

TOSHIBA
Carrier

SERVICE MANUAL

AIR-CONDITIONER

MULTI TYPE

INDOOR UNIT

4-Way Cassette Type

MMU-AP0072H2UL-1

**MMU-AP0072H2UL, MMU-AP0092H2UL,
MMU-AP0122H2UL, MMU-AP0152H2UL,
MMU-AP0182H2UL, MMU-AP0212H2UL,
MMU-AP0242H2UL, MMU-AP0302H2UL,
MMU-AP0362H2UL, MMU-AP0422H2UL**

Compact 4-Way Cassette Type

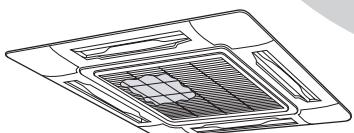
**MMU-AP0071MH2UL, MMU-AP0091MH2UL,
MMU-AP0121MH2UL, MMU-AP0151MH2UL,
MMU-AP0181MH2UL**

Ceiling Type

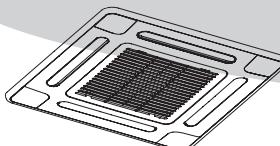
**MMC-AP0181H2UL, MMC-AP0241H2UL,
MMC-AP0361H2UL, MMC-AP0421H2UL**

High Wall Type

**MMK-AP0073H2UL, MMK-AP0093H2UL,
MMK-AP0123H2UL, MMK-AP0153H2UL,
MMK-AP0183H2UL, MMK-AP0243H2UL**



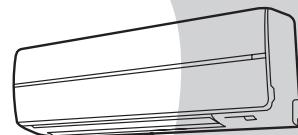
4-Way Cassette Type



Compact 4-Way Cassette Type



Ceiling Type



High Wall Type

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SAFETY CAUTION

The important contents concerned to the safety are described on the product itself and on this Service Manual.

Please read this Service Manual after understanding the described items thoroughly in the following contents (Indications/Illustrated marks), and keep them. The manufacturer shall not assume any liability for the damage caused by not observing the description of this manual.

[Explanation of indications]

Indication	Explanation
 DANGER	Indicates contents assumed that an imminent danger causing a death or serious injury of the repair engineers and the third parties when an incorrect work has been executed.
 WARNING	Indicates possibilities assumed that a danger causing a death or serious injury of the repair engineers, the third parties, and the users due to troubles of the product after work when an incorrect work has been executed.
 CAUTION	Indicates contents assumed that an injury or property damage (*) may be caused on the repair engineers, the third parties, and the users due to troubles of the product after work when an incorrect work has been executed.

* Property damage : Enlarged damage concerned to property, furniture, and domestic animal/pet

[Explanation of illustrated marks]

Mark	Explanation
	Indicates prohibited items (Forbidden items to do) The sentences near an illustrated mark describe the concrete prohibited contents.
	Indicates mandatory items (Compulsory items to do) The sentences near an illustrated mark describe the concrete mandatory contents.
	Indicates cautions (Including danger/warning) The sentences or illustration near or in an illustrated mark describe the concrete cautious contents.

[Confirmation of warning label on the main unit]

Confirm that labels are indicated on the specified positions

(Refer to the Parts disassembly diagram (Outdoor unit).)

If removing the label during parts replace, stick it as the original.

 DANGER	
	Turn “OFF” the breaker before removing the front panel and cabinet, otherwise an electric shock is caused by high voltage resulted in a death or injury. During operation, a high voltage with 400V or higher of circuit (*) at secondary circuit of the high-voltage transformer is applied. If touching a high voltage with the naked hands or body, an electric shock is caused even if using an electric insulator. * .# For details, refer to the electric wiring diagram.
	When removing the front panel or cabinet, execute short-circuit and discharge between high-voltage capacitor terminals. If discharge is not executed, an electric shock is caused by high voltage resulted in a death or injury. After turning off the breaker, high voltage also keeps to apply to the high-voltage capacitor.
	Do not turn on the breaker under condition that the front panel and cabinet are removed. An electric shock is caused by high voltage resulted in a death or injury.

