	691	452	ELECTRONIC CONTROL P.C.BOARD					1								AUTO RESTART	
	E02	425	452	ELECTRONIC CONTROL P.C.BOARD						1							AUTO RESTART	
	E02	505	452	ELECTRONIC CONTROL P.C.BOARD							1						AUTO RESTART	
	E02	584	452	ELECTRONIC CONTROL P.C.BOARD								1					AUTO RESTART	
	E02	692	452	ELECTRONIC CONTROL P.C.BOARD									1				AUTO RESTART	
	E02	426	452	ELECTRONIC CONTROL P.C.BOARD										1			AUTO RESTART	
	E02	506	452	ELECTRONIC CONTROL P.C.BOARD											1	1	AUTO RESTART	
	E02	693	452	ELECTRONIC CONTROL P.C.BOARD													1	AUTO RESTART
10	E02	408	303	VANE MOTOR	MV	1	1	1	1	1	1	1	1	1	1			
	E02	693	303	VANE MOTOR	MV												1	
11	E02	408	308	ROOM TEMPERATURE THERMISTOR	RT11	1	1	1	1	1	1	1	1	1	1	1		
12	E02	151	300	INDOOR FAN MOTOR	MF	1	1	1		1	1	1		1	1	1	1	RC4V19-□□
	E02	665	300	INDOOR FAN MOTOR	MF				1				1					RC4V19-□□
13	E02	424	375	TERMINAL BLOCK	TB	1	1	1		1	1	1		1	1	1		
	E02	691	375	TERMINAL BLOCK	TB				1				1				1	
14	E02	151	505	FAN MOTOR RUBBER MOUNT		2	2	2		2	2	2		2	2	2	2	2PCS/SET
	E02	665	505	FAN MOTOR RUBBER MOUNT					2				2					2PCS/SET
15	E02	408	307	INDOOR COIL THERMISTOR	RT12	1	1	1	1	1	1	1	1	1	1	1	1	
16	E02	408	302	LINE FLOW FAN		1	1	1	1	1	1	1	1	1	1	1	1	
17	E02	408	509	BEARING MOUNT		1	1	1	1	1	1	1	1	1	1	1	1	

8-4. INDOOR UNIT HEAT EXCHANGER

18	E02 408 620	INDOOR HEAT EXCHANGER		1	1	1	1	1	1	1	1									
	E02 410 620	INDOOR HEAT EXCHANGER										1								
	E02 515 620	INDOOR HEAT EXCHANGER											1	1	1	1				
19	E02 151 666	UNION(GAS)		1	1	1	1	1	1	1	1									φ9.52
	E02 155 666	UNION(GAS)										1	1	1	1	1				φ12.7
	E02 151 667	UNION(LIQUID)		1	1	1	1	1	1	1	1	1	1	1	1	1				φ6.35

MU-07RV -E1 MU-07RV -E2 MU-07RV -E3 MU-07RV -E4
 MU-09RV -E1 MU-09RV -E2 MU-09RV -E3 MU-09RV -E4
 MU-12RV -E1 MU-12RV -E2 MU-12RV -E3 MU-12RV -E4
8-5. OUTDOOR UNIT STRUCTURAL PARTS



Part number that is circled is not shown in the illustration.

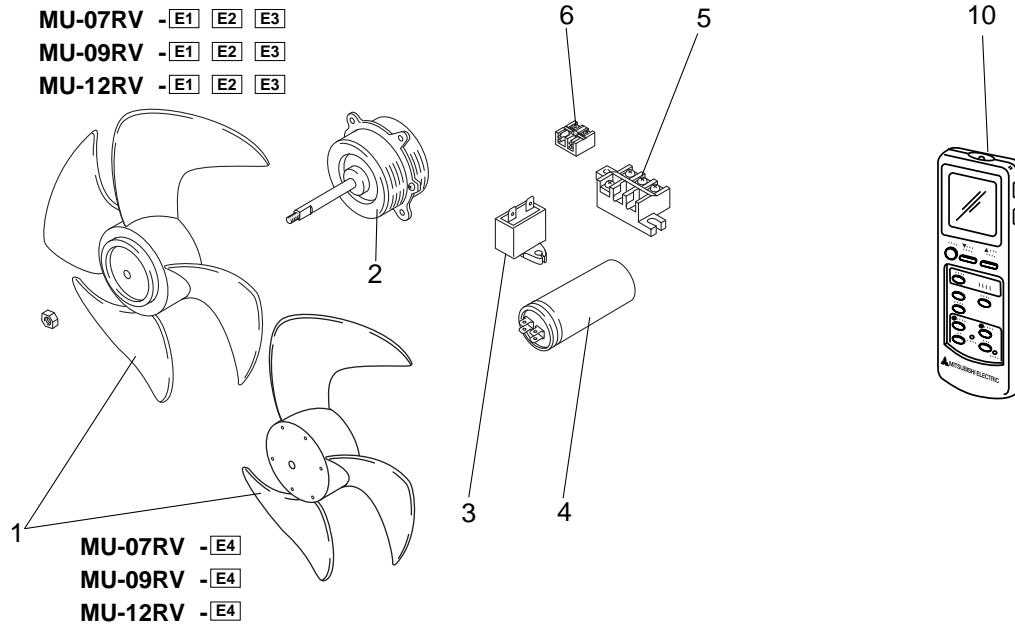
No.	Part No.	Part name	Symbol in Wiring Diagram	Q'ty/unit												Remarks
				MU-07RV-				MU-09RV-				MU-12RV-				
				E1	E2	E3	E4	E1	E2	E3	E4	E1	E2	E3	E4	
1	E02 336 630	OUTDOOR HEAT EXCHANGER		1	1	1	1	1	1	1	1	1	1	1	1	
2	E02 336 232	CABINET		1	1	1	1	1	1	1	1	1	1	1	1	
3	E02 336 521	GRILLE(OUT)		1	1	1	1	1	1	1	1	1	1	1	1	
4	E02 437 900	COMPRESSOR	MC	1	1											RH-135VGCT
	E02 589 900	COMPRESSOR	MC			1	1									RH-130VGCT
	E02 438 900	COMPRESSOR	MC					1	1							RH-145VGCT
	E02 408 900	COMPRESSOR	MC							1	1					RH-140VGCT
	E02 141 900	COMPRESSOR	MC									1	1			RH-231VHAT
	E02 594 900	COMPRESSOR	MC											1	1	RH-220VHAT
5	E02 336 506	COMPRESSOR RUBBER SET		3	3	3	3	3	3	3	3					3RUBBERS/SET
	E02 075 506	COMPRESSOR RUBBER SET										3	3	3	3	3RUBBERS/SET
6	E02 339 290	BASE		1	1	1	1	1	1	1	1					
	E02 340 290	BASE										1	1	1	1	
7	E02 339 661	STOP VALVE(GAS)		1	1	1	1	1	1	1	1					φ9.52
	E02 340 661	STOP VALVE(GAS)										1	1	1	1	φ12.7
8	E02 339 662	STOP VALVE(LIQUID)		1	1	1	1	1	1	1	1	1	1	1	1	φ6.35
9	E02 336 245	SERVICE PANEL		1	1	1	1	1	1	1	1	1	1	1	1	
10	E02 339 233	BACK PANEL		1	1	1	1	1	1	1	1					
	E02 440 233	BACK PANEL										1	1	1	1	
11	E02 336 515	MOTOR SUPPORT		1	1	1	1	1	1	1	1	1	1	1	1	
12	E02 336 297	TOP PANEL		1	1	1	1	1	1	1	1	1	1	1	1	
13	E02 339 936	CAPILLARY TUBE		1	1	1	1	1	1	1	1					φ3.0xφ1.4x600
	E02 412 936	CAPILLARY TUBE										1	1	1	1	φ3.0xφ1.6x600

