MITSUBISHI ELECTRIC

SPLIT-TYPE, AIR CONDITIONER

Changes for the Better

Revision A:
- MUX-A22WV -E1 can be connected to MSC-A07/A12YV -E1.
- PARTS LIST has partially modified.

Please void OB318.

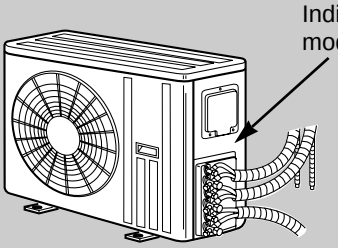
No. OB318
REVISED EDITION-A

HFC utilized
R410A

SERVICE MANUAL

Multi system type
Model
MUX-A22WV -E1

MUX-A22WV -E1



NOTE:
- This manual describes technical data of outdoor unit.
- As for indoor unit MSC-A07WV -E1 or MSC-A12WV -E1, refer to the service manual OB307 REVISED EDITION-C.
- As for indoor unit MSC-A07YV -E1 or MSC-A12YV -E1, refer to the service manual OB329.

CONTENTS

CE

Revision A:
•MUX-A22WV -E1 can be connected to MSC-A07/A12YV -E1.
•Parts No. has been changed due to the color change of outdoor unit parts.
WHITE➔NEW WHITE (Brighter)

1 TECHNICAL CHANGES

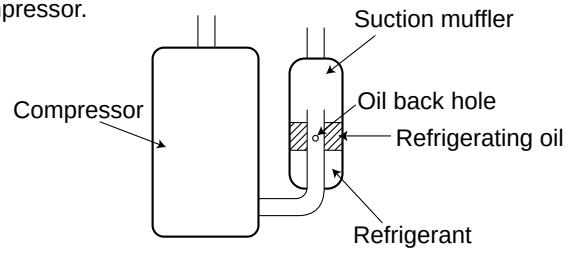
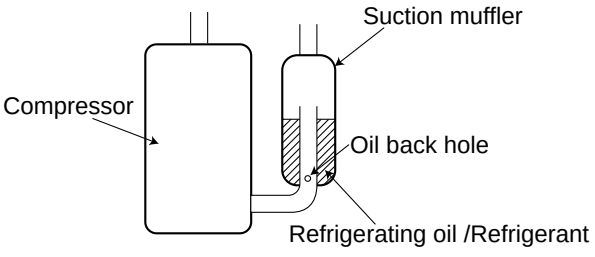
INFORMATION FOR THE AIR CONDITIONER WITH R410A REFRIGERANT

- This room air conditioner adopts an HFC refrigerant (R410A) which never destroys the ozone layer.
- Pay particular attention to the following points, though the basic installation procedure is same as that for R22 conditioners.

① As R410A has working pressure approximate 1.6 times as high as that of R22, some special tools and piping parts/ materials are required. Refer to the table below.
② Take sufficient care not to allow water and other contaminations to enter the R410A refrigerant during storage and installation, since it is more susceptible to contaminations than R22.
③ For refrigerant piping, use clean, pressure-proof parts/materials specifically designed for R410A. (Refer to 2. Refrigerant piping.)
④ Composition change may occur in R410A since it is a mixed refrigerant. When charging, charge liquid refrigerant to prevent composition change.

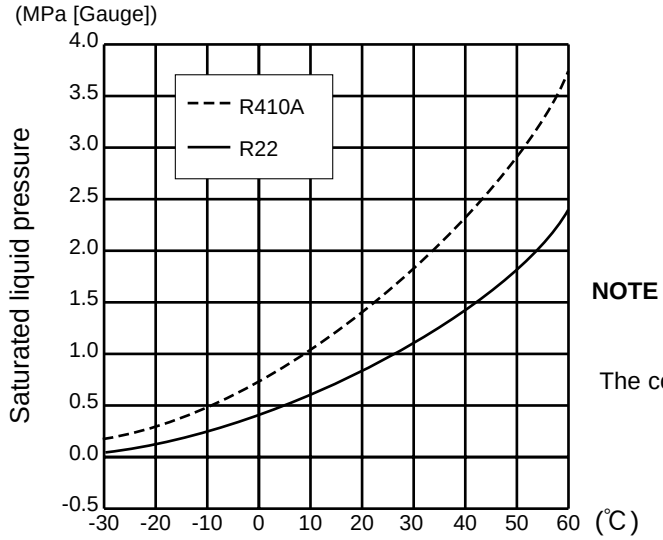
		New refrigerant	Previous refrigerant
Refrigerant	Refrigerant	R410A	R22
	Composition (Ratio)	HFC-32: HFC-125 (50%:50%)	R22 (100%)
	Refrigerant handling	Pseudo-azeotropic refrigerant	Single refrigerant
	Chlorine	Not included	Included
	Safety group (ASHRAE)	A1/A1	A1
	Molecular weight	72.6	86.5
	Boiling point (℃)	-51.4	-40.8
	Steam pressure [25℃](Mpa)	1.557	0.94
	Saturated steam density [25℃](Kg/m³)	64	44.4
	Combustibility	Non combustible	Non combustible
	ODP ※1	0	0.055
	GWP ※2	1730	1700
	Refrigerant charge method	From liquid phase in cylinder	Gas phase
	Additional charge on leakage	Possible	Possible
Refrigerating oil	Kind	Incompatible oil	Compatible oil
	Color	Non	Light yellow
	Smell	Non	Non

※1 :Ozone Destruction Parameter : based on CFC-11
※2 :Global Warmth Parameter : based on CO_2

	New Specification	Current Specification
Compressor	The incompatible refrigerating oil easily separates from refrigerant and is in the upper layer inside the suction muffler. Raising position of the oil back hole enables to back the refrigerating oil of the upper layer to flow back to the compressor. 	Since refrigerant and refrigerating oil are compatible each, refrigerating oil backs to the compressor through the lower position oil back hole. 

NOTE : The unit of pressure has been changed to MPa on the international system of units(SI unit system).
The conversion factor is: **1(MPa [Gauge]) =10.2(kgf/㎠ [Gauge])**

Conversion chart of refrigerant temperature and pressure



NOTE : The unit of pressure has been changed to MPa on the international system of units(SI unit system).

The conversion factor is: **1(MPa [Gauge]) =10.2(kgf/㎠ [Gauge])**

1.Tools dedicated for the air conditioner with R410A refrigerant

The following tools are required for R410A refrigerant. Some R22 tools can be substituted for R410A tools.
The diameter of the service port on the stop valve in outdoor unit has been changed to prevent any other refrigerant being charged into the unit. Cap size has been changed from 7/16 UNF with 20 threads to 1/2 UNF with 20 threads.

R410A tools	Can R22 tools be used?	Description
Gauge manifold	No	R410A has high pressures beyond the measurement range of existing gauges. Port diameters have been changed to prevent any other refrigerant from being charged into the unit.
Charge hose	No	Hose material and cap size have been changed to improve the pressure resistance.
Gas leak detector	No	Dedicated for HFC refrigerant.
Torque wrench	Yes	6.35 mm and 9.52 mm
	No	12.7 mm
Flare tool	Yes	Clamp bar hole has been enlarged to reinforce the spring strength in the tool.
Flare gauge	New	Provided for flaring work (to be used with R22 flare tool).
Vacuum pump adapter	New	Provided to prevent the back flow of oil. This adapter enables you to use vacuum pumps.
Electronic scale for refrigerant charging	New	It is difficult to measure R410A with a charging cylinder because the refrigerant bubbles due to high pressure and high-speed vaporization

No : Not Substitutable for R410A Yes : Substitutable for R410A

2.Refrigerant piping

① Specifications

Use the refrigerant pipes that meet the following specifications.

Pipe	Outside diameter mm	Wall thickness	Insulation material
For liquid	6.35	0.8 mm	Heat resisting foam plastic Specific gravity 0.045 Thickness 8 mm
For gas	9.52	0.8 mm	
	12.7	0.8 mm	

• Use a copper pipe or a copper-alloy seamless pipe with a thickness of 0.8 mm. Never use any pipe with a thickness less than 0.8mm, as the pressure resistance is insufficient.

② Flaring work and flare nut

Flaring work for R410A pipe differs from that for R22 pipe.
For details of flaring work, refer to Installation manual “FLARING WORK”.

Pipe diameter	Dimension of flare nut	
mm	R410A	R22
6.35	17	17
9.52	22	22
12.7	26	24

3.Refrigerant oil

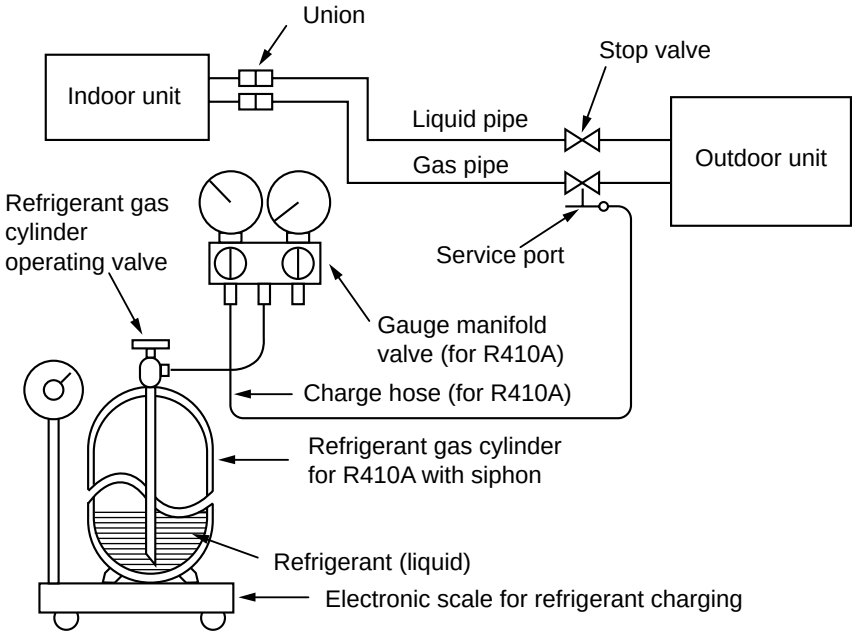
Apply the special refrigeration oil (accessories: packed with indoor unit) to the flare and the union seat surfaces.

4.Air purge

- Do not discharge the refrigerant into the atmosphere.
  Take care not to discharge refrigerant into the atmosphere during installation, reinstallation, or repairs to the refrigerant circuit.
- Use the vacuum pump for air purging for the purpose of environmental protection.

5.Additional charge

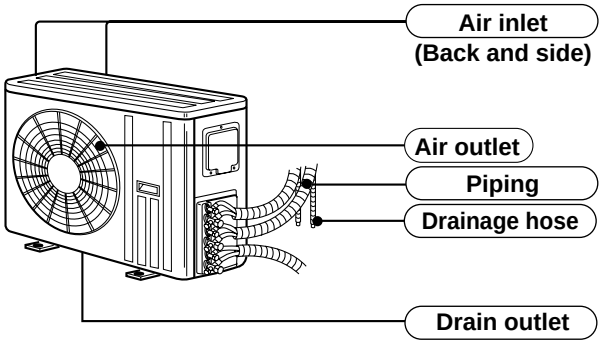
For additional charging, charge the refrigerant from liquid phase of the gas cylinder.
If the refrigerant is charged from the gas phase, composition change may occur in the refrigerant inside the cylinder and the outdoor unit. In this case, ability of the refrigerating cycle decreases or normal operation can be impossible. However, charging the liquid refrigerant all at once may cause the compressor to be locked. Thus, charge the refrigerant slowly.