⚠ WARNING

	Before troubleshooting or repair work, check the ground wire is connected to the ground terminals of the main unit, otherwise an electric shock is caused when a leak occurs. If the ground wire is not correctly connected, contact an electric engineer for rework.
	Do not modify the products. Do not also disassemble or modify the parts. It may cause a fire, electric shock or injury.
	For spare parts, use those specified (*). If unspecified parts are used, a fire or electric shock may be caused. *: For details, refer to the parts list.
	Before troubleshooting or repair work, do not bring a third party (a child, etc.) except the repair engineers close to the equipment. It causes an injury with tools or disassembled parts. Please inform the users so that the third party (a child, etc.) does not approach the equipment.
	Connect the cut-off lead wires with crimp contact, etc, put the closed end side upward and then apply a water-cut method, otherwise a leak or production of fire is caused at the users' side.
	<p>When repairing the refrigerating cycle, take the following measures.</p> <ol style="list-style-type: none"> 1) Be attentive to fire around the cycle. When using a gas stove, etc, be sure to put out fire before work; otherwise the oil mixed with refrigerant gas may catch fire. 2) Do not use a welder in the closed room. When using it without ventilation, carbon monoxide poisoning may be caused. 3) Do not bring inflammables close to the refrigerant cycle, otherwise fire of the welder may catch the inflammables.
	<p>Check the used refrigerant name and use tools and materials of the parts which match with it. For the products which use R410A refrigerant, the refrigerant name is indicated at a position on the outdoor unit where is easy to see. To prevent miss-charging, the route of the service port is changed from one of the former R22.</p> <p>Do not use any refrigerant different from the one specified for complement or replacement. Otherwise, abnormally high pressure may be generated in the refrigeration cycle, which may result in a failure or explosion of the product or an injury to your body.</p> <p>For an air conditioner which uses R410A, never use other refrigerant than R410A. For an air conditioner which uses other refrigerant (R22, etc.), never use R410A. If different types of refrigerant are mixed, abnormal high pressure generates in the refrigerating cycle and an injury due to breakage may be caused.</p> <p>Do not charge refrigerant additionally. If charging refrigerant additionally when refrigerant gas leaks, the refrigerant composition in the refrigerating cycle changes resulted in change of air conditioner characteristics or refrigerant over the specified standard amount is charged and an abnormal high pressure is applied to the inside of the refrigerating cycle resulted in cause of breakage or injury. Therefore if the refrigerant gas leaks, recover the refrigerant in the air conditioner, execute vacuuming, and then newly recharge the specified amount of liquid refrigerant. In this time, never charge the refrigerant over the specified amount.</p> <p>When recharging the refrigerant in the refrigerating cycle, do not mix the refrigerant or air other than R410A into the specified refrigerant. If air or others is mixed with the refrigerant, abnormal high pressure generates in the refrigerating cycle resulted in cause of injury due to breakage.</p> <p>After installation work, check the refrigerant gas does not leak. If the refrigerant gas leaks in the room, poisonous gas generates when gas touches to fire such as fan heater, stove or cocking stove though the refrigerant gas itself is innocuous.</p> <p>Never recover the refrigerant into the outdoor unit. When the equipment is moved or repaired, be sure to recover the refrigerant with recovering device. The refrigerant cannot be recovered in the outdoor unit; otherwise a serious accident such as breakage or injury is caused.</p>
	After repair work, surely assemble the disassembled parts, and connect and lead the removed wires as before. Perform the work so that the cabinet or panel does not catch the inner wires. If incorrect assembly or incorrect wire connection was done, a disaster such as a leak or fire is caused at user's side.

⚠️ WARNING

 Insulator check	<p>After the work has finished, be sure to use an insulation tester set (500V Megger) to check the resistance is $2M\Omega$ or more between the charge section and the non-charge metal section (Ground position).</p> <p>If the resistance value is low, a disaster such as a leak or electric shock is caused at user's side.</p>
 Ventilation	<p>When the refrigerant gas leaks during work, execute ventilation.</p> <p>If the refrigerant gas touches to a fire, poisonous gas generates. A case of leakage of the refrigerant and the closed room full with gas is dangerous because a shortage of oxygen occurs. Be sure to execute ventilation.</p>
 Be attentive to electric shock	<p>When checking the circuit inevitably under condition of the power-ON, use rubber gloves and others not to touch to the charging section.</p> <p>If touching to the charging section, an electric shock may be caused.</p>
 Compulsion	<p>When the refrigerant gas leaks, find up the leaked position and repair it surely.</p> <p>If the leaked position cannot be found up and the repair work is interrupted, pump-down and tighten the service valve, otherwise the refrigerant gas may leak into the room. The poisonous gas generates when gas touches to fire such as fan heater, stove or cocking stove though the refrigerant gas itself is innocuous.</p> <p>When installing equipment which includes a large amount of charged refrigerant such as a multi air conditioner in a sub-room, it is necessary that the density does not the limit even if the refrigerant leaks.</p> <p>If the refrigerant leaks and exceeds the limit density, an accident of shortage of oxygen is caused.</p> <p>For the installation/moving/reinstallation work, follow to the Installation Manual.</p> <p>If an incorrect installation is done, a trouble of the refrigerating cycle, water leak, electric shock or fire is caused.</p>
 Check after repair	<p>After repair work has finished, check there is no trouble.</p> <p>If check is not executed, a fire, electric shock or injury may be caused. For a check, turn off the power breaker.</p>
 Check after reinstallation	<p>After repair work (installation of front panel and cabinet) has finished, execute a test run to check there is no generation of smoke or abnormal sound.</p> <p>If check is not executed, a fire or an electric shock is caused. Before test run, install the front panel and cabinet.</p> <p>Check the following items after reinstallation.</p> <ol style="list-style-type: none"> 1) The ground wire is correctly connected. 2) The power cord is not caught in the product. 3) There is no inclination or unsteadiness and the installation is stable. <p>If check is not executed, a fire, an electric shock or an injury is caused.</p>

⚠️ CAUTION

 Put on gloves	<p>Be sure to put on the gloves (*) and a long sleeved shirt: otherwise an injury may be caused with the parts, etc.</p> <p>(*) Heavy gloves such as work gloves</p>
 Cooling check	<p>When the power was turned on, start to work after the equipment has been sufficiently cooled.</p> <p>As temperature of the compressor pipes and others became high due to cooling/heating operation, a burn may be caused.</p>

- **New Refrigerant (R410A)**

This air conditioner adopts a new HFC type refrigerant (R410A) which does not deplete the ozone layer.

1. Safety Caution Concerned to New Refrigerant

The pressure of R410A is high 1.6 times of that of the former refrigerant (R22).