MU-07RV -E1 MU-07RV -E2 MU-07RV -E3 MU-07RV -E4
 MU-09RV -E1 MU-09RV -E2 MU-09RV -E3 MU-09RV -E4
 MU-12RV -E1 MU-12RV -E2 MU-12RV -E3 MU-12RV -E4

8-6. OUTDOOR UNIT

ELECTRICAL PARTS AND FUNCTIONAL PARTS

MU-07RV -E1 E2 E3
 MU-09RV -E1 E2 E3
 MU-12RV -E1 E2 E3



8-7. REMOTE CONTROLLER

8-6. OUTDOOR UNIT ELECTRICAL PARTS AND FUNCTIONAL PARTS

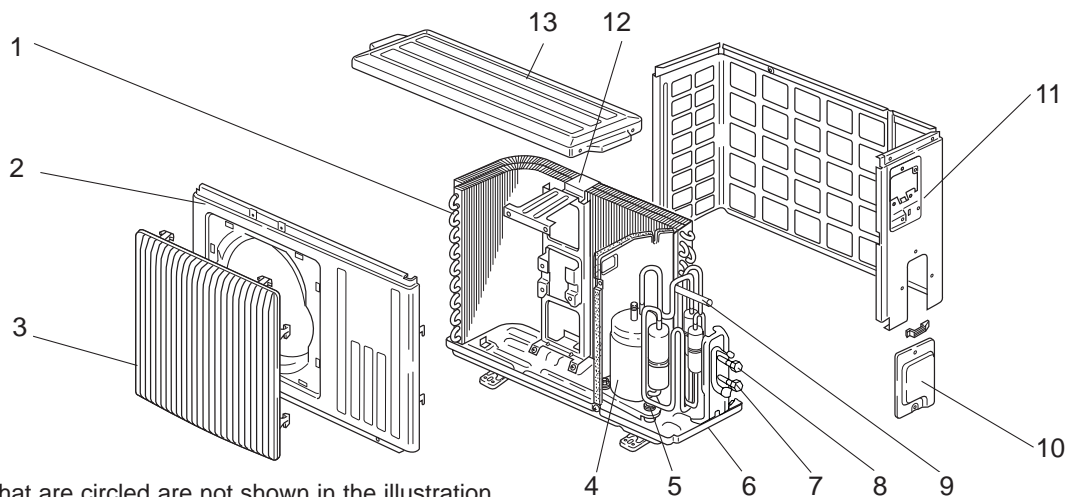
Part numbers that are circled are not shown in the illustration.

No.	Part No.	Part name	Symbol in Wiring Diagram	Q'ty/unit												Remarks
				MU-07RV-				MU-09RV-				MU-12RV-				
				E1	E2	E3	E4	E1	E2	E3	E4	E1	E2	E3	E4	
1	E02 336 501	PROPELLER FAN		1	1	1		1	1	1		1	1	1		
	E02 665 501	PROPELLER FAN					1					1				1
2	E02 437 301	OUTDOOR FAN MOTOR	MF	1	1	1		1	1	1						RA6V23-□□
	E02 676 301	OUTDOOR FAN MOTOR	MF					1				1				RA6V23-□□
	E02 439 301	OUTDOOR FAN MOTOR	MF									1	1	1		RA6V33-□□
	E02 677 301	OUTDOOR FAN MOTOR	MF												1	RA6V33-□□
3	E02 095 350	OUTDOOR FAN CAPACITOR	C2	1	1	1		1	1	1		1	1	1		1.5μF /440V AC
	E02 661 351	OUTDOOR FAN CAPACITOR	C2					1				1				1.5μF /440V AC
	E02 664 351	OUTDOOR FAN CAPACITOR	C2												1	2.0μF /440V AC
4	E02 085 353	COMPRESSOR CAPACITOR	C1	1	1	1		1	1	1						25μF /440V AC
	E02 694 353	COMPRESSOR CAPACITOR	C1					1				1				25μF /440V AC
	E02 079 353	COMPRESSOR CAPACITOR	C1									1	1	1		30μF /440V AC
	E02 696 353	COMPRESSOR CAPACITOR	C1												1	30μF /440V AC
5	E02 437 374	TERMINAL BLOCK	TB1	1	1	1		1	1	1		1	1	1		3P
	E02 466 375	TERMINAL BLOCK	TB1					1				1				1 3P
6	E02 438 374	TERMINAL BLOCK	TB2	1	1	1	1	1	1	1	1	1	1	1	1	2P
⑦	E02 001 340	COMPRESSOR CONTACTOR	52C	1				1				1				
	E02 466 340	COMPRESSOR CONTACTOR	52C		1	1	1		1	1	1		1	1	1	
⑧	E02 095 382	FUSE	F	1	1	1		1	1	1		1	1	1		250V/ 2A
⑨	E02 128 383	SURGE ABSORBER	DSAR	1	1	1	1	1	1	1	1	1	1	1	1	

8-7. REMOTE CONTROLLER

10	E02 408 426	REMOTE CONTROLLER		1				1				1				
----	-------------	-------------------	--	---	--	--	--	---	--	--	--	---	--	--	--	--

MUH-07RV -^{E1} MUH-07RV -^{E2} MUH-07RV -^{E3} MUH-07RV -^{E4}
 MUH-09RV -^{E1} MUH-09RV -^{E2} MUH-09RV -^{E3} MUH-09RV -^{E4}
 MUH-12RV -^{E1} MUH-12RV -^{E2} MUH-12RV -^{E3} MUH-12RV -^{E4}
8-8. OUTDOOR UNIT STRUCTURAL PARTS



Part numbers that are circled are not shown in the illustration.