2 PART NAMES AND FUNCTIONS

OUTDOOR UNIT

MUX-A22WV-E1



3 INDOOR / OUTDOOR CORRESPONDENCE TABLE

MUX-A22WV - E1

	OUTDOOR UNIT
	MUX-A22WV- E1
Combination of the connectable indoor units	A: MSC-A12WV-E1 or MSC-A12YV-E1 B: MSC-A07WV-E1 or MSC-A07YV-E1 C:

4 SPECIFICATION

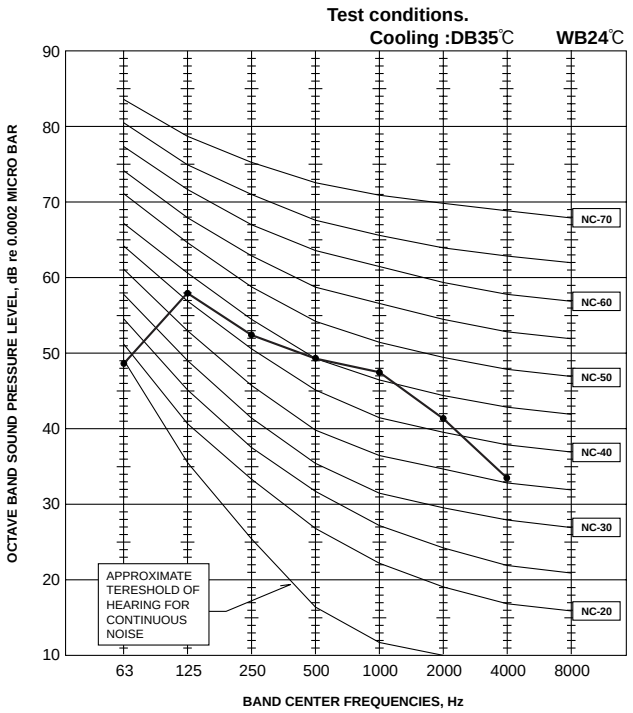
Outdoor model			**MUX-A22WV -** E1				
Function			Cooling				
Outdoor unit power supply			Single phase 230V,50Hz				
Indoor unit No.			Single A	Single B or C	Double A+B or A+C	Double B+C	Triple A+B+C
Capacity	Capacity	kW	3.5	2.4	3.5+2.4	1.45×2	3.4+1.45×2
	Dehumidification	ℓ /h	1.4	0.9	1.4+0.9	0.4	1.4+0.4
	Outdoor air flow	m³ /h	2,460				
Electrical data	Power outlet	A	20				
	Running current	A	5.73	3.64	8.92	3.69	8.84
	Power input	W	1,280	815	1,975	830	1,980
	Auxiliary heater	A(kW)	—				
	Power factor	%	97.1	97.3	96.3	97.8	97.4
	Starting current	A	48				
	Compressor motor current	A	5.02	2.99	8.01	2.99	8.01
	Fan motor current	A	0.57				
Coefficient of performance (C.O.P)			2.65	2.82	2.88	3.22	3.01
Compressor	Model		MC1 : RN145VHSHT, MC2 : RN092VHSHT				
	Output	W	MC1 : 1,000, MC2 : 600				
	Winding resistance (at 20℃)	Ω	MC1 : C-R 2.43, C-S 3.80 , MC2 : C-R 3.87, C-S 0.14				
Fan motor	Model		RA6V60-GA				
	Winding resistance (at 20℃)	Ω	WHT-BLK 90 BLK-RED 146				
	Dimensions W×H×D	mm	840×640×330				
	Weight	kg	67				
Special remarks	Sound level	dB	52				
	Fan speed	rpm	730				
	Fan speed regulator		1				
	Refrigerant filling capacity (R410A)	kg	0.85 (Room A) 0.85 (Room B+C)				
	Refrigerating oil (Model)	cc	MC1 : 620 (NEO22), MC2 : 350 (NEO22)				

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

5 NOISE CRITERIA CURVES

MUX-A22WV - E1

FUNCTION	SPL(dB(A))	LINE
COOL	52	●—●

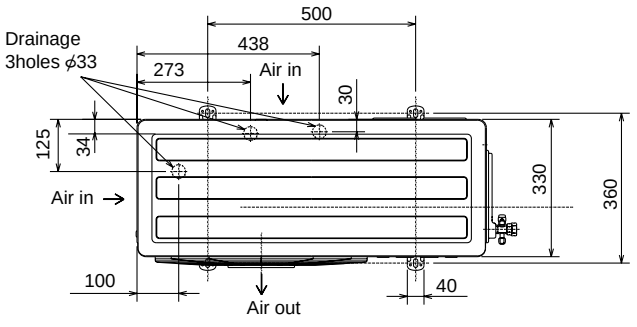


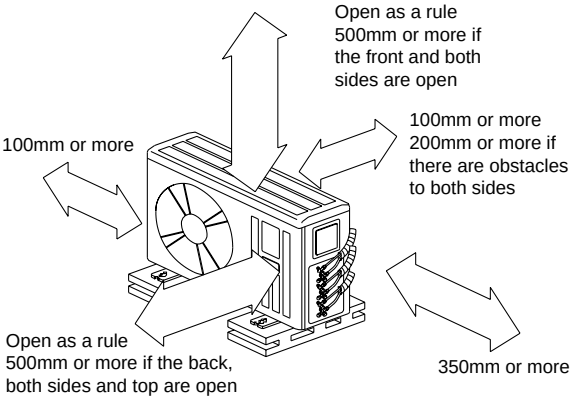
6 OUTLINES AND DIMENSIONS

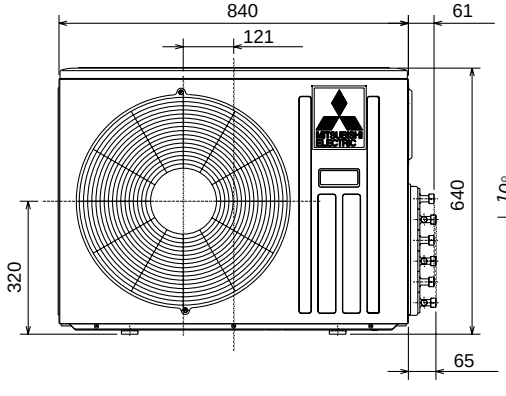
MUX-A22WV- E1

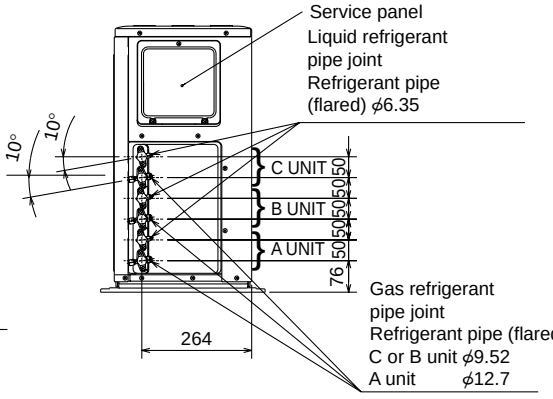
Unit: mm

OUTDOOR UNIT







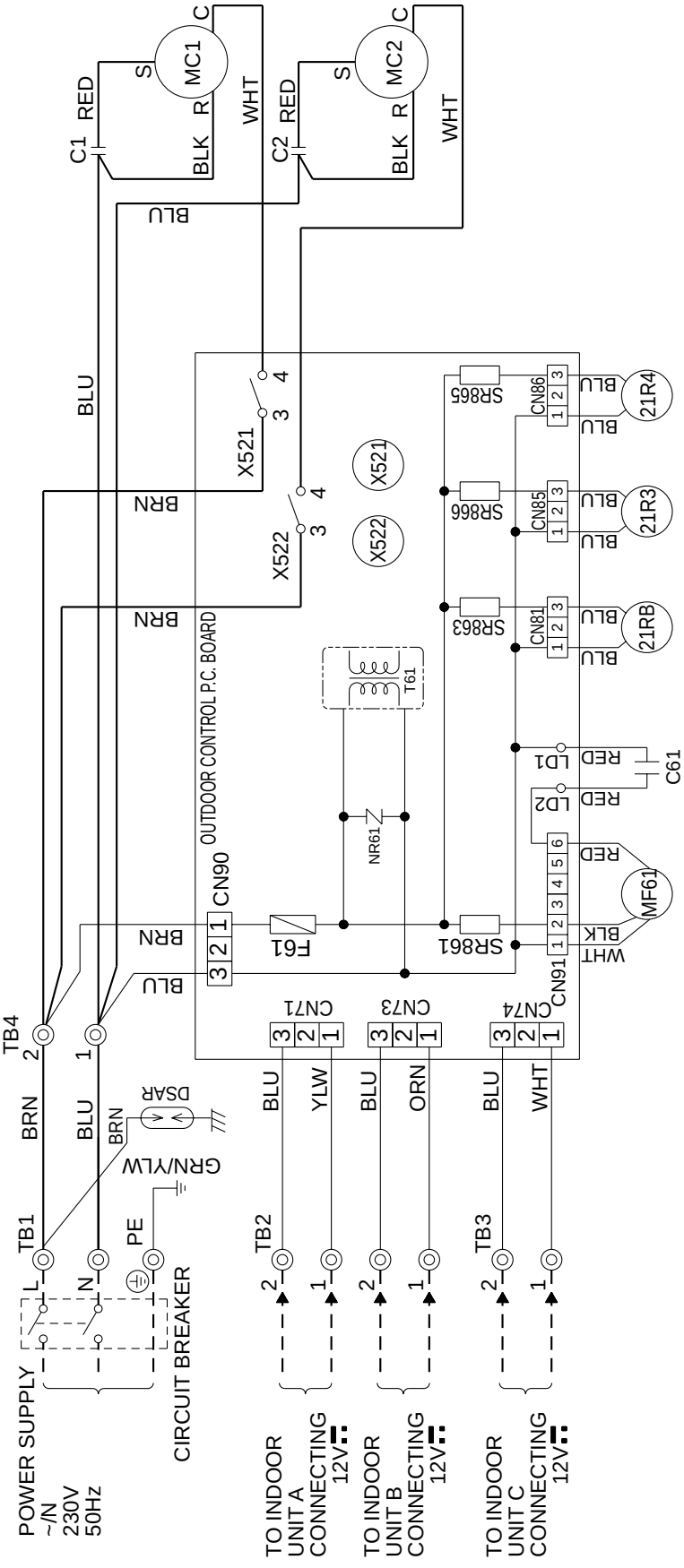


7 WIRING DIAGRAM

MUX-A22WV - E1

OUTDOOR UNIT

MODEL WIRING DIAGRAM



SYMBOL	NAME
C1	COMPRESSOR CAPACITOR(MC1)
C2	COMPRESSOR CAPACITOR(MC2)
C61	OUTDOOR FAN CAPACITOR
DSAR	SURGE ABSORBER
F61	FUSE(3.15A)
MC1	COMPRESSOR(INNER PROTECTOR)
MC2	COMPRESSOR(INNER PROTECTOR)

SYMBOL	NAME
MF61	OUTDOOR FAN MOTOR(INNER PROTECTOR)
NR61	SURGE ABSORBER
SR861	OUTDOOR FAN RELAY
SR863	RELAY (21RB)
SR865	RELAY (C) (21R4)
SR866	RELAY (B) (21R3)
TB1	TERMINAL BLOCK

SYMBOL	NAME
TB2~TB4	TERMINAL BLOCK
T61	TRANSFORMER
X521	COMPRESSOR CONTACTOR(MC1)
X522	COMPRESSOR CONTACTOR(MC2)
21RB	SOLENOID COIL
21R3	SOLENOID COIL (B)
21R4	SOLENOID COIL (C)

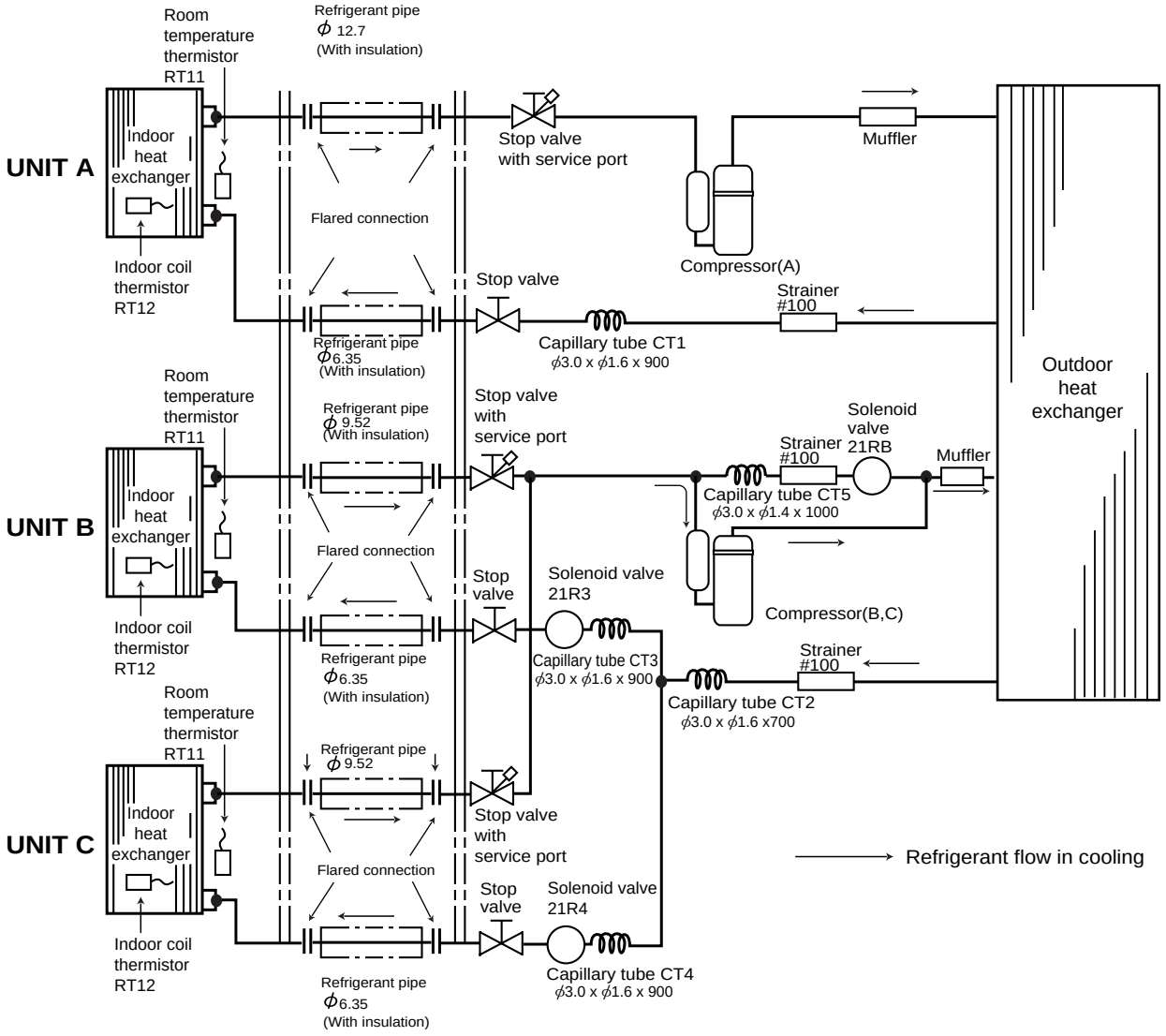
NOTE:1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
2. Use copper conductors only. (For field wiring)
3. Symbols below indicate.
◎: Terminal block, □□□□ : Connector