Accompanied with change of refrigerant, the refrigerating oil has been also changed.

Therefore, be sure that water, dust, the former refrigerant or the former refrigerating oil is not mixed into the refrigerating cycle of the air conditioner with new refrigerant during installation work or service work.

If an incorrect work or incorrect service is performed, there is a possibility to cause a serious accident.

Use the tools and materials exclusive to R410A to purpose a safe work.

2. Cautions on Installation/Service

1) Do not mix the other refrigerant or refrigerating oil.

For the tools exclusive to R410A, shapes of all the joints including the service port differ from those of the former refrigerant in order to prevent mixture of them.

2) As the use pressure of the new refrigerant is high, use material thickness of the pipe and tools which are specified for R410A.

3) In the installation time, use clean pipe materials and work with great attention so that water and others do not mix in because pipes are affected by impurities such as water, oxide scales, oil, etc.

Use the clean pipes.

Be sure to brazing with flowing nitrogen gas. (Never use gas other than nitrogen gas.)

4) For the ground protection, use a vacuum pump for air purge.

5) R410A refrigerant is azeotropic mixture type refrigerant.

Therefore use liquid type to charge the refrigerant. (If using gas for charging, composition of the refrigerant changes and then characteristics of the air conditioner change.)

3. Pipe Materials

For the refrigerant pipes, copper pipe and joints are mainly used.

It is necessary to select the most appropriate pipes to conform to the standard.

Use clean material in which impurities adhere inside of pipe or joint to a minimum.

1) Copper pipe

<Piping>

The pipe thickness, flare finishing size, flare nut and others differ according to a refrigerant type.

When using a long copper pipe for R410A, it is recommended to select "Copper or copper-base pipe without seam" and one with bonded oil amount 0.0001 lbs / 32' 10" (40mg / 10m) or less.

Also do not use crushed, deformed, discolored (especially inside) pipes.

(Impurities cause clogging of expansion valves and capillary tubes.)

<Flare nut>

Use the flare nuts which are attached to the air conditioner unit.

2) Joint

The flare joint and socket joint are used for joints of the copper pipe.

The joints are rarely used for installation of the air conditioner. However clear impurities when using them.

4. Tools

1. Required Tools for R410A

Mixing of different types of oil may cause a trouble such as generation of sludge, clogging of capillary, etc. Accordingly, the tools to be used are classified into the following three types.

- 1) Tools exclusive for R410A (Those which cannot be used for conventional refrigerant (R22))
- 2) Tools exclusive for R410A, but can be also used for conventional refrigerant (R22)
- 3) Tools commonly used for R410A and for conventional refrigerant (R22)

The table below shows the tools exclusive for R410A and their interchangeability.

Tools exclusive for R410A (The following tools for R410A are required.)

Tools whose specifications are changed for R410A and their interchangeability

No.	Used tool	Usage	R410A air conditioner installation		Conventional air conditioner installation
			Existence of new equipment for R410A	Whether conven- tional equipment can be used	Whether conventional equipment can be used
①	Flare tool	Pipe flaring	Yes	*(Note)	Yes
②	Copper pipe gauge for adjusting projection margin	Flaring by conventional flare tool	Yes	*(Note)	*(Note)
③	Torque wrench	Tightening of flare nut	Yes	No	No
④	Gauge manifold	Evacuating, refrigerant charge, run check, etc.	Yes	No	No
⑤	Charge hose				
⑥	Vacuum pump adapter	Vacuum evacuating	Yes	No	Yes
⑦	Electronic balance for refrigerant charging	Refrigerant charge	Yes	Yes	Yes
⑧	Refrigerant cylinder	Refrigerant charge	Yes	No	No
⑨	Leakage detector	Gas leakage check	Yes	No	Yes

(Note) When flaring is carried out for R410A using the conventional flare tools, adjustment of projection margin is necessary. For this adjustment, a copper pipe gauge, etc. are necessary.

General tools (Conventional tools can be used.)

In addition to the above exclusive tools, the following equipments which serve also for R22 are necessary as the general tools.

- 1) Vacuum pump. Use vacuum pump by attaching vacuum pump adapter.
- 2) Torque wrench
- 3) Pipe cutter
- 4) Reamer
- 5) Pipe bender
- 6) Level vial
- 7) Screwdriver (+, -)
- 8) Spanner or Monkey wrench
- 9) Hole core drill
- 10) Hexagon wrench (Opposite side 4mm)
- 11) Tape measure
- 12) Metal saw

Also prepare the following equipments for other installation method and run check.