No.	Part No.	Part name	Symbol in Wiring Diagram	Q'ty/unit												Remarks
				MUH-07RV-				MUH-09RV-				MUH-12RV-				
				E1	E2	E3	E4	E1	E2	E3	E4	E1	E2	E3	E4	
1	E02 440 630	OUTDOOR HEAT EXCHANGER		1	1	1	1	1	1	1	1					
	E02 442 630	OUTDOOR HEAT EXCHANGER										1	1	1	1	
2	E02 336 232	CABINET		1	1	1	1	1	1	1	1	1	1	1	1	
3	E02 336 521	GRILLE(OUT)		1	1	1	1	1	1	1	1	1	1	1	1	
4	E02 164 900	COMPRESSOR	MC	1	1											RH-135VGHT
	E02 589 900	COMPRESSOR	MC			1	1									RH-130VGCT
	E02 128 900	COMPRESSOR	MC					1	1							RH-174VGHT
	E02 593 900	COMPRESSOR	MC							1	1					RH-165VGCT
	E02 141 900	COMPRESSOR	MC									1	1			RH-231VHAT
	E02 594 900	COMPRESSOR	MC											1	1	RH-220VHAT
5	E02 336 506	COMPRESSOR RUBBER SET		3	3	3	3	3	3	3						3RUBBERS/SET
	E02 075 506	COMPRESSOR RUBBER SET									3	3	3	3	3	3RUBBERS/SET
6	E02 339 290	BASE		1	1	1	1	1	1	1	1					
	E02 340 290	BASE										1	1	1	1	
7	E02 339 661	STOP VALVE(GAS)		1	1	1	1	1	1	1	1					φ9.52
	E02 340 661	STOP VALVE(GAS)										1	1	1	1	φ12.7
8	E02 139 662	STOP VALVE(LIQUID)		1	1	1	1	1	1	1	1	1	1	1	1	φ6.35
9	E02 444 961	4-WAY VALVE		1	1	1	1	1	1	1	1	1	1	1	1	
10	E02 336 245	SERVICE PANEL		1	1	1	1	1	1	1	1	1	1	1	1	
11	E02 440 233	BACK PANEL		1	1	1	1	1	1	1	1	1	1	1	1	
12	E02 336 515	MOTOR SUPPORT		1	1	1	1	1	1	1	1					
	E02 442 515	MOTOR SUPPORT										1	1	1	1	
13	E02 336 297	TOP PANEL		1	1	1	1	1	1	1	1	1	1	1	1	
14	E02 159 936	CAPILLARY TUBE		2	2	2	2	2	2	2	2					φ3.0xφ1.4x800
	E02 156 936	CAPILLARY TUBE										2	2	2	2	φ3.0xφ1.4x500
	E02 339 936	CAPILLARY TUBE		1	1	1	1									φ3.0xφ1.4x600
	E02 441 936	CAPILLARY TUBE						1	1	1	1					φ3.0xφ1.4x550
	E02 412 936	CAPILLARY TUBE		1	1	1	1									φ3.0xφ1.6x600
	E02 134 937	CAPILLARY TUBE						1	1	1	1					φ3.0xφ1.6x400
	E02 134 936	CAPILLARY TUBE										1	1	1	1	φ3.0xφ1.6x700
	E02 442 936	CAPILLARY TUBE										1	1	1	1	φ3.0xφ1.8x300
15	E02 154 642	CHECK VALVE		1	1	1	1	1	1	1	1	1	1	1	1	

MUH-07RV -E1 MUH-07RV -E2 MUH-07RV -E3 MUH-07RV -E4
 MUH-09RV -E1 MUH-09RV -E2 MUH-09RV -E3 MUH-09RV -E4
 MUH-12RV -E1 MUH-12RV -E2 MUH-12RV -E3 MUH-12RV -E4

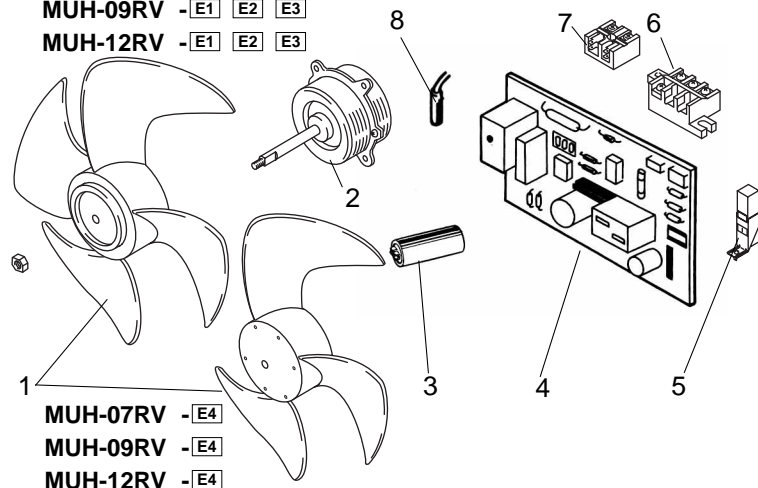
8-9. OUTDOOR UNIT

ELECTRICAL PARTS AND FUNCTIONAL PARTS

MUH-07RV -E1 E2 E3

MUH-09RV -E1 E2 E3

MUH-12RV -E1 E2 E3



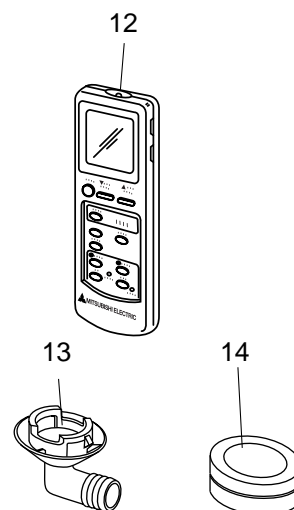
MUH-07RV -E4

MUH-09RV -E4

MUH-12RV -E4

8-10. ACCESSORY AND

REMOTE CONTROLLER



8-9. OUTDOOR UNIT ELECTRICAL PARTS AND FUNCTIONAL PARTS

Part numbers that are circled are not shown in the illustration.