8 REFRIGERANT SYSTEM DIAGRAM

Unit : mm

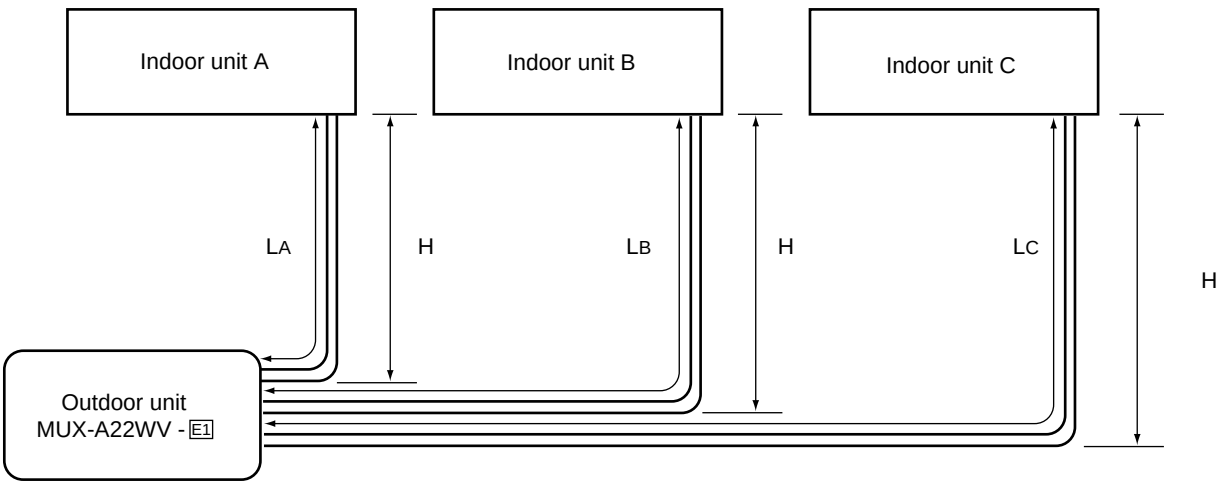
MUX-A22WV-E1

INDOOR UNIT **OUTDOOR UNIT**



MUX-A22WV-E1

MAX.REFRIGERANT PIPING LENGTH & MAX. HEIGHT DIFFERENCE



	UNIT No.	Pipe length				Height difference (H)	No. of bends	
Max. limits	Unit A	L_A	15m			10m	10	
	Unit B	L_B	15m	L_B + L_C	Total 30m	10m	10	Total 15
	Unit C	L_C	15m			10m	10	

ADDITIONAL REFRIGERANT CHARGE (R410A:g)

Unit A	Outdoor unit precharged	Refrigerant piping length (one way)							
		7m	8m	9m	10m	11m	12m	13m	14m	15m
	850g	0	20	40	60	80	100	120	140	160

Unit B + Unit C	Outdoor unit precharged	Refrigerant piping length (one way, 2 unit total)																					
		10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m	21m	22m	23m	24m	25m	26m	27m	28m	29m	30m
	850g	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200

PIPING PREPARATION

①Table below shows the specifications of pipes commercially available.

UNIT No.	Pipe	Outside diameter	Insulation thickness	Insulation material
		mm		
Unit A	For liquid	6.35	8mm	Heat resisting foam plastic 0.045 specific gravity
	For gas	12.7	8mm	
Unit B and Unit C	For liquid	6.35	8mm	
	For gas	9.52	8mm	

②Ensure that the 2 refrigerant pipes are well insulated to prevent condensation.

③Refrigerant bending radius must be 100mm or more.

9 PERFORMANCE CURVES

MUX-A22WV -E1

The standard data contained in these specifications apply only to the operation of the air conditioner under normal conditions, since operating conditions vary according to the areas where these units are installed. The following information has been provided to clarify the operating characteristics of the air conditioner under the conditions indicated by the performance curve.

(1) GUARANTEED VOLTAGE

198~264V, 50Hz

(2) AIR FLOW

Air flow should be set at MAX.

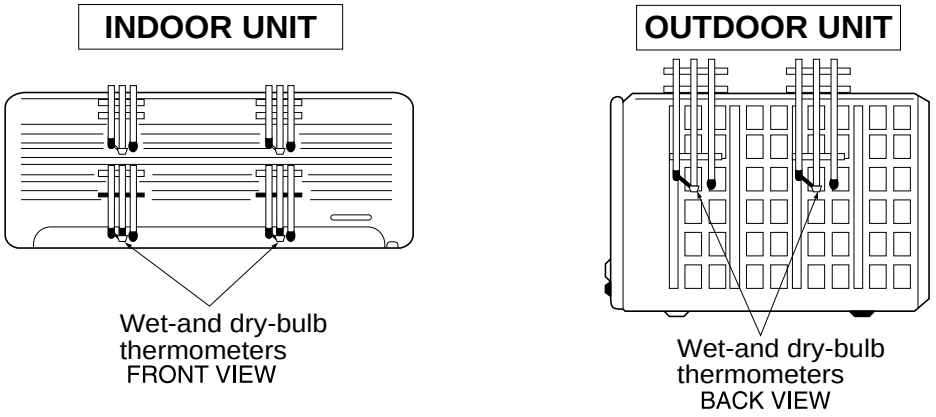
(3) MAIN READINGS

(1) Indoor intake air wet-bulb temperature : °CWB
(2) Indoor outlet air wet-bulb temperature : °CWB
(3) Outdoor intake air dry-bulb temperature : °CDB
(4) Total input: W

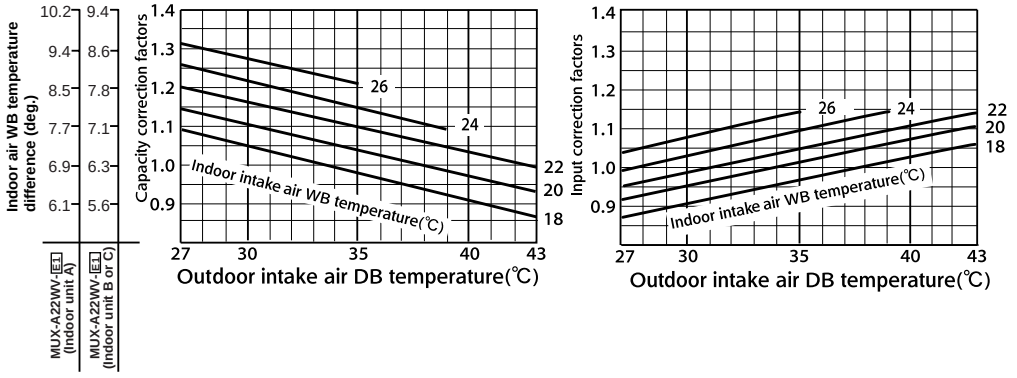
Indoor air wet/dry-bulb temperature difference on the left side of the chart on page 10 shows the difference between the indoor intake air wet/dry-bulb temperature and the indoor outlet air wet/dry-bulb temperature for your reference at service.

How to measure the indoor air wet-bulb/dry-bulb temperature difference

1. Attach at least 2 sets of wet-and dry-bulb thermometers to the indoor air intake as shown in the figure, and at least 2 sets of wet-and dry-bulb thermometers to the indoor air outlet. The thermometers must be attached to the position where air speed is high.
2. Attach at least 2 sets of wet-and dry-bulb thermometers to the outdoor air intake. Cover the thermometers to prevent direct rays of the sun.
3. Check that the air filter is cleaned.
4. Open windows and doors of room.
5. Press the EMERGENCY OPERATION switch once to start the EMERGENCY COOL MODE.
6. When system stabilizes after more than 15 minutes, measure temperature and take an average temperature.
7. 10 minutes later, measure temperature again and check that the temperature does not change.



9-1.CAPACITY AND THE INPUT CURVES (ONE INDOOR UNIT WITH ONE OUTDOOR UNIT)



9-2.OUTDOOR LOW PRESSURE AND OUTDOOR UNIT CURRENT

COOL operation

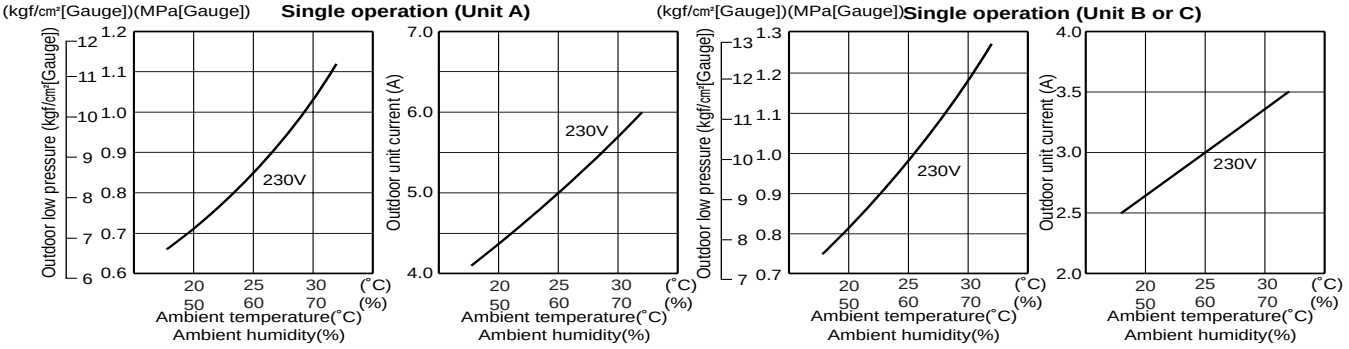
① Both indoor and outdoor unit are under same temperature/humidity condition.

② Air flow should be set at MAX.

③ The unit of pressure has been changed to MPa on the international system of units(SI unit system).
The conversion factor is : **1(MPa[Gauge]) =10.2(kgf/㎠[Gauge])**

Dry-bulb temperature	Relative humidity (%)
20	50
25	60
30	70

MUX-A22WV-E1



PERFORMANCE DATA
COOL operation (230V)

MSC-A12WV -E1 MSC-A12YV -E1 (Single : Room A) : MUX-A22WV -E1

CAPACITY : 3.5(kW) SHF : 0.73 INPUT : 1320(W)