- 1) Clamp meter
- 2) Thermometer
- 3) Insulation resistance tester (Megger)
- 4) Electroscope

1. SPECIFICATIONS

1-1. 4-Way Cassette Type

Model name		MMU-	AP0072H2UL-1	AP0072H2UL	AP0092H2UL	AP0122H2UL
Cooling Capacity		kBtu/h	7.5	7.5	9.5	12.0
Heating Capacity		kBtu/h	8.5	8.5	10.5	13.5
Electrical characteristics	Power supply		230 V (208/230V) 1 phase 60Hz			
	Power consumption	kW	0.023	0.021	0.021	0.023
Appearance (Ceiling panel)*		Model	RBC-U31PG(W)-UL*			
Dimension (Ceiling panel)*	Unit	Height	In	10.1 (1.2)*	10.1 (1.2)*	10.1 (1.2)*
		Width	In	33.1 (37.4)*	33.1 (37.4)*	33.1 (37.4)*
		Depth	In	33.1 (37.4)*	33.1 (37.4)*	33.1 (37.4)*
	Packing	Height	In	11.3 (3.9)*	11.3 (3.9)*	11.3 (3.9)*
		Width	In	36.0 (39.8)*	36.0 (39.8)*	36.0 (39.8)*
		Depth	In	37.2 (39.8)*	37.2 (39.8)*	37.2 (39.8)*
Total Weight (Ceiling panel)*	Unit	lbs	42 (10)*	42 (10)*	42 (10)*	42 (10)*
	Packed unit	lbs	51 (15.5)*	51 (15.5)*	51 (15.5)*	51 (15.5)*
Fan unit	Standard air flow (High/Mid/Low)	cfm	550/490/460	470/430/400	470/430/400	550/490/460
	Motor output	W	60	60	60	60
Connection pipe	Gas side	In	3/8"	3/8"	3/8"	3/8"
	Liquid side	In	1/4"	1/4"	1/4"	1/4"
	Drain port (nominal dia.)	In	VP25 (Polyvinyl chloride tube : External Dia. 1-1/4 Internal Dia.1)			
Sound pressure level (High/Mid/Low) (*1)			34/31.5/29.5	32.5/30.5/29	32.5/30.5/29	34/31.5/29.5

* Figures in parentheses are for ceiling panels.

(*1) The actual values in an external operating environment are generally higher than the indicated values due to the contribution from ambient noise.

• About the connection of MMU-AP0072H2UL-1, please refer to DATA BOOK of SMMS-e UL

Model name		MMU-	AP0152H2UL	AP0182H2UL	AP0212H2UL	AP0242H2UL	AP0302H2UL	AP0362H2UL	AP0422H2UL
Cooling Capacity		kBtu/h	15.4	18	21	24	30	36	42
Heating Capacity		kBtu/h	17	20	24	27	34	40	47.5
Electrical characteristics	Power supply		230 V (208/230V) 1 phase 60Hz						
	Power consumption	kW	0.026	0.026	0.036	0.036	0.043	0.088	0.112
Appearance (Ceiling panel)*		Model	RBC-U31PG(W)-UL*						
Dimension (Ceiling panel)*	Unit	Height	In	10.1 (1.2)*	10.1 (1.2)*	10.1 (1.2)*	10.1 (1.2)*	12.6 (1.2)*	12.6 (1.2)*
		Width	In	33.1 (37.4)*	33.1 (37.4)*	33.1 (37.4)*	33.1 (37.4)*	33.1 (37.4)*	33.1 (37.4)*
		Depth	In	33.1 (37.4)*	33.1 (37.4)*	33.1 (37.4)*	33.1 (37.4)*	33.1 (37.4)*	33.1 (37.4)*
	Packing	Height	In	11.3 (3.9)*	11.3 (3.9)*	11.3 (3.9)*	11.3 (3.9)*	13.8 (3.9)*	13.8 (3.9)*
		Width	In	36.0 (39.8)*	36.0 (39.8)*	36.0 (39.8)*	36.0 (39.8)*	36.0 (39.8)*	36.0 (39.8)*
		Depth	In	37.2 (39.8)*	37.2 (39.8)*	37.2 (39.8)*	37.2 (39.8)*	37.2 (39.8)*	37.2 (39.8)*
Total Weight (Ceiling panel)*	Unit	lbs	46 (10)*	46 (10)*	48 (10)*	48 (10)*	48 (10)*	59 (10)*	59 (10)*
	Packed unit	lbs	55 (15.5)*	55 (15.5)*	57 (15.5)*	57 (15.5)*	57 (15.5)*	69 (15.5)*	69 (15.5)*
Fan unit	Standard air flow (High/Mid/Low)	cfm	550/480/440	550/480/440	670/540/490	670/540/490	730/630/510	1,160/840/630	1,250/840/670
	Motor output	W	60	60	60	60	60	150	150
Connection pipe	Gas side	In	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	5/8"
	Liquid side	In	1/4"	1/4"	3/8"	3/8"	3/8"	3/8"	3/8"
	drain port (nominal dia.)	In	VP25 (Polyvinyl chloride tube : External Dia. 1-1/4 Internal Dia.1)						
Sound pressure level (High/Mid/Low) (*1)			35/33/31	35/33/31	38/33/31	38/33/31	41/36.5/34	46/40.5/36.5	48.5/40.5/37.5

* Figures in parentheses are for ceiling panels.

(*1) The actual values in an external operating environment are generally higher than the indicated values due to the contribution from ambient noise.