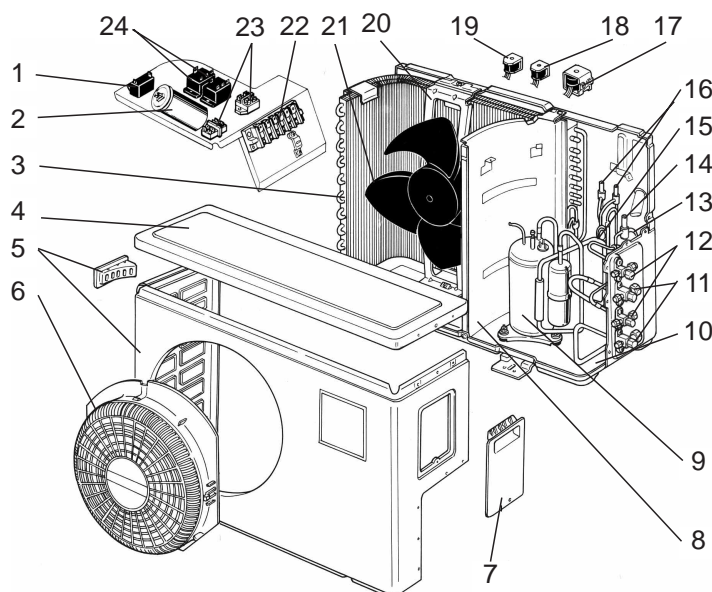
No.	Part No.	Part name	Symbol in Wiring Diagram	Q'ty/unit												Remarks
				MUH-07RV-				MUH-09RV-				MUH-12RV-				
				E1	E2	E3	E4	E1	E2	E3	E4	E1	E2	E3	E4	
1	E02 336 501	PROPELLER FAN		1	1	1		1	1	1		1	1	1		
	E02 665 501	PROPELLER FAN					1				1				1	
2	E02 440 301	OUTDOOR FAN MOTOR	MF	1	1	1		1	1	1						RA6V23-□□
	E02 671 301	OUTDOOR FAN MOTOR	MF				1				1					RA6V23-□□
	E02 442 301	OUTDOOR FAN MOTOR	MF									1	1	1		RA6V33-□□
	E02 672 301	OUTDOOR FAN MOTOR	MF												1	RA6V33-□□
3	E02 085 353	COMPRESSOR CAPACITOR	C1	1	1	1		1	1	1						25μF /440V AC
	E02 694 353	COMPRESSOR CAPACITOR	C1				1				1					25μF /440V AC
	E02 079 353	COMPRESSOR CAPACITOR	C1									1	1	1		30μF /440V AC
	E02 696 353	COMPRESSOR CAPACITOR	C1												1	30μF /440V AC
4	E02 440 451	DEICER P.C. BOARD		1	1	1		1	1	1		1	1	1		
	E02 679 451	DEICER P.C. BOARD					1				1					
	E02 699 451	DEICER P.C. BOARD													1	
5	E02 128 383	SURGE ABSORBER	DSAR	1	1	1	1	1	1	1	1	1	1	1	1	
6	E02 437 374	TERMINAL BLOCK	TB1	1	1	1		1	1	1		1	1	1		3P
	E02 466 375	TERMINAL BLOCK	TB1				1				1				1	3P
7	E02 440 374	TERMINAL BLOCK	TB2	1	1	1		1	1	1		1	1	1		2P
	E02 697 374	TERMINAL BLOCK	TB2				1				1				1	2P
8	E02 289 310	DEFROST THERMISTOR	RT61	1	1	1		1	1	1						
	E02 697 310	DEFROST THERMISTOR	RT61				1				1					
	E02 440 310	DEFROST THERMISTOR	RT61									1	1	1		
	E02 699 310	DEFROST THERMISTOR	RT61												1	
⑨	E02 440 490	R. V. COIL	21S4	1	1	1	1	1	1	1	1	1	1	1	1	
⑩	E02 095 382	FUSE	F61	1	1	1	1	1	1	1	1	1	1	1	1	250V 2A
⑪	E02 085 385	VARISTOR	NR61	1	1	1	1	1	1	1	1	1	1	1	1	

8-10. ACCESSORY AND REMOTE CONTROLLER

12	E02 430 426	REMOTE CONTROLLER		1				1				1				
13	E02 440 704	DRAIN SOCKET		1				1				1				
	E02 444 704	DRAIN SOCKET			1	1	1		1	1	1		1	1	1	
14	E02 440 705	DRAIN CAP		2	2	2	2	2	2	2	2	2	2	2	2	2PCS/SET

MUX-10RV -**E1** MUX-10RV -**E2**

8-11. OUTDOOR UNIT STRUCTURAL PARTS, ELECTRICAL PARTS AND FUNCTIONAL PARTS



8-12. REMOTE CONTROLLER



When servicing, cut the tube to the proper length as shown in the REFRIGERANT SYSTEM DIAGRAM.

8-11. OUTDOOR UNIT

STRUCTURAL PARTS, ELECTRICAL PARTS AND FUNCTIONAL PARTS

Part numbers that are circled are not shown in the illustration.

No.	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty / unit		Remarks
				MUX-10RV-		
				<div>E1</div>	<div>E2</div>	
1	M21 N71 350	OUTDOOR FAN CAPACITOR	C2	1	1	1.5μF440V AC
2	T2W 304 353	COMPRESSOR CAPACITOR	C1	1	1	17μF440V AC
3	T2W 459 630	OUTDOOR HEAT EXCHANGER		1	1	
4	M21 478 297	TOP PANEL		1	1	
5	T2W E03 232	CABINET		1	1	
6	T2W 418 521	OUTER NOZZLE		1	1	
7	T2W E03 245	SERVICE PANEL		1	1	
8	T2W E03 293	SEPARATOR		1	1	
9	T92 514 200	COMPRESSOR	MC	1	1	KH-134VLL
10	T2W E03 290	BASE ASSEMBLY		1	1	
11	T2W E42 661	STOP VALVE (GAS)		2	2	ϕ9.52
12	T2W E42 662	STOP VALVE (LIQUID)		2	2	ϕ6.35
13	M21 K08 936	CAPILLARY TUBE (ϕ3.0×ϕ1.6×1200)		1	1	ϕ3.0×ϕ1.6×1000
14	M21 195 648	SOLENOID VALVE		1	1	
15	M21 463 936	CAPILLARY TUBE (ϕ3.0×ϕ1.4×1900)		1	1	ϕ3.0×ϕ1.4×400 (2PCS), ϕ3.0×ϕ1.4×200
16	M21 179 645	SOLENOID VALVE		2	2	
17	T2W E42 389	BYPASS VALVE SOLENOID COIL	21R	1	1	
18	T2W E39 389	SOLENOID COIL (B)	21R2	1	1	
19	T2W E42 388	SOLENOID COIL (A)	21R1	1	1	
20	T2W 416 515	MOTOR SUPPORT		1	1	
21	M21 601 501	PROPELLER FAN		1	1	
22	T2W E60 375	TERMINAL BLOCK	TB	1	1	L N
23	M21 370 378	TERMINAL BLOCK	TB2,TB3	2	2	
24	T2W 459 342	COMPRESSOR CONTACTOR	52C1,52C2	2	2	
25	T2W E42 301	OUTDOOR FAN MOTOR	MF	1	1	RA6V22-□□
26	T2W E03 330	OVERCURRENT RELAY	51C	1	1	
27	M21 B00 340	RELAY	X1,X2	2	2	G4F11123T
28	T2W E60 376	TERMINAL BLOCK	TB	1	1	2,1,2,1
29	T2W A79 382	FUSE	F12,F13	2	2	2A 250V