		OUTDOOR DB(℃)															
INDOOR DB(℃)	INDOOR WB(℃)	21				25				27				30			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	4.11	2.25	0.55	1056	3.94	2.15	0.55	1109	3.78	2.07	0.55	1162	3.64	1.99	0.55	1214
21	20	4.29	1.83	0.43	1109	4.11	1.76	0.43	1175	3.99	1.70	0.43	1201	3.85	1.64	0.43	1254
22	18	4.11	2.41	0.59	1056	3.94	2.31	0.59	1109	3.78	2.22	0.59	1162	3.64	2.14	0.59	1214
22	20	4.29	2.00	0.47	1109	4.11	1.92	0.47	1175	3.99	1.86	0.47	1201	3.85	1.80	0.47	1254
22	22	4.46	1.55	0.35	1148	4.31	1.49	0.35	1221	4.20	1.46	0.35	1254	4.03	1.40	0.35	1307
23	18	4.11	2.58	0.63	1056	3.94	2.47	0.63	1109	3.78	2.37	0.63	1162	3.64	2.28	0.63	1214
23	20	4.29	2.17	0.51	1109	4.11	2.09	0.51	1175	3.99	2.02	0.51	1201	3.85	1.95	0.51	1254
23	22	4.46	1.73	0.39	1148	4.31	1.67	0.39	1221	4.20	1.63	0.39	1254	4.03	1.56	0.39	1307
24	18	4.11	2.74	0.67	1056	3.94	2.63	0.67	1109	3.78	2.52	0.67	1162	3.64	2.43	0.67	1214
24	20	4.29	2.35	0.55	1109	4.11	2.25	0.55	1175	3.99	2.18	0.55	1201	3.85	2.11	0.55	1254
24	22	4.46	1.91	0.43	1148	4.31	1.84	0.43	1221	4.20	1.79	0.43	1254	4.03	1.72	0.43	1307
24	24	4.69	1.44	0.31	1201	4.52	1.39	0.31	1267	4.41	1.35	0.31	1307	4.27	1.31	0.31	1373
25	18	4.11	2.91	0.71	1056	3.94	2.78	0.71	1109	3.78	2.67	0.71	1162	3.64	2.57	0.71	1214
25	20	4.29	2.52	0.59	1109	4.11	2.41	0.59	1175	3.99	2.34	0.59	1201	3.85	2.26	0.59	1254
25	22	4.46	2.08	0.47	1148	4.31	2.01	0.47	1221	4.20	1.96	0.47	1254	4.03	1.88	0.47	1307
25	24	4.69	1.63	0.35	1201	4.52	1.57	0.35	1267	4.41	1.53	0.35	1307	4.27	1.48	0.35	1373
26	18	4.11	3.07	0.75	1056	3.94	2.94	0.75	1109	3.78	2.82	0.75	1162	3.64	2.72	0.75	1214
26	20	4.29	2.69	0.63	1109	4.11	2.58	0.63	1175	3.99	2.50	0.63	1201	3.85	2.41	0.63	1254
26	22	4.46	2.26	0.51	1148	4.31	2.18	0.51	1221	4.20	2.13	0.51	1254	4.03	2.04	0.51	1307
26	24	4.69	1.82	0.39	1201	4.52	1.75	0.39	1267	4.41	1.71	0.39	1307	4.27	1.65	0.39	1373
26	26	4.83	1.29	0.27	1267	4.69	1.25	0.27	1333	4.62	1.23	0.27	1373	4.48	1.20	0.27	1412
27	18	4.11	3.24	0.79	1056	3.94	3.10	0.79	1109	3.78	2.97	0.79	1162	3.64	2.86	0.79	1214
27	20	4.29	2.86	0.67	1109	4.11	2.74	0.67	1175	3.99	2.66	0.67	1201	3.85	2.57	0.67	1254
27	22	4.46	2.44	0.55	1148	4.31	2.35	0.55	1221	4.20	2.30	0.55	1254	4.03	2.20	0.55	1307
27	24	4.69	2.00	0.43	1201	4.52	1.93	0.43	1267	4.41	1.88	0.43	1307	4.27	1.82	0.43	1373
27	26	4.83	1.48	0.31	1267	4.69	1.44	0.31	1333	4.62	1.42	0.31	1373	4.48	1.38	0.31	1412
28	18	4.11	3.40	0.83	1056	3.94	3.26	0.83	1109	3.78	3.13	0.83	1162	3.64	3.01	0.83	1214
28	20	4.29	3.03	0.71	1109	4.11	2.91	0.71	1175	3.99	2.82	0.71	1201	3.85	2.72	0.71	1254
28	22	4.46	2.62	0.59	1148	4.31	2.53	0.59	1221	4.20	2.47	0.59	1254	4.03	2.36	0.59	1307
28	24	4.69	2.19	0.47	1201	4.52	2.11	0.47	1267	4.41	2.06	0.47	1307	4.27	1.99	0.47	1373
28	26	4.83	1.68	0.35	1267	4.69	1.63	0.35	1333	4.62	1.60	0.35	1373	4.48	1.55	0.35	1412
29	18	4.11	3.57	0.87	1056	3.94	3.41	0.87	1109	3.78	3.28	0.87	1162	3.64	3.16	0.87	1214
29	20	4.29	3.20	0.75	1109	4.11	3.07	0.75	1175	3.99	2.98	0.75	1201	3.85	2.88	0.75	1254
29	22	4.46	2.80	0.63	1148	4.31	2.70	0.63	1221	4.20	2.63	0.63	1254	4.03	2.52	0.63	1307
29	24	4.69	2.38	0.51	1201	4.52	2.29	0.51	1267	4.41	2.24	0.51	1307	4.27	2.16	0.51	1373
29	26	4.83	1.87	0.39	1267	4.69	1.82	0.39	1333	4.62	1.79	0.39	1373	4.48	1.73	0.39	1412
30	18	4.11	3.73	0.91	1056	3.94	3.57	0.91	1109	3.78	3.43	0.91	1162	3.64	3.30	0.91	1214
30	20	4.29	3.37	0.79	1109	4.11	3.24	0.79	1175	3.99	3.14	0.79	1201	3.85	3.03	0.79	1254
30	22	4.46	2.98	0.67	1148	4.31	2.87	0.67	1221	4.20	2.80	0.67	1254	4.03	2.68	0.67	1307
30	24	4.69	2.57	0.55	1201	4.52	2.47	0.55	1267	4.41	2.41	0.55	1307	4.27	2.34	0.55	1373
30	26	4.83	2.06	0.43	1267	4.69	2.00	0.43	1333	4.62	1.97	0.43	1373	4.48	1.91	0.43	1412
31	18	4.11	3.89	0.95	1056	3.94	3.73	0.95	1109	3.78	3.58	0.95	1162	3.64	3.45	0.95	1214
31	20	4.29	3.55	0.83	1109	4.11	3.40	0.83	1175	3.99	3.30	0.83	1201	3.85	3.18	0.83	1254
31	22	4.46	3.15	0.71	1148	4.31	3.04	0.71	1221	4.20	2.97	0.71	1254	4.03	2.85	0.71	1307
31	24	4.69	2.75	0.59	1201	4.52	2.65	0.59	1267	4.41	2.59	0.59	1307	4.27	2.51	0.59	1373
31	26	4.83	2.26	0.47	1267	4.69	2.19	0.47	1333	4.62	2.16	0.47	1373	4.48	2.09	0.47	1412
32	18	4.11	4.06	0.99	1056	3.94	3.89	0.99	1109	3.78	3.73	0.99	1162	3.64	3.59	0.99	1214
32	20	4.29	3.72	0.87	1109	4.11	3.57	0.87	1175	3.99	3.46	0.87	1201	3.85	3.34	0.87	1254
32	22	4.46	3.33	0.75	1148	4.31	3.22	0.75	1221	4.20	3.14	0.75	1254	4.03	3.01	0.75	1307
32	24	4.69	2.94	0.63	1201	4.52	2.83	0.63	1267	4.41	2.77	0.63	1307	4.27	2.68	0.63	1373
32	26	4.83	2.45	0.51	1267	4.69	2.38	0.51	1333	4.62	2.34	0.51	1373	4.48	2.27	0.51	1412

NOTE Q :Total capacity (kW) SHF :Sensible heat factor DB :Dry-bulb temperature
SHC :Sensible heat capacity (kW) INPUT :Total power input (W) WB :Wet-bulb temperature

PERFORMANCE DATA
COOL operation (230V)

MSC-A12WV -E1 MSC-A12YV -E1 (Single : Room A) : MUX-A22WV -E1

CAPACITY : 3.5(kW) SHF : 0.73 INPUT : 1320(W)

		OUTDOOR DB(℃)											
INDOOR DB(℃)	INDOOR WB(℃)	35				40				43			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	3.43	1.88	0.55	1294	3.15	1.72	0.55	1373	3.03	1.66	0.55	1399
21	20	3.61	1.54	0.43	1346	3.36	1.43	0.43	1412	3.24	1.38	0.43	1452
22	18	3.43	2.01	0.59	1294	3.15	1.85	0.59	1373	3.03	1.78	0.59	1399
22	20	3.61	1.68	0.47	1346	3.36	1.57	0.47	1412	3.24	1.51	0.47	1452
22	22	3.82	1.32	0.35	1399	3.57	1.24	0.35	1478	3.45	1.20	0.35	1505
23	18	3.43	2.15	0.63	1294	3.15	1.98	0.63	1373	3.03	1.90	0.63	1399
23	20	3.61	1.83	0.51	1346	3.36	1.70	0.51	1412	3.24	1.64	0.51	1452
23	22	3.82	1.48	0.39	1399	3.57	1.38	0.39	1478	3.45	1.33	0.39	1505
24	18	3.43	2.29	0.67	1294	3.15	2.10	0.67	1373	3.03	2.02	0.67	1399
24	20	3.61	1.97	0.55	1346	3.36	1.84	0.55	1412	3.24	1.77	0.55	1452
24	22	3.82	1.63	0.43	1399	3.57	1.52	0.43	1478	3.45	1.47	0.43	1505
24	24	4.03	1.24	0.31	1452	3.78	1.16	0.31	1518	3.68	1.13	0.31	1551
25	18	3.43	2.43	0.71	1294	3.15	2.23	0.71	1373	3.03	2.14	0.71	1399
25	20	3.61	2.12	0.59	1346	3.36	1.97	0.59	1412	3.24	1.90	0.59	1452
25	22	3.82	1.78	0.47	1399	3.57	1.67	0.47	1478	3.45	1.61	0.47	1505
25	24	4.03	1.40	0.35	1452	3.78	1.31	0.35	1518	3.68	1.28	0.35	1551
26	18	3.43	2.56	0.75	1294	3.15	2.35	0.75	1373	3.03	2.26	0.75	1399
26	20	3.61	2.26	0.63	1346	3.36	2.11	0.63	1412	3.24	2.03	0.63	1452
26	22	3.82	1.93	0.51	1399	3.57	1.81	0.51	1478	3.45	1.75	0.51	1505
26	24	4.03	1.56	0.39	1452	3.78	1.46	0.39	1518	3.68	1.42	0.39	1551
26	26	4.24	1.13	0.27	1505	3.99	1.07	0.27	1571	3.87	1.03	0.27	1604
27	18	3.43	2.70	0.79	1294	3.15	2.48	0.79	1373	3.03	2.38	0.79	1399
27	20	3.61	2.40	0.67	1346	3.36	2.24	0.67	1412	3.24	2.16	0.67	1452
27	22	3.82	2.09	0.55	1399	3.57	1.95	0.55	1478	3.45	1.89	0.55	1505
27	24	4.03	1.72	0.43	1452	3.78	1.61	0.43	1518	3.68	1.57	0.43	1551
27	26	4.24	1.30	0.31	1505	3.99	1.22	0.31	1571	3.87	1.19	0.31	1604
28	18	3.43	2.84	0.83	1294	3.15	2.61	0.83	1373	3.03	2.50	0.83	1399
28	20	3.61	2.55	0.71	1346	3.36	2.38	0.71	1412	3.24	2.29	0.71	1452
28	22	3.82	2.24	0.59	1399	3.57	2.10	0.59	1478	3.45	2.02	0.59	1505
28	24	4.03	1.88	0.47	1452	3.78	1.77	0.47	1518	3.68	1.72	0.47	1551
28	26	4.24	1.47	0.35	1505	3.99	1.38	0.35	1571	3.87	1.34	0.35	1604
29	18	3.43	2.97	0.87	1294	3.15	2.73	0.87	1373	3.03	2.62	0.87	1399
29	20	3.61	2.69	0.75	1346	3.36	2.51	0.75	1412	3.24	2.42	0.75	1452
29	22	3.82	2.39	0.63	1399	3.57	2.24	0.63	1478	3.45	2.16	0.63	1505
29	24	4.03	2.04	0.51	1452	3.78	1.92	0.51	1518	3.68	1.86	0.51	1551
29	26	4.24	1.64	0.39	1505	3.99	1.54	0.39	1571	3.87	1.50	0.39	1604
30	18	3.43	3.11	0.91	1294	3.15	2.86	0.91	1373	3.03	2.75	0.91	1399
30	20	3.61	2.84	0.79	1346	3.36	2.64	0.79	1412	3.24	2.55	0.79	1452
30	22	3.82	2.54	0.67	1399	3.57	2.38	0.67	1478	3.45	2.30	0.67	1505
30	24	4.03	2.20	0.55	1452	3.78	2.07	0.55	1518	3.68	2.01	0.55	1551
30	26	4.24	1.81	0.43	1505	3.99	1.70	0.43	1571	3.87	1.65	0.43	1604
31	18	3.43	3.25	0.95	1294	3.15	2.98	0.95	1373	3.03	2.87	0.95	1399
31	20	3.61	2.98	0.83	1346	3.36	2.78	0.83	1412	3.24	2.68	0.83	1452
31	22	3.82	2.70	0.71	1399	3.57	2.52	0.71	1478	3.45	2.44	0.71	1505
31	24	4.03	2.36	0.59	1452	3.78	2.22	0.59	1518	3.68	2.16	0.59	1551
31	26	4.24	1.98	0.47	1505	3.99	1.86	0.47	1571	3.87	1.81	0.47	1604
32	18	3.43	3.39	0.99	1294	3.15	3.11	0.99	1373	3.03	2.99	0.99	1399
32	20	3.61	3.13	0.87	1346	3.36	2.91	0.87	1412	3.24	2.81	0.87	1452
32	22	3.82	2.85	0.75	1399	3.57	2.67	0.75	1478	3.45	2.58	0.75	1505
32	24	4.03	2.52	0.63	1452	3.78	2.37	0.63	1518	3.68	2.30	0.63	1551
32	26	4.24	2.15	0.51	1505	3.99	2.02	0.51	1571	3.87	1.96	0.51	1604

NOTE Q :Total capacity (kW) SHF :Sensible heat factor DB :Dry-bulb temperature
SHC :Sensible heat capacity (kW) INPUT :Total power input (W) WB :Wet-bulb temperature

PERFORMANCE DATA
COOL operation (230V)
MSC-A07WV -E1 MSC-A07YV -E1(Single : Room B or C) : MUX-A22WV -E1

CAPACITY : 2.4(kW) SHF : 0.74 INPUT : 850(W)