1-2. Compact 4-Way Cassette Type

Model name		MMU-	AP0071MH2UL	AP0091MH2UL	AP0121MH2UL	AP0151MH2UL	AP0181MH2UL
Cooling Capacity		kBtu/h	7.5	9.5	12	15.4	18
Heating Capacity		kBtu/h	8.5	10.5	13.5	17	20
Electrical characteristics	Power supply		230 V (208/230V) 1 phase 60Hz				
	Power consumption	kW	0.034	0.036	0.038	0.041	0.052
Appearance (Ceiling panel)*		Model	RBC-UM11PG(W)-UL*				
Dimension (Ceiling panel)*	Unit	Height	In	10.6 (1.1)*	10.6 (1.1)*	10.6 (1.1)*	10.6 (1.1)*
		Width	In	22.6 (27.6)*	22.6 (27.6)*	22.6 (27.6)*	22.6 (27.6)*
		Depth	In	22.6 (27.6)*	22.6 (27.6)*	22.6 (27.6)*	22.6 (27.6)*
	Packing	Height	In	12.6 (3.9)*	12.6 (3.9)*	12.6 (3.9)*	12.6 (3.9)*
		Width	In	25.2 (30.7)*	25.2 (30.7)*	25.2 (30.7)*	25.2 (30.7)*
		Depth	In	25.2 (30.7)*	25.2 (30.7)*	25.2 (30.7)*	25.2 (30.7)*
Total Weight (Ceiling panel)*	Unit	lbs	35 (6.6)*	35 (6.6)*	35 (6.6)*	35 (6.6)*	35 (6.6)*
	Packed unit	lbs	42 (13.2)*	42 (13.2)*	42 (13.2)*	42 (13.2)*	42 (13.2)*
Fan unit	Standard air flow (High/Mid/Low)	cfm	320/270/220	330/280/220	330/300/240	390/330/280	450/380/310
	Motor output	W	60	60	60	60	60
Connection pipe	Gas side	In	3/8"	3/8"	3/8"	1/2"	1/2"
	Liquid side	In	1/4"	1/4"	1/4"	1/4"	1/4"
	Drain port (nominal dia.)	In	VP25 (Polyvinyl chloride tube : External Dia. 1-1/4 Internal Dia.1)				
Sound pressure level (High/Mid/Low) (*1)		dB (A)	38.5/35/31	40/35.5/31	40/36/32	42.5/37.5/33	46.5/41.5/36

* Figures in parentheses are for ceiling panels.

(*1) The actual values in an external operating environment are generally higher than the indicated values due to the contribution from ambient noise.

1-3. Ceiling Type

Model name		MMC-	AP0181H2UL	AP0241H2UL	AP0361H2UL	AP0421H2UL
Cooling Capacity		kBtu/h	18	24	36	42
Heating Capacity		kBtu/h	20	27	40	47.5
Electrical characteristics	Power supply		230 V (208/230V) 1 phase 60Hz			
	Power consumption	kW	0.038	0.05	0.091	0.11
Dimension	Unit	Height	In	8.3	8.3	8.3
		Width	In	35.8	46.5	62.8
		Depth	In	26.8	26.8	26.8
	Packing	Height	In	12.4	12.4	12.4
		Width	In	39.1	50.0	66.1
		Depth	In	32.0	32.0	32.0
Total Weight	Unit	lbs	46	57	75	75
	Packed unit	lbs	62	75	97	97
Fan unit	Standard air flow (High/Mid/Low)	cfm	410/360/320	590/530/470	880/770/680	950/820/730
	Motor output	W	60	60	120	120
Connection pipe	Gas side	In	1/2"	5/8"	5/8"	5/8"
	Liquid side	In	1/4"	3/8"	3/8"	3/8"
	Drain port (nominal dia.)	In	VP20 (Polyvinyl chloride tube : External Dia. 1 Internal Dia.0.79)			
Sound pressure level (High/Mid/Low) (*1)		dB (A)	38.5/35/32.5	40.5/38/35	44/41/37	46/42.5/39.5

(*1) The actual values in an external operating environment are generally higher than the indicated values due to the contribution from ambient noise.

1-4. High Wall Type

Model name		MMK-	AP0073H2UL	AP0093H2UL	AP0123H2UL	AP0153H2UL	AP0183H2UL	AP0243H2UL
Cooling Capacity		kBtu/h	7.5	9.5	12	15.4	18	24
Heating Capacity		kBtu/h	8.5	10.5	13.5	17	20	27
Electrical characteristics	Power supply		230 V (208/230V) 1 phase 60Hz					
	Power consumption	kW	0.018	0.021	0.021	0.043	0.043	0.05
Dimension	Unit	Height	In	12.6	12.6	12.6	12.6	12.6
		Width	In	41.3	41.3	41.3	41.3	41.3
		Depth	In	9.0	9.0	9.0	9.0	9.0
	Packing	Height	In	15.7	15.7	15.7	15.7	15.7
		Width	In	43.9	43.9	43.9	43.9	43.9
		Depth	In	11.9	11.9	11.9	11.9	11.9
Total Weight	Unit	lbs	33	33	33	33	33	33
	Packed unit	lbs	42	42	42	42	42	42
Fan unit	Standard air flow (High/Mid/Low)	cfm	340/270/230	350/280/230	350/280/230	490/390/320	490/390/320	600/440/340
	Motor output	W	30	30	30	30	30	30
Connection pipe	Gas side	In	3/8"	3/8"	3/8"	1/2"	1/2"	5/8"
	Liquid side	In	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"
	drain port (nominal dia.)	In	VP16 (Polyvinyl chloride tube : External Dia.0.87 Internal Dia.0.63)					
Sound pressure level (High/Mid/Low) (*1)		dB (A)	36/32.5/30	39/34/30	39/34/30	43/38/34.5	43/38/34.5	47.5/40.5/35