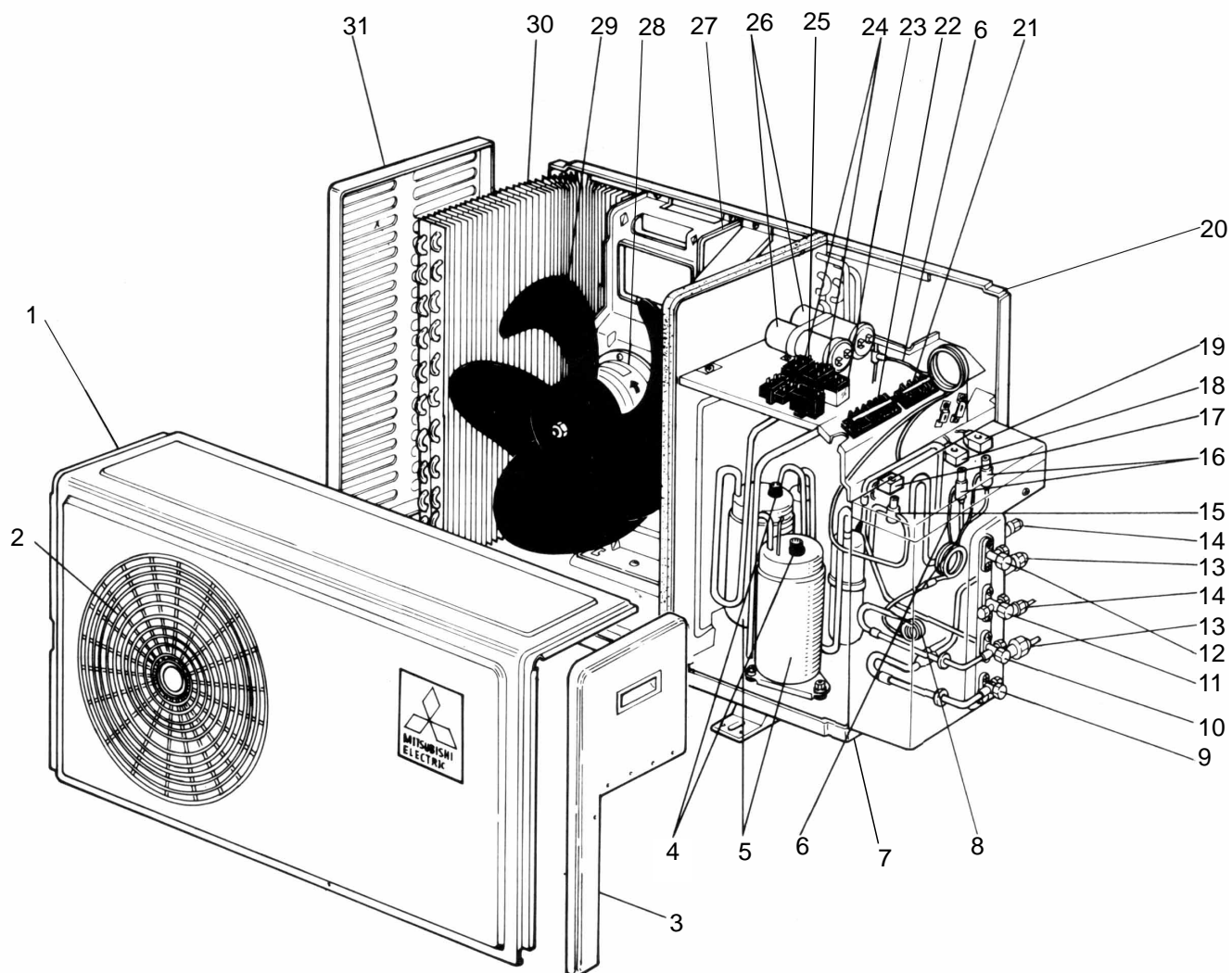
8-12. REMOTE CONTROLLER

30	E02 408 426	REMOTE CONTROLLER		2		
----	-------------	-------------------	--	---	--	--

MUX-18RV -E1 MUX-18RV -E2

8-13. OUTDOOR UNIT

STRUCTURAL PARTS, ELECTRICAL PARTS AND FUNCTIONAL PARTS



8-14. REMOTE CONTROLLER



MUX-18RV -^[E1] MUX-18RV -^[E2]

8-13. OUTDOOR UNIT

STRUCTURAL PARTS, ELECTRICAL PARTS AND FUNCTIONAL PARTS

Part numbers that are circled are not shown in the illustration.

No.	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty / unit		Remarks
				MUX-18RV-		
				E1	E2	
1	T2W 457 232	CABINET		1	1	
2	T2W 466 509	OUTER NOZZLE		1	1	
3	M21 K59 245	SERVICE PANEL		1	1	
4	T2W E03 330	OVERCURRENT RELAY	51C1,51C2	2	2	G4F11123T
5	T92 514 200	COMPRESSOR	MC1,MC2	2	2	KH-134VLL
6	M21 S07 936	CAPILLARY TUBE (φ3.0Xφ1.6X1400)		3	3	φ3.0×φ1.6×1000 φ3.0×φ1.6×1100 (2PCS)
7	T2W E06 290	BASE		1	1	
8	M21 B93 936	CAPILLARY TUBE (φ3.0Xφ1.4X1100)		1	1	φ3.0×φ1.4×1,100
9	T2W 689 667	STOP VALVE(GAS)		1	1	φ9.52
10	T2W 689 665	STOP VALVE(LIQUID)		1	1	φ6.35
11	M21 K59 661	STOP VALVE(GAS)		1	1	φ9.52
12	M21 K59 662	STOP VALVE(LIQUID)		1	1	φ6.35
13	M21 SJ4 667	UNION(3/8)		2	2	
14	M21 L01 666	UNION(1/4)		2	2	
15	M21 195 648	SOLENOID VALVE		1	1	
16	M21 179 645	SOLENOID VALVE		2	2	
17	T2W A23 490	SOLENOID COIL	21R	1	1	
18	T2W E41 489	SOLENOID COIL(B)	21R1	1	1	
19	T2W E41 488	SOLENOID COIL(C)	21R2	1	1	
20	T2W E41 291	BACK PANEL		1	1	
21	T2W E60 375	TERMINAL BLOCK	TB	1	1	A, B UNIT
22	T2W E60 376	TERMINAL BLOCK	TB	1	1	POWER SUPPLY
23	T2W 813 342	FAN MOTOR RELAY	X11,X12	2	2	LY-2F
24	T2W 459 342	COMPRESSOR CONTACTOR	52C1,52C2	2	2	
25	M21 W16 350	OUTDOOR FAN CAPACITOR	C3	1	1	3μF 440V AC
26	T2W 304 353	COMPRESSOR CAPACITOR	C1,2	2	2	17μF 440V AC
27	M21 B19 515	MOTOR SUPPORT		1	1	
28	T2W A73 301	OUTDOOR FAN MOTOR	MF	1	1	RA6V50 - □□
29	M21 JN0 501	PROPELLER FAN		1	1	
30	T2W A74 630	OUTDOOR HEAT EXCHANGER		1	1	
31	M21 B57 249	SIDE PANEL		1	1	
32	M21 G46 936	CAPILLARY TUBE (φ3.0Xφ1.6X800)		1	1	φ3.0×φ1.6×300
33	T2W E61 377	TERMINAL BLOCK	TB	1	1	C UNIT
34	M21 370 378	TERMINAL BLOCK	TB2,TB3	2	2	
35	M21 B00 340	RELAY	X1,X2,52CA	3	3	
36	T2W A79 382	FUSE	F12,F13,F14	3	3	2A 250V