		OUTDOOR DB(°C)															
INDOOR DB(°C)	INDOOR WB(°C)	21				25				27				30			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	2.82	1.58	0.56	680	2.70	1.51	0.56	714	2.59	1.45	0.56	748	2.50	1.40	0.56	782
21	20	2.94	1.29	0.44	714	2.82	1.24	0.44	757	2.74	1.20	0.44	774	2.64	1.16	0.44	808
22	18	2.82	1.69	0.60	680	2.70	1.62	0.60	714	2.59	1.56	0.60	748	2.50	1.50	0.60	782
22	20	2.94	1.41	0.48	714	2.82	1.35	0.48	757	2.74	1.31	0.48	774	2.64	1.27	0.48	808
22	22	3.06	1.10	0.36	740	2.95	1.06	0.36	786	2.88	1.04	0.36	808	2.76	0.99	0.36	842
23	18	2.82	1.80	0.64	680	2.70	1.73	0.64	714	2.59	1.66	0.64	748	2.50	1.60	0.64	782
23	20	2.94	1.53	0.52	714	2.82	1.47	0.52	757	2.74	1.42	0.52	774	2.64	1.37	0.52	808
23	22	3.06	1.22	0.40	740	2.95	1.18	0.40	786	2.88	1.15	0.40	808	2.76	1.10	0.40	842
24	18	2.82	1.92	0.68	680	2.70	1.84	0.68	714	2.59	1.76	0.68	748	2.50	1.70	0.68	782
24	20	2.94	1.65	0.56	714	2.82	1.58	0.56	757	2.74	1.53	0.56	774	2.64	1.48	0.56	808
24	22	3.06	1.35	0.44	740	2.95	1.30	0.44	786	2.88	1.27	0.44	808	2.76	1.21	0.44	842
24	24	3.22	1.03	0.32	774	3.10	0.99	0.32	816	3.02	0.97	0.32	842	2.93	0.94	0.32	884
25	18	2.82	2.03	0.72	680	2.70	1.94	0.72	714	2.59	1.87	0.72	748	2.50	1.80	0.72	782
25	20	2.94	1.76	0.60	714	2.82	1.69	0.60	757	2.74	1.64	0.60	774	2.64	1.58	0.60	808
25	22	3.06	1.47	0.48	740	2.95	1.42	0.48	786	2.88	1.38	0.48	808	2.76	1.32	0.48	842
25	24	3.22	1.16	0.36	774	3.10	1.11	0.36	816	3.02	1.09	0.36	842	2.93	1.05	0.36	884
26	18	2.82	2.14	0.76	680	2.70	2.05	0.76	714	2.59	1.97	0.76	748	2.50	1.90	0.76	782
26	20	2.94	1.88	0.64	714	2.82	1.80	0.64	757	2.74	1.75	0.64	774	2.64	1.69	0.64	808
26	22	3.06	1.59	0.52	740	2.95	1.54	0.52	786	2.88	1.50	0.52	808	2.76	1.44	0.52	842
26	24	3.22	1.29	0.40	774	3.10	1.24	0.40	816	3.02	1.21	0.40	842	2.93	1.17	0.40	884
26	26	3.31	0.93	0.28	816	3.22	0.90	0.28	859	3.17	0.89	0.28	884	3.07	0.86	0.28	910
27	18	2.82	2.26	0.80	680	2.70	2.16	0.80	714	2.59	2.07	0.80	748	2.50	2.00	0.80	782
27	20	2.94	2.00	0.68	714	2.82	1.92	0.68	757	2.74	1.86	0.68	774	2.64	1.80	0.68	808
27	22	3.06	1.71	0.56	740	2.95	1.65	0.56	786	2.88	1.61	0.56	808	2.76	1.55	0.56	842
27	24	3.22	1.42	0.44	774	3.10	1.36	0.44	816	3.02	1.33	0.44	842	2.93	1.29	0.44	884
27	26	3.31	1.06	0.32	816	3.22	1.03	0.32	859	3.17	1.01	0.32	884	3.07	0.98	0.32	910
28	18	2.82	2.37	0.84	680	2.70	2.27	0.84	714	2.59	2.18	0.84	748	2.50	2.10	0.84	782
28	20	2.94	2.12	0.72	714	2.82	2.03	0.72	757	2.74	1.97	0.72	774	2.64	1.90	0.72	808
28	22	3.06	1.84	0.60	740	2.95	1.77	0.60	786	2.88	1.73	0.60	808	2.76	1.66	0.60	842
28	24	3.22	1.54	0.48	774	3.10	1.49	0.48	816	3.02	1.45	0.48	842	2.93	1.41	0.48	884
28	26	3.31	1.19	0.36	816	3.22	1.16	0.36	859	3.17	1.14	0.36	884	3.07	1.11	0.36	910
29	18	2.82	2.48	0.88	680	2.70	2.38	0.88	714	2.59	2.28	0.88	748	2.50	2.20	0.88	782
29	20	2.94	2.23	0.76	714	2.82	2.14	0.76	757	2.74	2.08	0.76	774	2.64	2.01	0.76	808
29	22	3.06	1.96	0.64	740	2.95	1.89	0.64	786	2.88	1.84	0.64	808	2.76	1.77	0.64	842
29	24	3.22	1.67	0.52	774	3.10	1.61	0.52	816	3.02	1.57	0.52	842	2.93	1.52	0.52	884
29	26	3.31	1.32	0.40	816	3.22	1.29	0.40	859	3.17	1.27	0.40	884	3.07	1.23	0.40	910
30	18	2.82	2.59	0.92	680	2.70	2.48	0.92	714	2.59	2.38	0.92	748	2.50	2.30	0.92	782
30	20	2.94	2.35	0.80	714	2.82	2.26	0.80	757	2.74	2.19	0.80	774	2.64	2.11	0.80	808
30	22	3.06	2.08	0.68	740	2.95	2.01	0.68	786	2.88	1.96	0.68	808	2.76	1.88	0.68	842
30	24	3.22	1.80	0.56	774	3.10	1.73	0.56	816	3.02	1.69	0.56	842	2.93	1.64	0.56	884
30	26	3.31	1.46	0.44	816	3.22	1.42	0.44	859	3.17	1.39	0.44	884	3.07	1.35	0.44	910
31	18	2.82	2.71	0.96	680	2.70	2.59	0.96	714	2.59	2.49	0.96	748	2.50	2.40	0.96	782
31	20	2.94	2.47	0.84	714	2.82	2.37	0.84	757	2.74	2.30	0.84	774	2.64	2.22	0.84	808
31	22	3.06	2.20	0.72	740	2.95	2.13	0.72	786	2.88	2.07	0.72	808	2.76	1.99	0.72	842
31	24	3.22	1.93	0.60	774	3.10	1.86	0.60	816	3.02	1.81	0.60	842	2.93	1.76	0.60	884
31	26	3.31	1.59	0.48	816	3.22	1.54	0.48	859	3.17	1.52	0.48	884	3.07	1.47	0.48	910
32	18	2.82	2.82	1.00	680	2.70	2.70	1.00	714	2.59	2.59	1.00	748	2.50	2.50	1.00	782
32	20	2.94	2.59	0.88	714	2.82	2.48	0.88	757	2.74	2.41	0.88	774	2.64	2.32	0.88	808
32	22	3.06	2.33	0.76	740	2.95	2.24	0.76	786	2.88	2.19	0.76	808	2.76	2.10	0.76	842
32	24	3.22	2.06	0.64	774	3.10	1.98	0.64	816	3.02	1.94	0.64	842	2.93	1.87	0.64	884
32	26	3.31	1.72	0.52	816	3.22	1.67	0.52	859	3.17	1.65	0.52	884	3.07	1.60	0.52	910

NOTE Q :Total capacity (kW) SHF :Sensible heat factor DB :Dry-bulb temperature
SHC :Sensible heat capacity (kW) INPUT :Total power input (W) WB :Wet-bulb temperature

PERFORMANCE DATA

COOL operation (230V)

MSC-A07WV -E1 MSC-A07YV -E1 (Single : Room B or C) : MUX-A22WV -E1

CAPACITY : 2.4(kW) SHF : 0.74 INPUT : 850(W)

		OUTDOOR DB(℃)											
INDOOR DB(℃)	INDOOR WB(℃)	35				40				43			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	2.35	1.32	0.56	833	2.16	1.21	0.56	884	2.08	1.16	0.56	901
21	20	2.47	1.09	0.44	867	2.30	1.01	0.44	910	2.22	0.98	0.44	935
22	18	2.35	1.41	0.60	833	2.16	1.30	0.60	884	2.08	1.25	0.60	901
22	20	2.47	1.19	0.48	867	2.30	1.11	0.48	910	2.22	1.07	0.48	935
22	22	2.62	0.94	0.36	901	2.45	0.88	0.36	952	2.36	0.85	0.36	969
23	18	2.35	1.51	0.64	833	2.16	1.38	0.64	884	2.08	1.33	0.64	901
23	20	2.47	1.29	0.52	867	2.30	1.20	0.52	910	2.22	1.15	0.52	935
23	22	2.62	1.05	0.40	901	2.45	0.98	0.40	952	2.36	0.95	0.40	969
24	18	2.35	1.60	0.68	833	2.16	1.47	0.68	884	2.08	1.41	0.68	901
24	20	2.47	1.38	0.56	867	2.30	1.29	0.56	910	2.22	1.24	0.56	935
24	22	2.62	1.15	0.44	901	2.45	1.08	0.44	952	2.36	1.04	0.44	969
24	24	2.76	0.88	0.32	935	2.59	0.83	0.32	978	2.52	0.81	0.32	999
25	18	2.35	1.69	0.72	833	2.16	1.56	0.72	884	2.08	1.49	0.72	901
25	20	2.47	1.48	0.60	867	2.30	1.38	0.60	910	2.22	1.33	0.60	935
25	22	2.62	1.26	0.48	901	2.45	1.18	0.48	952	2.36	1.13	0.48	969
25	24	2.76	0.99	0.36	935	2.59	0.93	0.36	978	2.52	0.91	0.36	999
26	18	2.35	1.79	0.76	833	2.16	1.64	0.76	884	2.08	1.58	0.76	901
26	20	2.47	1.58	0.64	867	2.30	1.47	0.64	910	2.22	1.42	0.64	935
26	22	2.62	1.36	0.52	901	2.45	1.27	0.52	952	2.36	1.23	0.52	969
26	24	2.76	1.10	0.40	935	2.59	1.04	0.40	978	2.52	1.01	0.40	999
26	26	2.90	0.81	0.28	969	2.74	0.77	0.28	1012	2.65	0.74	0.28	1033
27	18	2.35	1.88	0.80	833	2.16	1.73	0.80	884	2.08	1.66	0.80	901
27	20	2.47	1.68	0.68	867	2.30	1.57	0.68	910	2.22	1.51	0.68	935
27	22	2.62	1.46	0.56	901	2.45	1.37	0.56	952	2.36	1.32	0.56	969
27	24	2.76	1.21	0.44	935	2.59	1.14	0.44	978	2.52	1.11	0.44	999
27	26	2.90	0.93	0.32	969	2.74	0.88	0.32	1012	2.65	0.85	0.32	1033
28	18	2.35	1.98	0.84	833	2.16	1.81	0.84	884	2.08	1.74	0.84	901
28	20	2.47	1.78	0.72	867	2.30	1.66	0.72	910	2.22	1.60	0.72	935
28	22	2.62	1.57	0.60	901	2.45	1.47	0.60	952	2.36	1.42	0.60	969
28	24	2.76	1.32	0.48	935	2.59	1.24	0.48	978	2.52	1.21	0.48	999
28	26	2.90	1.05	0.36	969	2.74	0.98	0.36	1012	2.65	0.95	0.36	1033
29	18	2.35	2.07	0.88	833	2.16	1.90	0.88	884	2.08	1.83	0.88	901
29	20	2.47	1.88	0.76	867	2.30	1.75	0.76	910	2.22	1.69	0.76	935
29	22	2.62	1.67	0.64	901	2.45	1.57	0.64	952	2.36	1.51	0.64	969
29	24	2.76	1.44	0.52	935	2.59	1.35	0.52	978	2.52	1.31	0.52	999
29	26	2.90	1.16	0.40	969	2.74	1.09	0.40	1012	2.65	1.06	0.40	1033
30	18	2.35	2.16	0.92	833	2.16	1.99	0.92	884	2.08	1.91	0.92	901
30	20	2.47	1.98	0.80	867	2.30	1.84	0.80	910	2.22	1.78	0.80	935
30	22	2.62	1.78	0.68	901	2.45	1.66	0.68	952	2.36	1.61	0.68	969
30	24	2.76	1.55	0.56	935	2.59	1.45	0.56	978	2.52	1.41	0.56	999
30	26	2.90	1.28	0.44	969	2.74	1.20	0.44	1012	2.65	1.17	0.44	1033
31	18	2.35	2.26	0.96	833	2.16	2.07	0.96	884	2.08	1.99	0.96	901
31	20	2.47	2.08	0.84	867	2.30	1.94	0.84	910	2.22	1.86	0.84	935
31	22	2.62	1.88	0.72	901	2.45	1.76	0.72	952	2.36	1.70	0.72	969
31	24	2.76	1.66	0.60	935	2.59	1.56	0.60	978	2.52	1.51	0.60	999
31	26	2.90	1.39	0.48	969	2.74	1.31	0.48	1012	2.65	1.27	0.48	1033
32	18	2.35	2.35	1.00	833	2.16	2.16	1.00	884	2.08	2.08	1.00	901
32	20	2.47	2.18	0.88	867	2.30	2.03	0.88	910	2.22	1.95	0.88	935
32	22	2.62	1.99	0.76	901	2.45	1.86	0.76	952	2.36	1.80	0.76	969
32	24	2.76	1.77	0.64	935	2.59	1.66	0.64	978	2.52	1.61	0.64	999
32	26	2.90	1.51	0.52	969	2.74	1.42	0.52	1012	2.65	1.38	0.52	1033

NOTE Q :Total capacity (kW) SHF :Sensible heat factor DB :Dry-bulb temperature
SHC :Sensible heat capacity (kW) INPUT :Total power input (W) WB :Wet-bulb temperature

10 MICROPROCESSOR CONTROL

MUX-A22WV -E1

OUTDOOR UNIT ACTUATOR CONTROL

MUX-A22WV -E1

ACTUATOR \ INDOOR UNIT			A	B	C
COMPRESSOR	MC1	ON	ON	–	–
		OFF	OFF	–	–
	MC2	ON	–	ON	ON
			–	ON	OFF
			–	OFF	ON
		OFF	–	OFF	OFF
OUTDOOR FAN MOTOR	MF61	ON	ANY UNIT ON		
		OFF	OFF	OFF	OFF
SOLENOID VALVE	21R3	ON (OPEN)	–	ON	–
		OFF (CLOSE)	–	OFF	–
	21R4	ON (OPEN)	–	–	ON
		OFF (CLOSE)	–	–	OFF
	21RB	ON (CLOSE)	–	ON	ON
			–	ON	OFF
			–	OFF	ON
		OFF (OPEN)	–	OFF	OFF

"–" means that the indoor unit is not related to the control of actuator.