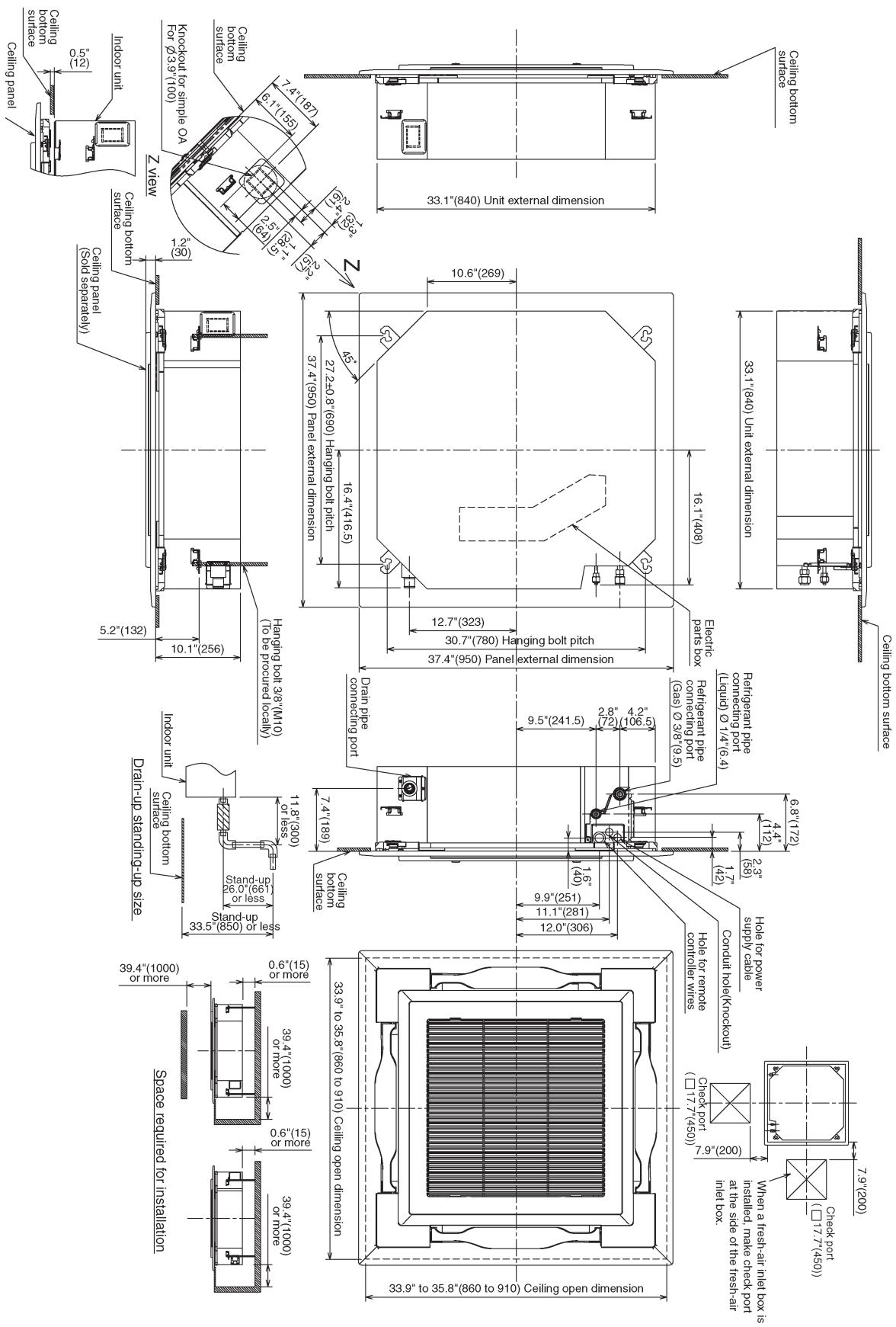
(*1) The actual values in an external operating environment are generally higher than the indicated values due to the contribution from ambient noise.