When servicing, cut the tube to the proper length as shown in the REFRIGERANT SYSTEM DIAGRAM.

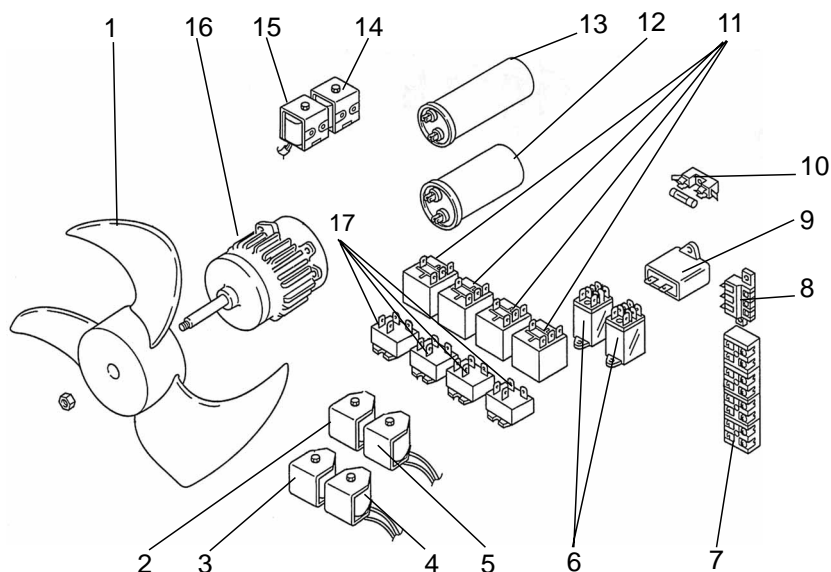
8-14. REMOTE CONTROLLER

37	E02 408 426	REMOTE CONTROLLER		2	
----	-------------	-------------------	--	---	--

MUX-24RV -E1 MUX-24RV -E2

8-15. OUTDOOR UNIT

ELECTRICAL PARTS AND FUNCTIONAL PARTS



8-16. REMOTE CONTROLLER



8-15. OUTDOOR UNIT ELECTRICAL PARTS AND FUNCTIONAL PARTS

Part number that is circled is not shown in the illustration.

No.	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty / unit		Remarks
				MUX-24RV-		
				E1	E2	
1	M21 17A 501	PROPELLER FAN		1	1	
2	T2W E44 389	SOLENOID COIL (B)	21R2	1	1	
3	T2W E38 389	SOLENOID COIL (D)	21R4	1	1	
4	T2W E38 388	SOLENOID COIL (C)	21R3	1	1	
5	T2W E44 388	SOLENOID COIL (A)	21R1	1	1	
6	T2W 813 342	FAN MOTOR RELAY	X11,X12	2	2	LY-2F
7	T2W E44 375	TERMINAL BLOCK	TB1,TB2 TB3,TB4	4	4	
8	T2W E62 375	TERMINAL BLOCK	TB	1	1	
9	T2W E06 353	OUTDOOR FAN CAPACITOR	C11	1	1	3μF/440V AC
10	T2W E08 381	FUSE	F	1	1	3.15A 250V AC
11	T2W 459 342	COMPRESSOR RELAY	52C1,52C2 52C3,52C4	4	4	200/240V AC
12	T2W A62 353	COMPRESSOR CAPACITOR	C1	1	1	30μF/420V AC
13	T2W 779 353	COMPRESSOR CAPACITOR	C2	1	1	25μF/420V AC
14	T2W E37 388	SOLENOID COIL	21RA	1	1	
15	T2W E37 389	SOLENOID COIL	21RB	1	1	
16	T2W E44 301	OUTDOOR FAN MOTOR	MF	1	1	RA6V25-□□
17	M21 B00 340	RELAY	X1,X2,X3,X4	4	4	G4F11123T-MT
18	M21 020 378	TERMINAL BLOCK	TB5,6,7,8,9,10	6	6	