11 TROUBLESHOOTING

MUX-A22WV -E1

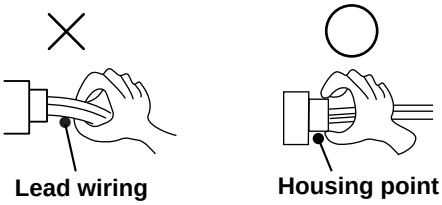
11-1. Cautions on troubleshooting

1. Before troubleshooting, check the following:

1) Check the power supply voltage.
2) Check the indoor/outdoor connecting wire for mis-wiring.

2. Take care the following during servicing.

1) Before servicing the air conditioner, first be sure to turn off the remote controller to stop the unit, and then after confirming the horizontal vane is closed, turn off the breaker and/or disconnect the power plug.
2) Be sure to turn OFF the power supply before removing the front panel, the cabinet, the top panel, and the electronic control P.C. board.
3) When removing the electronic control P.C. board, hold the edge of the board with care NOT to apply stress on the components.
4) When connecting or disconnecting the connectors, hold the housing of the connector. DO NOT pull the lead wires.

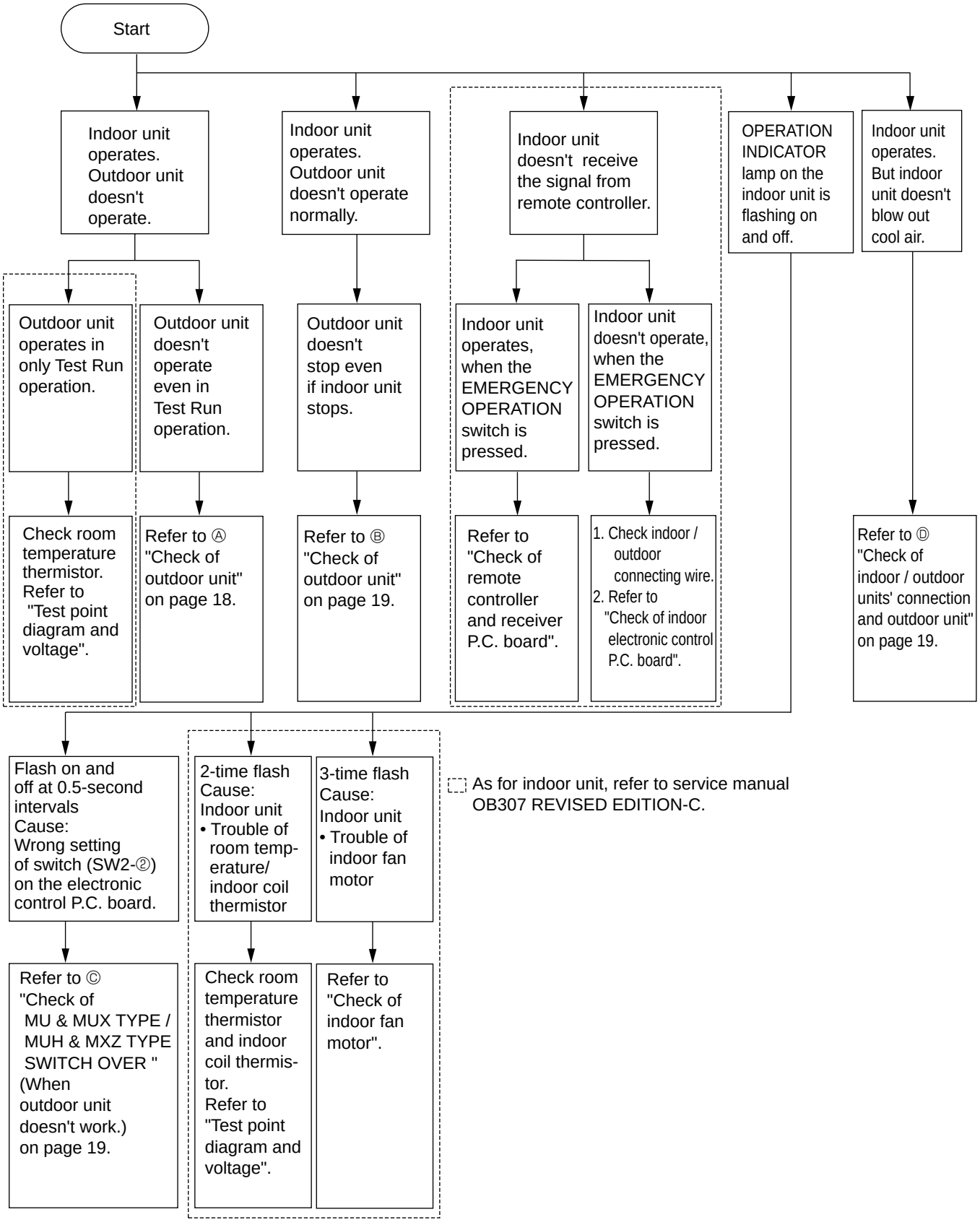


3. Troubleshooting procedure

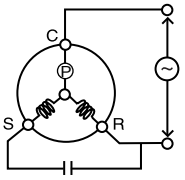
1) First, check if the OPERATION INDICATOR lamp on the indoor unit is flashing on and off to indicate an abnormality. To make sure, check how many times the abnormality indication is flashing on and off before starting service work.
2) If the electronic control P.C. board is supposed to be defective, check the copper foil pattern for disconnection and the components for bursting and discoloration.
3) When troubleshooting, refer to the flow chart on page 16.

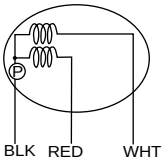
11-2. Instruction of troubleshooting

MUX-A22WV - E1



MUX-A22WV - E1

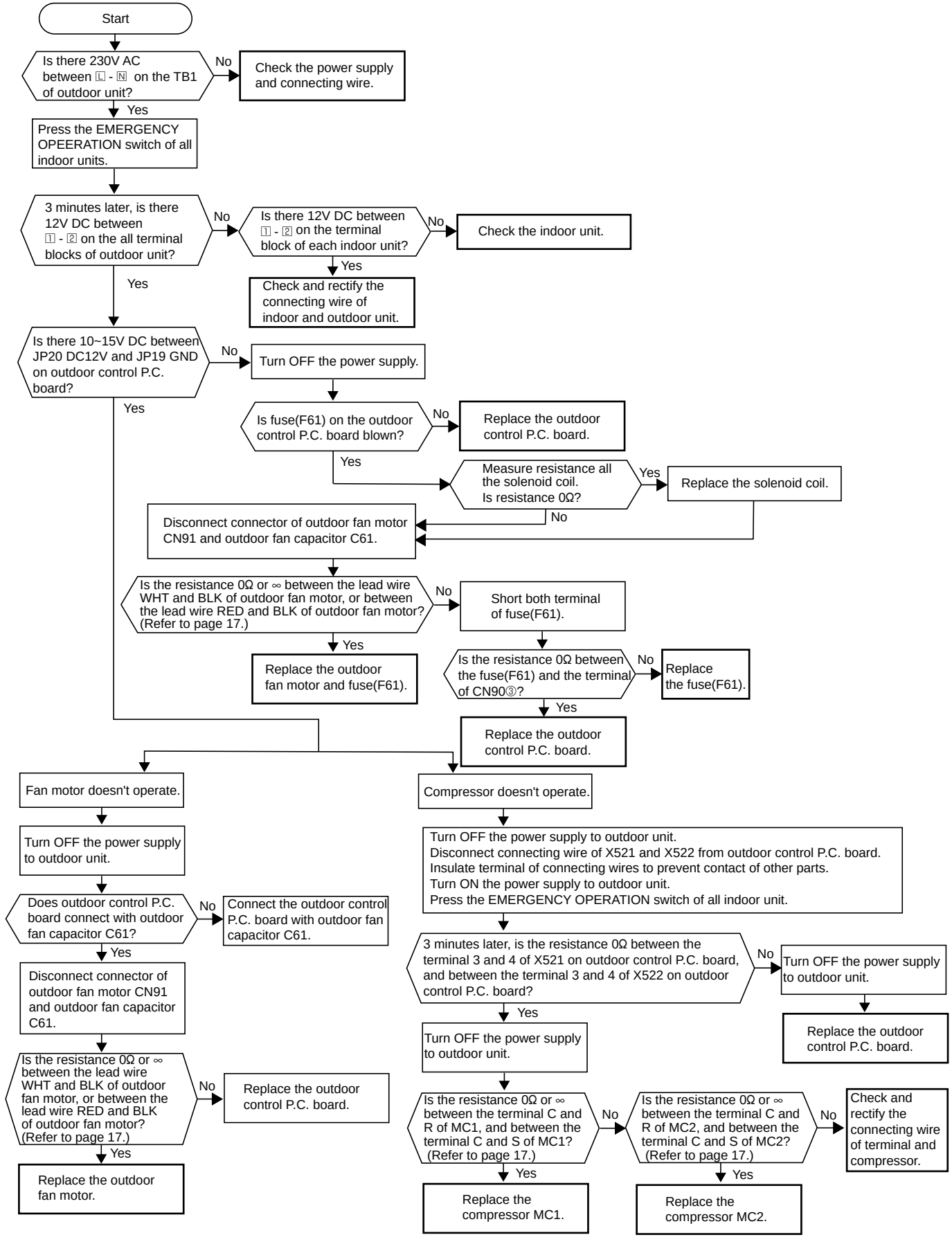
<table>
<tr><th>Part name</th><th>Check method and criterion</th><th>Figure</th></tr>
<tr><td>Compressor
(MC1, MC2)
INNER
PROTECTOR
150°C OPEN
90°C CLOSE</td><td>Measure the resistance between the terminals with a tester.
(Coil wiring temperature-10°C ~ 40°C)
<table><tr><th rowspan="2"></th><th colspan="2">Normal</th><th>Abnormal</th></tr><tr><th>RN145VHSHT</th><th>RN092VHSHT</th><th rowspan="3">Open or short-circuit</th></tr><tr><td>C-R</td><td>2.14 ~ 2.63Ω</td><td>3.41 ~ 4.18Ω</td></tr><tr><td>C-S</td><td>3.35 ~ 4.11Ω</td><td>5.41 ~ 6.63Ω</td></tr></table></td><td>  </td></tr>
<tr><td>Outdoor fan
motor
(MF61)

INNER
PROTECTOR
145±8°C OPEN</td><td>Measure the resistance between the terminals with a tester.
(Coil wiring temperature -10°C ~ 40°C)
<table><tr><th>Color of lead wire</th><th>Normal</th><th>Abnormal</th></tr><tr><td>WHT-BLK</td><td>79 ~ 98Ω</td><td rowspan="2">Open or short-circuit</td></tr><tr><td>BLK-RED</td><td>129 ~ 158Ω</td></tr></table></td><td>  </td></tr>
<tr><td>Solenoid coil
(21RB, 21R3,
21R4)</td><td>Measure the resistance with a tester. (Part temperature -10°C ~ 40°C)
<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>1410 ~ 1730Ω</td><td>Open or short-circuit</td></tr></table></td><td></td></tr>
</table>

Ⓟ Inner protector

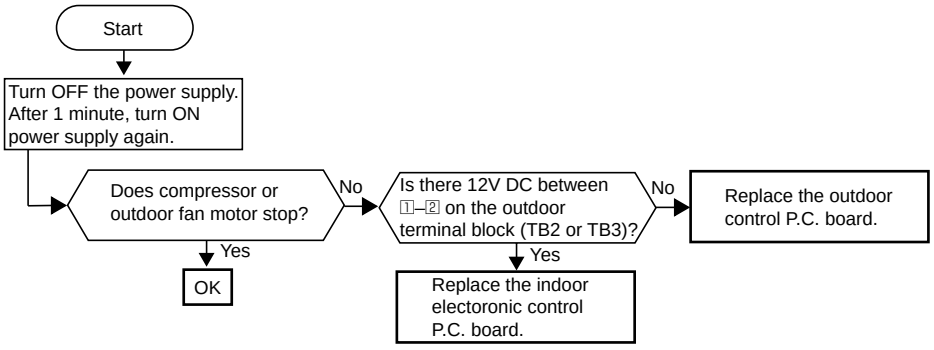
Compressor and / or outdoor fan doesn't operate.

Ⓐ Check of outdoor unit



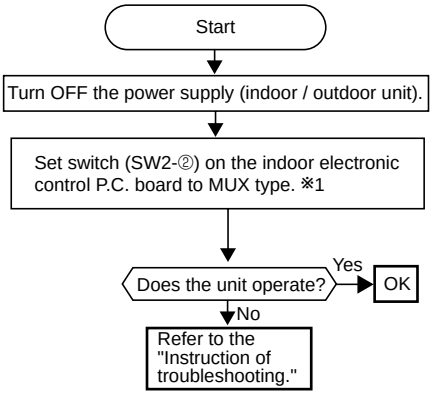
Compressor and / or outdoor fan doesn't stop.