2. CONSTRUCTION VIEWS (EXTERNAL VIEWS)

2-1. 4-Way Cassette Type

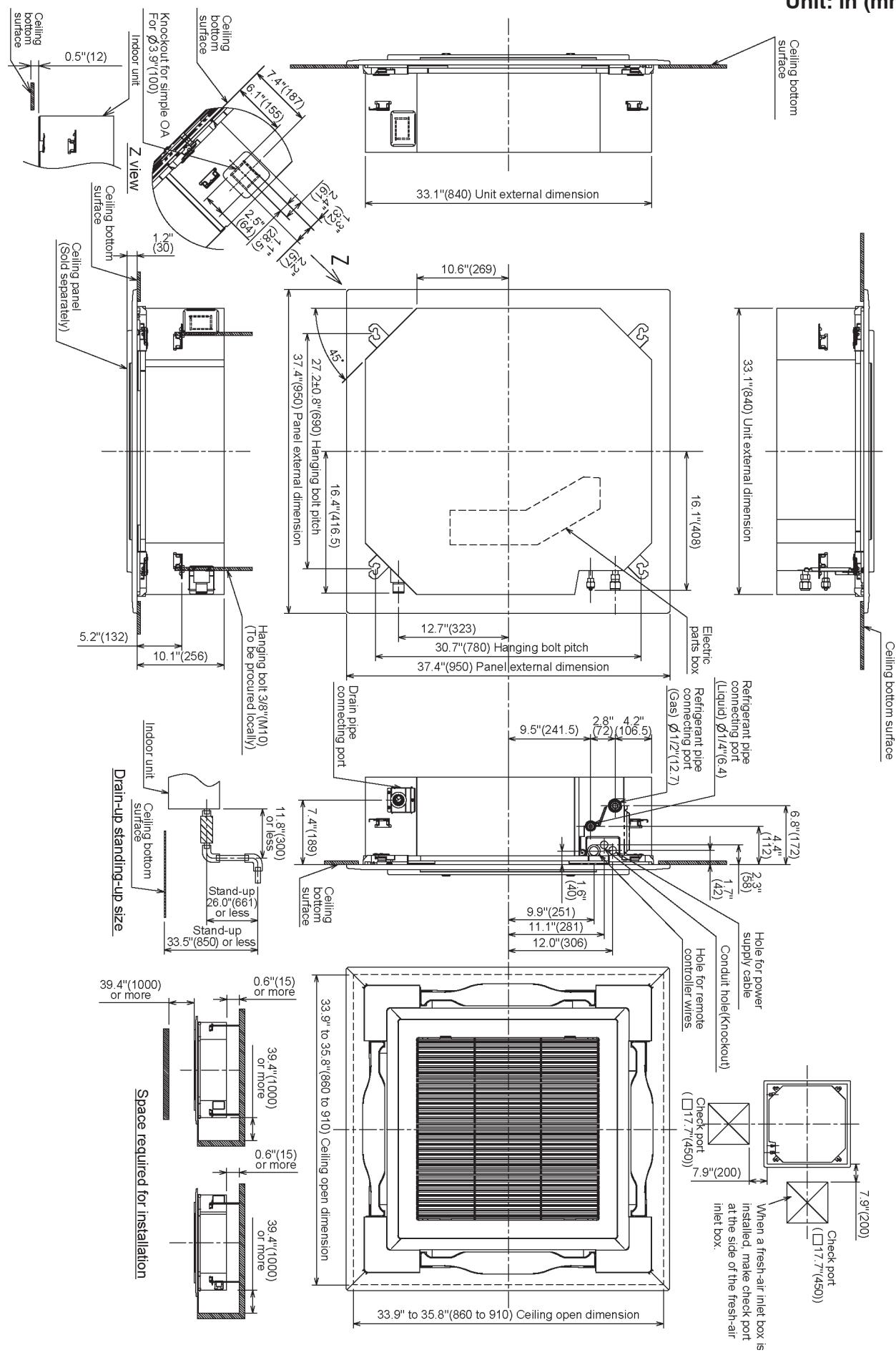
MMU-AP0072H2UL-1, AP0072H2UL, AP0092H2UL, AP0122H2UL

Unit: in (mm)