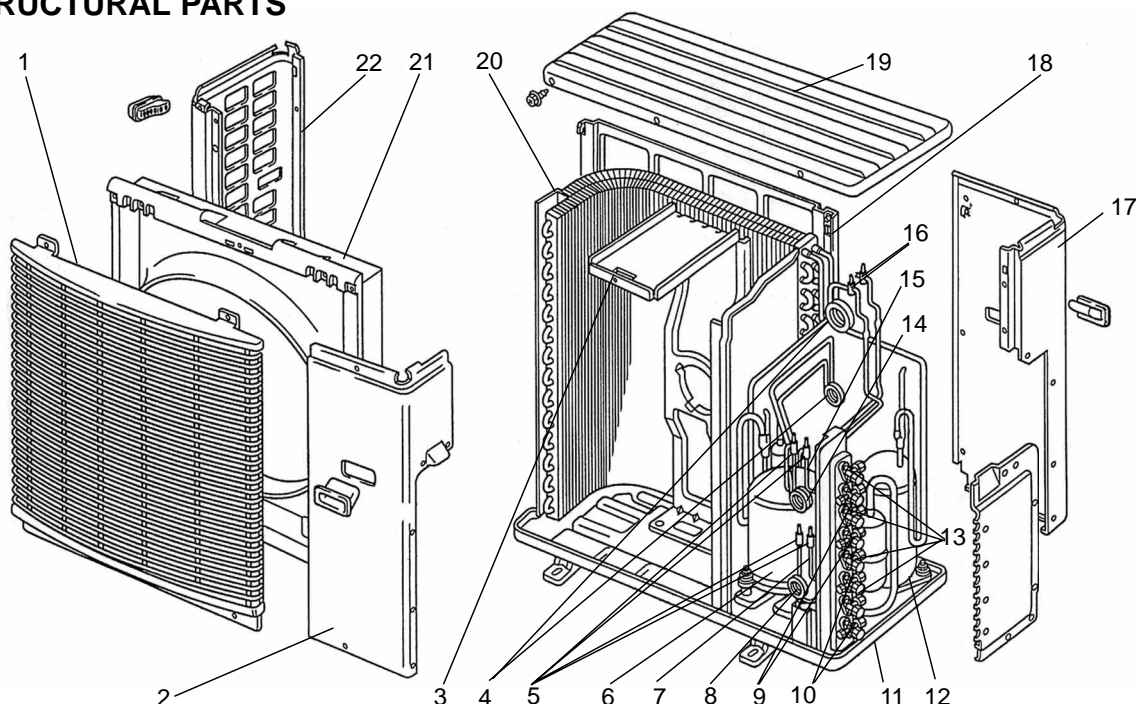
8-16. REMOTE CONTROLLER

19	E02 408 426	REMOTE CONTROLLER		3		
----	-------------	-------------------	--	---	--	--

MUX-24RV -^[E1] MUX-24RV -^[E2]

8-17. OUTDOOR UNIT

STRUCTURAL PARTS



Part number that is circled is not shown in the illustration.

Part Number that is circled is circled in the illustration.

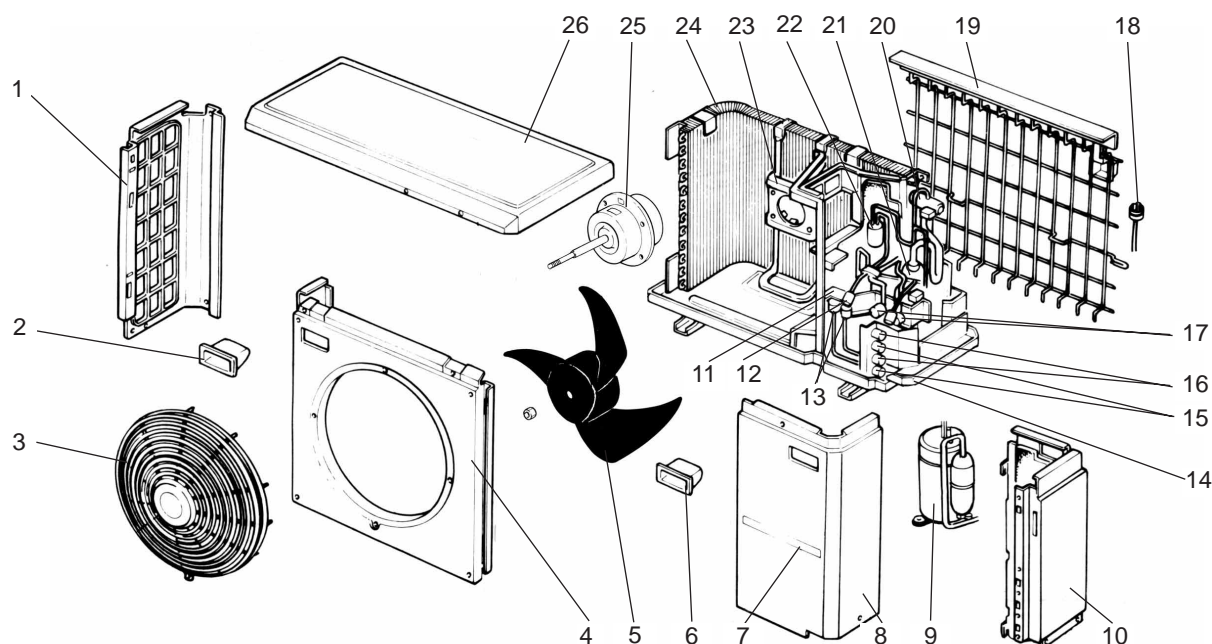
No.	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty / unit		Remarks
				MUX-24RV-		
				E1	E2	
1	T2W E44 521	OUTER NOZZLE		1	1	
2	T2W E44 245	SERVICE PANEL		1	1	
3	M21 51E 515	MOTOR SUPPORT		1	1	
→ 4	M21 AJ2 936	CAPILLARY TUBE (ϕ3.0×ϕ1.6×1100)		2	2	ϕ3.0×ϕ1.6×1000
5	M21 179 645	SOLENOID VALVE (A,B)		4	4	
6	T92 702 600	COMPRESSOR (C,D)	MC2	1	1	RH-174VGH
7	T2W E44 642	PIPE B S. V		1	1	
8	T2W E44 644	S. V HEADER B		1	1	
9	M21 00A 661	STOP VALVE (GAS)		2	2	ϕ9.52
10	M21 00L 661	STOP VALVE (GAS)		2	2	ϕ12.7
11	T2W E44 290	BASE		1	1	
12	T92 531 600	COMPRESSOR (A,B)	MC1	1	1	RH-231VHA
13	M21 21J 662	STOP VALVE (LIQUID)		4	4	ϕ6.35
14	T2W E44 643	S. V HEADER A		1	1	
15	T2W E44 641	PIPE A S. V		1	1	
16	T2W E44 648	SOLENOID VALVE		2	2	
17	T2W E44 248	REAR PANEL		1	1	
18	T2W E44 523	REAR GUARD		1	1	
19	T2W E44 297	TOP PANEL		1	1	
20	T2W E44 630	OUTDOOR HEAT EXCHANGER		1	1	Including Capillary TUBE (ϕ3.0×ϕ1.8×260, ϕ3.0×ϕ1.6×400)
21	T2W E44 232	FRONT PANEL		1	1	
22	T2W E44 249	SIDE PANEL		1	1	
→ 23	M21 K47 936	CAPILLARY TUBE (ϕ3.0×ϕ1.6×800)		4	4	ϕ3.0×ϕ1.6×420 (2PCS) ϕ3.0×ϕ1.6×650 (2PCS)

When servicing, cut the tube to the proper length as shown in the REFRIGERANT SYSTEM DIAGRAM.