Ⓑ Check of outdoor unit



When OPERATION INDICATOR lamp flashes 0.5-second intervals.
Outdoor unit doesn't operate.

Ⓒ Check of MU & MUX TYPE / MUH & MXZ TYPE SWITCH OVER

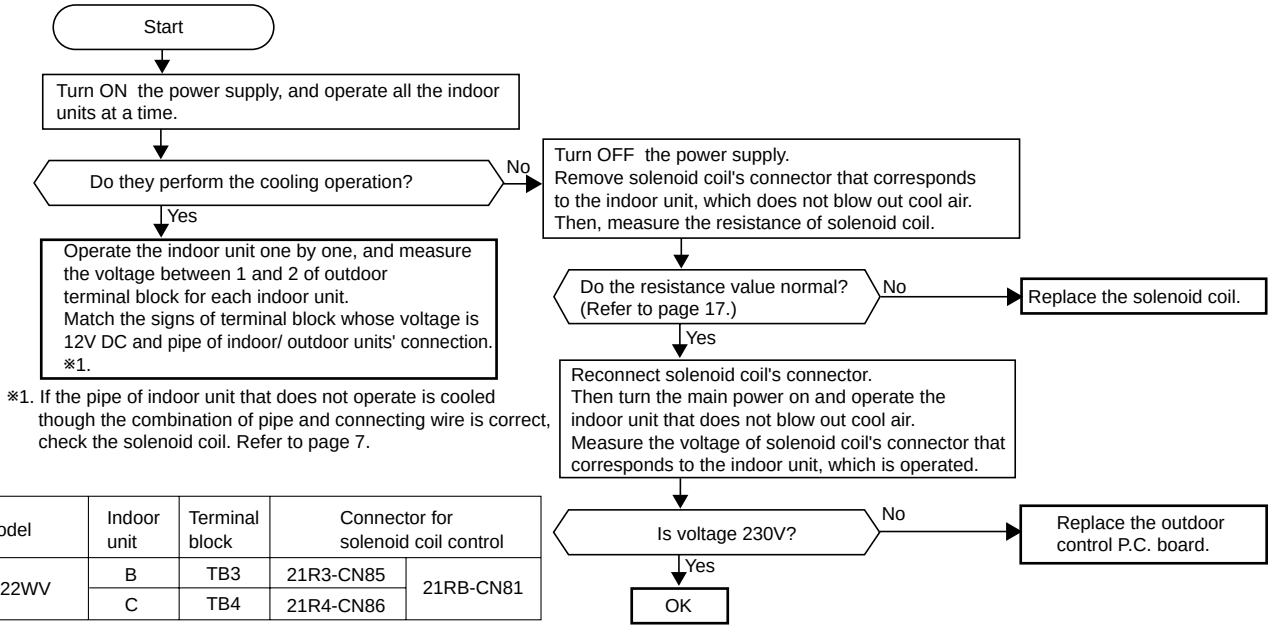


※ 1 Set the switch (SW2-②) on indoor electronic control P.C. board to MUX type, when the outdoor unit is MUX type.
If the setting is MUH or MXZ type, the unit does not work.
Refer to MU & MUX TYPE / MUH& MXZ TYPE SWITCH OVER on service manual OB307 REVISED EDITON-C (11-6.1.) or OB329 (9-4.1.).

Cool air doesn't blow out although indoor unit is operating.

Ⓓ Check of indoor / outdoor units' connection and outdoor unit

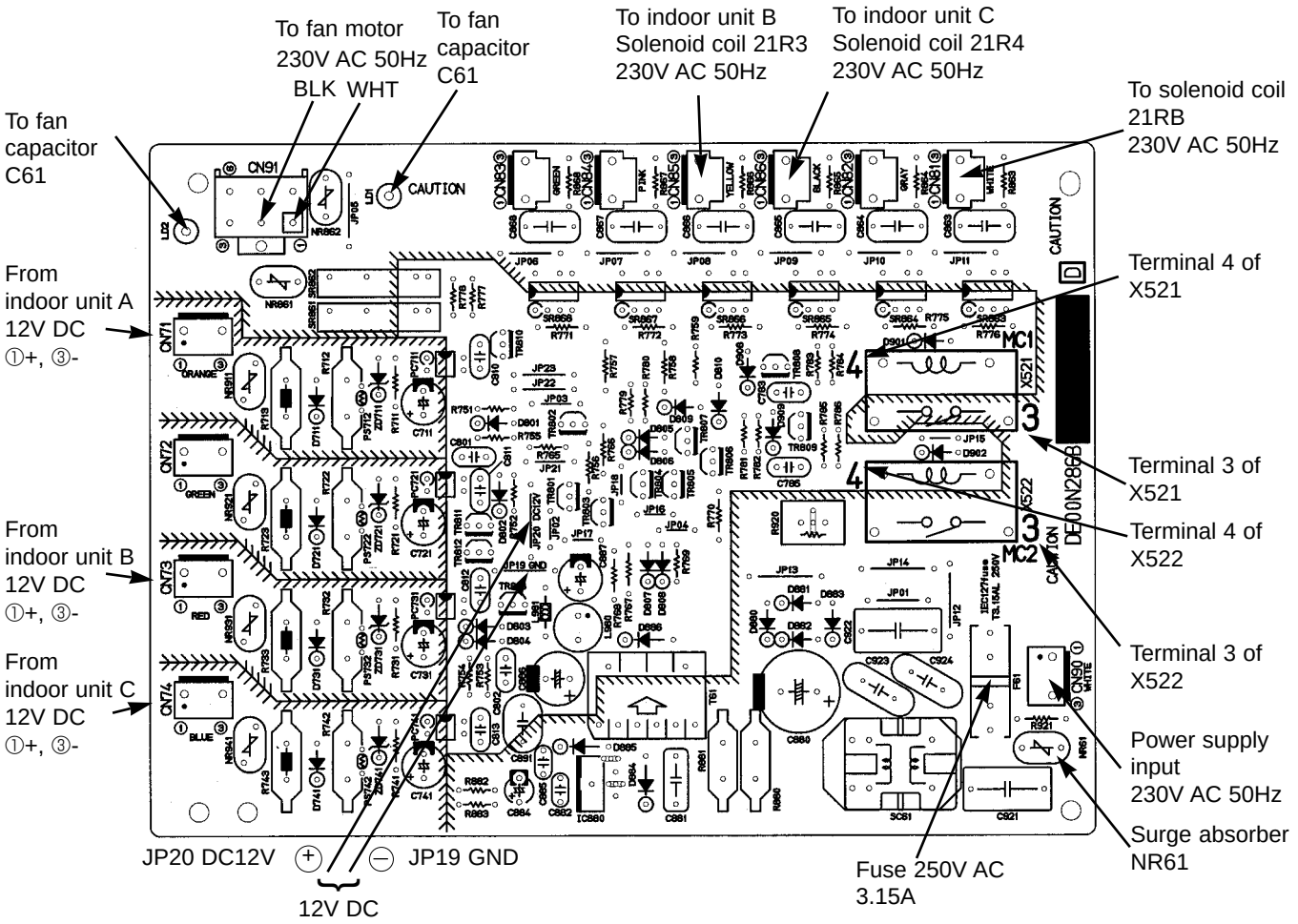
※ In case of troubleshooting, be sure to operate indoor unit by emergency operation switch.



※1. If the pipe of indoor unit that does not operate is cooled though the combination of pipe and connecting wire is correct, check the solenoid coil. Refer to page 7.

Model	Indoor unit	Terminal block	Connector for solenoid coil control	
MUX-A22WV	B	TB3	21R3-CN85	21RB-CN81
	C	TB4	21R4-CN86	

TEST POINT DIAGRAM AND VOLTAGE
MUX-A22WV - E1
Outdoor control P.C. board

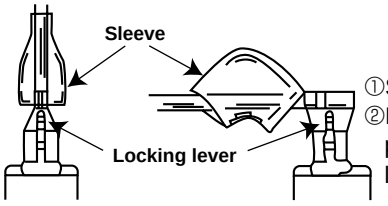


12 DISASSEMBLY INSTRUCTIONS

<"Terminal with lock mechanism" Detaching points>

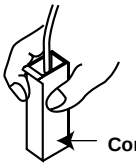
In case of terminal with lock mechanism, detach the terminal as shown below.
There are two types (Refer to (1) and (2)) of the terminal with lock mechanism.
The terminal with no lock mechanism can be removed by pulling it out.
Check the shape of the terminal and work.

(1) Slide the sleeve and check if there is a locking lever or not.



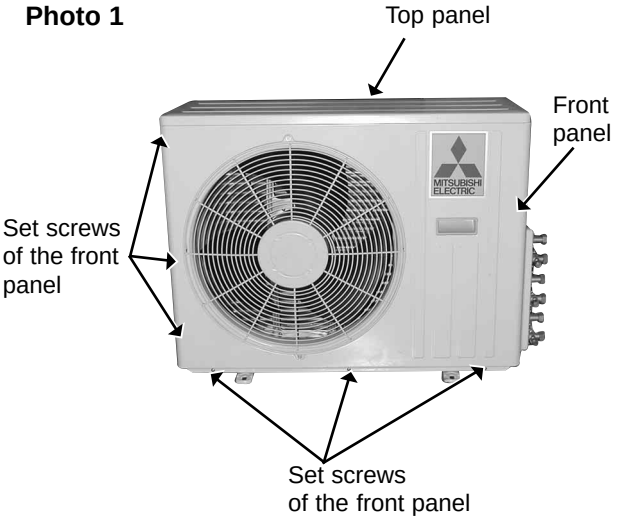
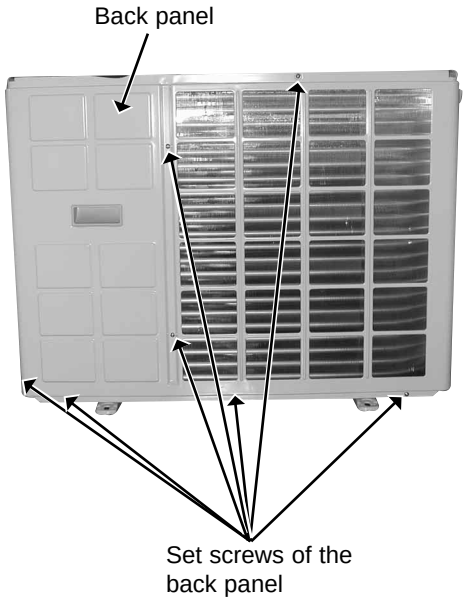
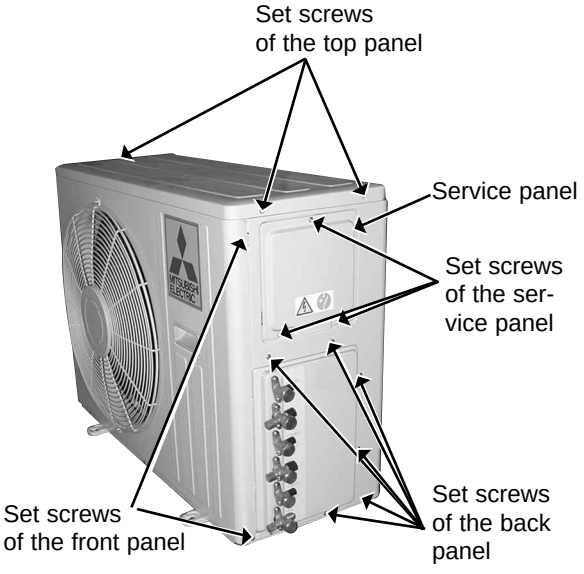
①Slide the sleeve.
②Pull the terminal while pushing the locking lever.

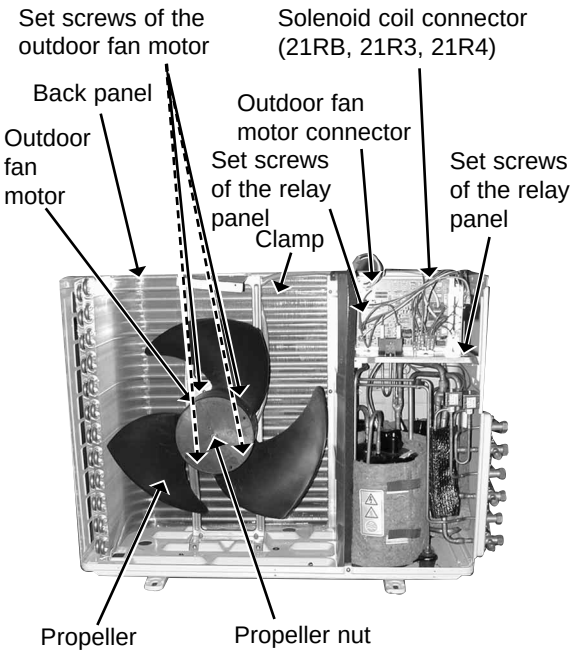
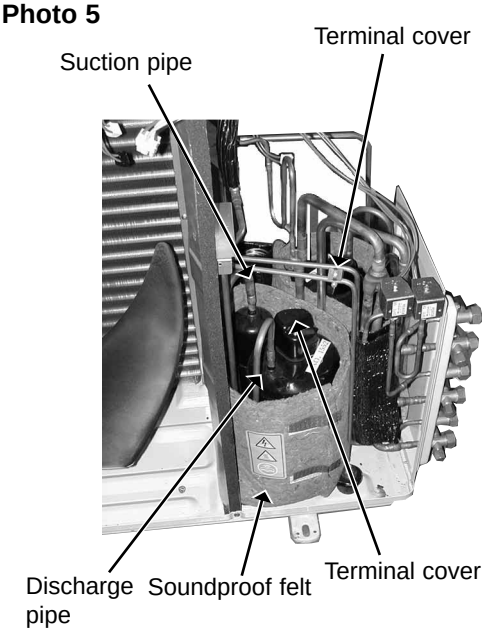
(2) The terminal with this connector is a terminal with lock mechanism



①Hold the sleeve, and pull out the terminal slowly.

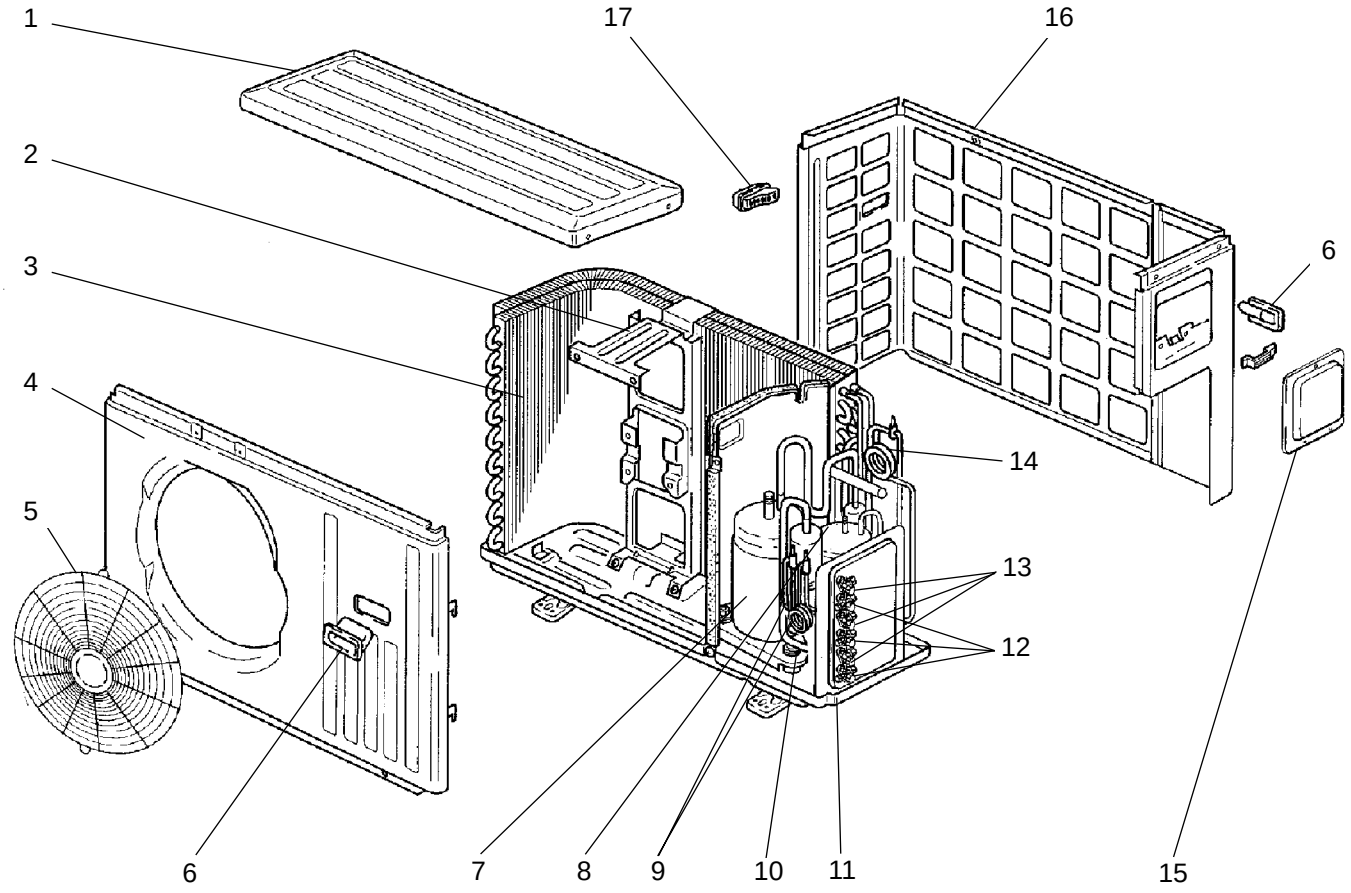
12-1. MUX-A22WV -E1 OUTDOOR UNIT

OPERATING PROCEDURE	PHOTOS
1.Removing the cabinet (1) Remove the screws of the top panel. (2) Remove the screws of the service panel. (3) Remove the top panel. (4) Remove the service panel. (5) Remove the screws of the front panel. (6) Remove the front panel. (7) Remove the screws of the back panel. (8) Remove the back panel.	**Photo 1** 
Photo 3  	**Photo 2** 

OPERATING PROCEDURE	PHOTOS
2. Removing the relay panel (1) Remove the cabinet. (Refer to 1.) (2) Disconnect the following connectors. ・Outdoor fan motor ・Solenoid coil (21RB, 21R3, 21R4)	**Photo 4** 
3. Removing the propeller (1) Remove the cabinet. (Refer to 1.) (2) Remove the propeller nut. (3) Remove the propeller. **NOTE : Loose the propeller in the rotating direction for removal.** When attaching the propeller, align the mark on the propeller and the motor shaft cut section. Set the propeller in position by using the cut on the shaft and the mark on the propeller.	
4. Removing the outdoor fan motor (1) Remove the cabinet. (Refer to 1.) (2) Remove the propeller. (Refer to 3.) (3) Remove the clamp of outdoor fan motor lead wire and disconnect the outdoor fan motor connector. (4) Remove the screws fixing the outdoor fan motor. (5) Remove the outdoor fan motor.	
5. Removing the compressor (A, B) (1) Remove the cabinet. (Refer to 1.) (2) Remove the relay panel. (3) Remove the soundproof felt. (4) Remove the terminal cover on the compressor. (5) Disconnect lead wires from the compressor. (6) Recover gas from the refrigerant circuit. (7) Disconnect the welded part of the discharge pipe. (8) Disconnect the welded part of the suction pipe. (9) Remove nuts fixing the compressor. (10) Remove the compressor. **NOTE** ● Before using a burner, reclaim gas from the pipes until the pressure gauge shows 0 kg/cm^2 (0 MPa). ● Use the burner under the condition that gas can be recovered even when the inner pressure rises by heat.	**Photo 5** 
6. Removing the compressor (C) (1) Remove the cabinet. (Refer to 1.) (2) Remove the relay panel. (Refer to 2.) (3) Remove the screws fixing back panel. (4) Remove the back panel. (5) Remove the soundproof felt. (6) Remove the terminal cover on the compressor. (7) Disconnect lead wires from the compressor. (8) Recover gas from the refrigerant circuit. (9) Disconnect the welded part of the discharge pipe. (10) Disconnect the welded part of the suction pipe. (11) Remove nuts fixing the compressor. (12) Remove the compressor. **NOTE** ● Before using a burner, reclaim gas from the pipes until the pressure gauge shows 0 kg/cm^2 (0 MPa). ● Use the burner under the condition that gas can be recovered even when the inner pressure rises by heat.	

13 PARTS LIST

MUX-A22WV - E1
13-1. OUTDOOR UNIT STRUCTURAL PARTS



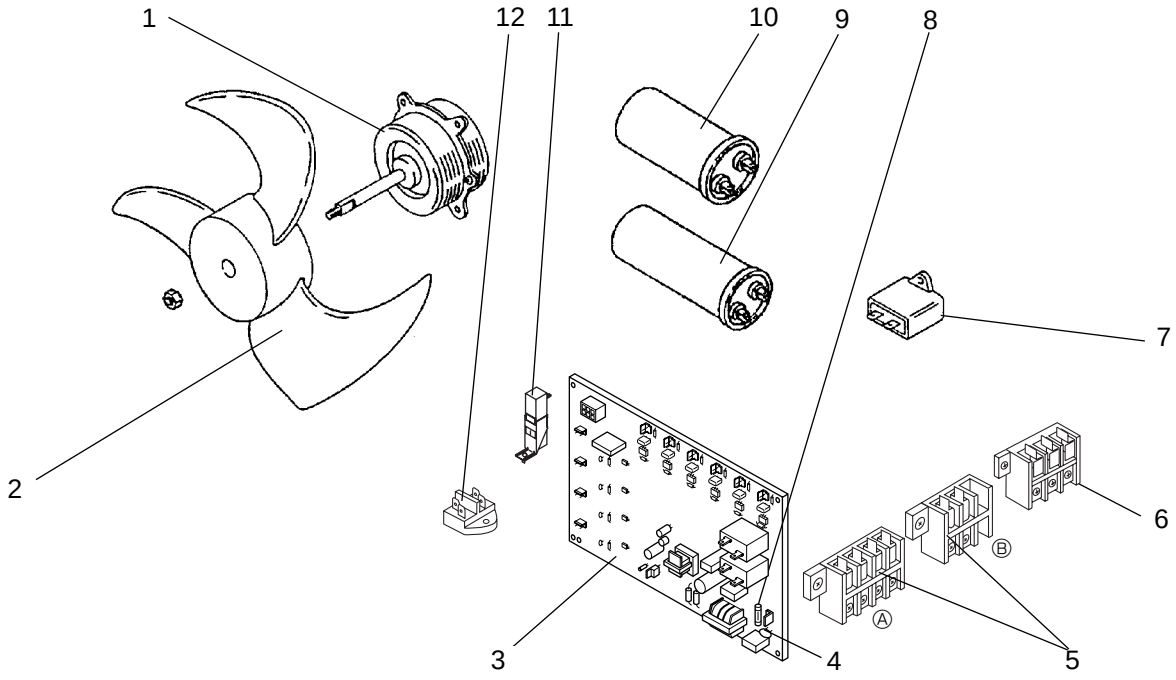
Part numbers that are circled are not shown in the illustration.

No.	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty / unit MUX-A22WV- E1	Remarks
1	E02 819 297	TOP PANEL		1	NEW WHITE (Brigter)
2	E02 636 515	MOTOR SUPPORT		1	
3	E02 756 630	OUTDOOR HEAT EXCHANGER		1	
4	E02 737 232	CABINET		1	NEW WHITE (Brigter)
5	E02 819 521	FAN GUARD		1	NEW WHITE (Brigter)
6	E02 819 009	HANDLE		2	NEW WHITE (Brigter)
7	E02 742 900	COMPRESSOR	MC2	1	RN092VHSHT
8	E02 744 900	COMPRESSOR	MC1	1	RN145VHSHT
9	E02 289 936	CAPILLARY TUBE	CT1, CT3, CT4	3	ϕ3.0×ϕ1.6×900
	E02 134 936	CAPILLARY TUBE	CT2	1	ϕ3.0×ϕ1.6×700
10	E02 075 506	COMPRESSOR RUBBER SET		6	3RUBBERS/SET
11	E02 756 290	BASE		1	NEW WHITE (Brigter)
12	E02 756 661	STOP VALVE (GAS)		1	ϕ12.7
	E02 757 661	STOP VALVE (GAS)		2	ϕ9.52
13	E02 756 662	STOP VALVE (LIQ)		3	ϕ6.35
14	E02 024 936	CAPILLARY TUBE	CT5	1	ϕ3.0×ϕ1.4×1000
15	E02 756 245	SERVICE PANEL		1	NEW WHITE (Brigter)
16	E02 757 233	BACK PANEL (OUT)		1	NEW WHITE (Brigter)
17	E02 817 009	HANDLE		1	NEW WHITE (Brigter)
⑱	E02 637 490	SOLENOID COIL	21RB	1	
⑲	E02 652 490	SOLENOID COIL (B)	21R3	1	
⑳	E02 652 491	SOLENOID COIL (C)	21R4	1	
㉑	E02 755 492	SOLENOID VALVE		2	
㉒	E02 759 492	SOLENOID VALVE		1	

MUX-A22WV - E1

13-2. OUTDOOR UNIT

FUNCTIONAL PARTS AND ELECTRICAL PARTS



No.	Part No.	Part Name	Symbol in Wiring Diagram	Q'ty / unit	Remarks
				MUX-A22WV- E1	
1	E02 756 301	OUTDOOR FAN MOTOR	MF61	1	RA6V60-□□
2	E02 214 501	PROPELLER		1	
3	E02 757 444	OUTDOOR CONTROL P.C. BOARD		1	
4	E02 085 385	SURGE ABSORBER	NR61	1	
5	E02 637 374	TERMINAL BLOCK	TB2	1	4P FIGURE Ⓐ
	E02 637 377	TERMINAL BLOCK	TB3	1	3P FIGURE Ⓑ
6	E02 756 374	TERMINAL BLOCK	TB1	1	3P
7	E02 138 351	OUTDOOR FAN CAPACITOR	C61	1	3.0μF/440V AC
8	E02 127 382	FUSE	F61	1	3.15A
9	E02 742 353	COMPRESSOR CAPACITOR	C2	1	20μF/450V AC
10	E02 667 353	COMPRESSOR CAPACITOR	C1	1	30μF/450V AC
11	E02 128 383	SURGE ABSORBER	DSAR	1	
12	E07 056 374	TERMINAL BLOCK	TB4	1	

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