MXZ-18RV -^[E1] MXZ-18RV -^[E2]

8-18. OUTDOOR UNIT

STRUCTURAL PARTS AND FUNCTIONAL PARTS



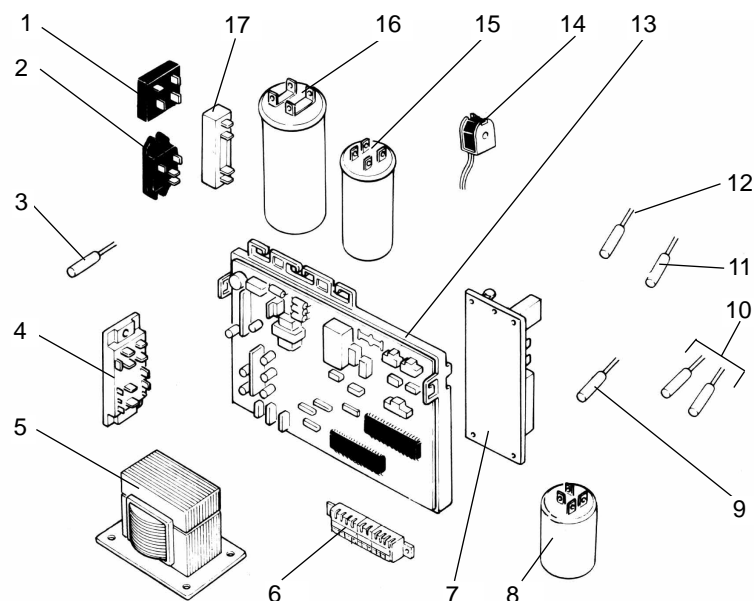
Part numbers that are circled are not shown in the illustration.

No.	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty / unit		Remarks
				MXZ-18RV-		
				E1	E2	
1	R01 A00 662	SIDE PANEL		1	1	
2	T2W A70 009	HANDLE		2	2	
3	M21 LL4 521	FAN GUARD		1	1	
4	M21 LL4 232	FRONT PANEL		1	1	
5	M21 LL4 501	PROPELLER FAN		1	1	
6	T2W A69 009	HANDLE		1	1	
7	T2W E65 212	LABEL		1	1	
8	M21 LL4 245	SERVICE PANEL		1	1	
9	T92 669 452	COMPRESSOR	MC	1	1	RHV - 207FEM
10	M21 LL4 248	REAR PANEL		1	1	
11	M21 LL4 488	EXPANSION VALVE (COIL)	LEV. A	1	1	
12	M21 LL4 487	EXPANSION VALVE (COIL)	LEV. B	1	1	
13	M21 LL4 646	EXPANSION VALVE		2	2	
14	M21 SJ4 290	BASE ASSEMBLY		1	1	
15	M21 SJ4 666	UNION (1/4F)		2	2	
16	M21 SJ4 667	UNION (3/8F)		2	2	
17	T2W A64 668	BALL VALVE (3/8)		2	2	
18	T2W E41 646	HIGH PRESSURE SWITCH	HPS	1	1	
19	T2W E65 523	REAR GUARD		1	1	
20	T7W 250 403	4-WAY VALVE		1	1	
21	M21 LL4 939	ACCUMULATOR		1	1	
22	M21 LL4 938	MUFFLER		1	1	
23	T2W A70 515	MOTOR SUPPORT		1	1	
24	M21 SJ4 630	OUTDOOR HEAT EXCHANGER		1	1	
25	T2W E41 301	OUTDOOR FAN MOTOR	MF	1	1	RA6V50-□□
26	M21 LL4 297	TOP PANEL		1	1	
→27	M21 986 936	CAPILLARY TUBE (φ4.0×φ2.4×2000)		1	1	φ4.0×φ2.4×300 (2PCS) φ4.0×φ2.4×400 (3PCS)
→28	M21 L11 936	CAPILLARY TUBE (φ2.0×φ0.6×1000)		1	1	φ2.0×φ0.6×500

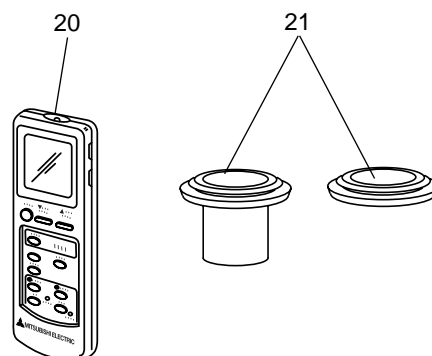
When servicing, cut the tube to the proper length as shown in the REFRIGERANT SYSTEM DIAGRAM.

MXZ-18RV -E1 MXZ-18RV -E2

8-19. OUTDOOR UNIT ELECTRICAL PARTS



8-20. ACCESSORY AND REMOTE CONTROLLER



8-19. OUTDOOR UNIT ELECTRICAL PARTS

Part numbers that are circled are not shown in the illustration.

No.	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty / unit		Remarks
				MXZ-18RV-		
				E1	E2	
1	T2W E22 341	DIODE MODULE	DS61	1	1	
2	M21 A19 447	DIODE MODULE	DS63	1	1	
3	T2W E41 309	FIN TEMPERATURE THERMISTOR	RT63	1	1	
4	M21 V47 443	POWER TRANSISTOR MODULE	TR	1	1	
5	T2W A70 337	REACTOR	L	1	1	
6	T2W E58 376	TERMINAL BLOCK	TB	2	2	3N
7	T2W E41 441	RELAY P.C. BOARD		1	1	
8	M21 LL4 424	NOISE FILTER	NF61	1	1	
9	T2W E55 309	DISCHARGE TEMPERATURE THERMISTOR	RT62	1	1	
10	T2W E41 306	GAS PIPE TEMPERATURE THERMISTOR	RT64,65	1	1	
11	T2W E41 308	DEFROST TEMPERATURE THERMISTOR	RT61	1	1	
12	T2W E41 307	SUCTION TEMPERATURE THERMISTOR	RT66, RT67	1	1	SUCTION EVAPORATION
13	T2W E58 451	ELECTRONIC CONTROL P.C. BOARD		1	1	
14	T2W E41 398	R.V. COIL	21S4	1	1	
15	T2W A70 357	POWER-FACTOR CAPACITOR	C61	1	1	1800μF 400V AC
16	T2W A70 356	SMOOTHING CAPACITOR	C67	1	1	100μF 400V AC
17	M21 U48 362	CURRENT-DETECTING RESISTOR	R65	1	1	
18	T2W E58 375	TERMINAL BLOCK	TB	1	1	LNPE
19	T2W E22 425	NOISE FILTER	NF62	1	1	

8-20. ACCESSORY AND REMOTE CONTROLLER

20	E02 430 426	REMOTE CONTROLLER		2		
21	T2W E59 704	DRAIN SOCKET ASSEMBLY		1	1	DRAIN SOCKET \times 1 DRAIN CAP \times 2



HEAD OFFICE: MITSUBISHI DENKI BLDG., 2-2-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN

© Copyright 2000 MITSUBISHI ELECTRIC ENGINEERING CO.,LTD

Distributed in Mar. 2002. No.OB252 REVISED EDITION C 13

Distributed in Jan. 2002. No.OB252 REVISED EDITION B 273

Distributed in Mar. 2001. No.OB252 REVISED EDITION A 249

Distributed in Mar. 2000. No.OB252 543

Made in Japan

New publication, effective Mar. 2002

Specifications subject to change without notice.