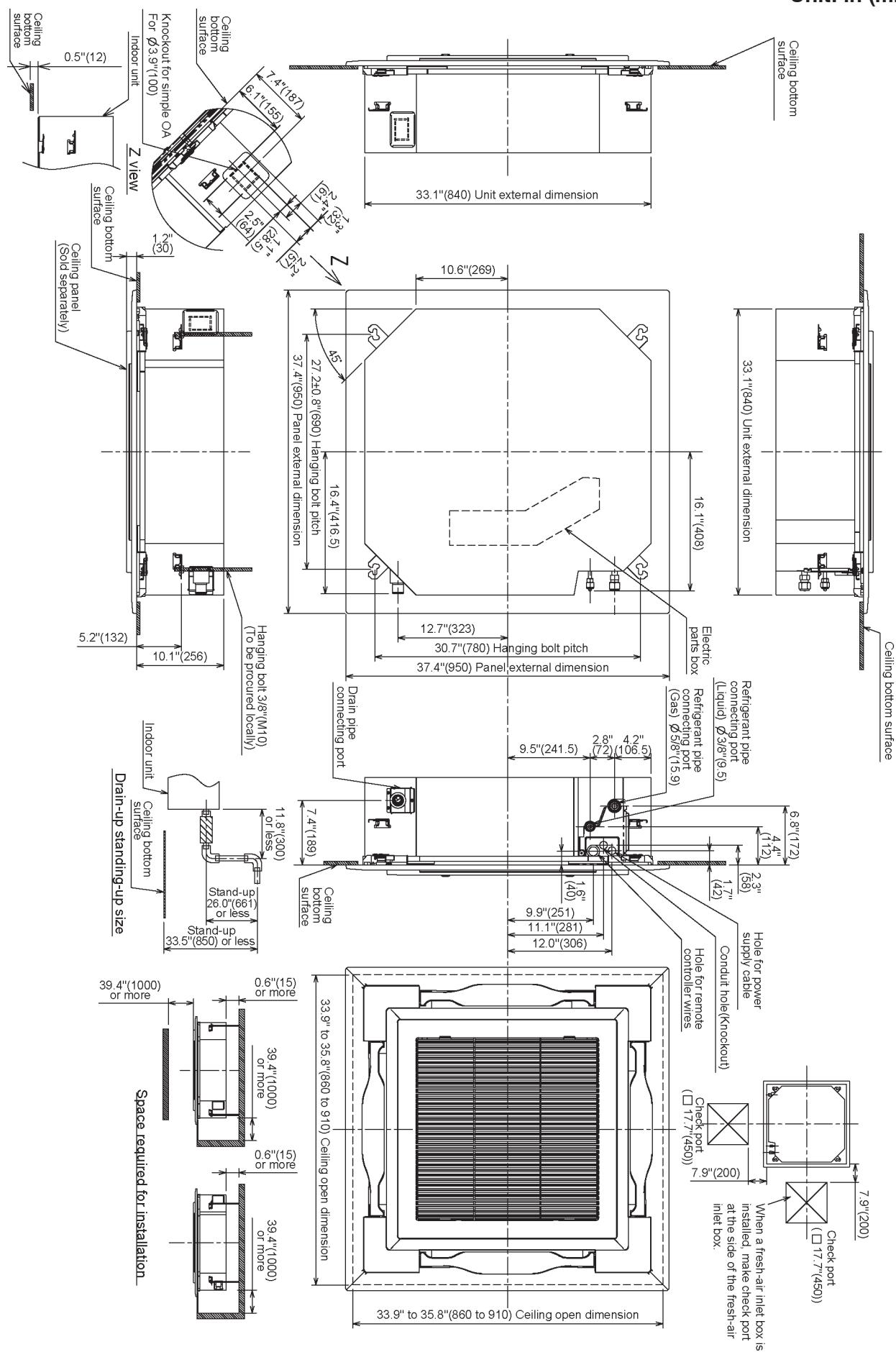
■ MMU-AP0152H2UL, AP0182H2UL

Unit: in (mm)



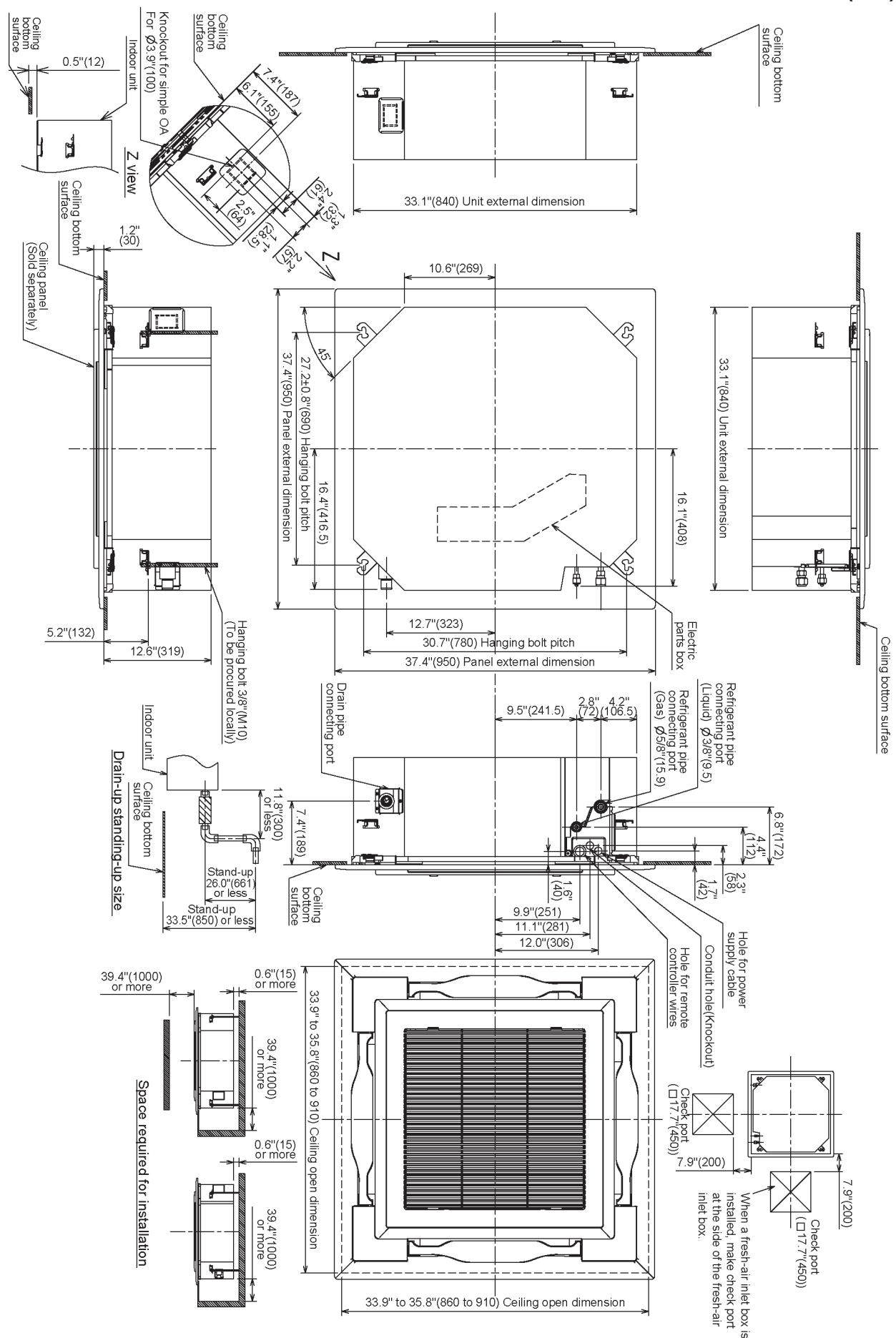
MMU-AP0212H2UL, MMU-AP0242H2UL, MMU-AP0302H2UL

Unit: in (mm)



MMU-AP0362H2UL, MMU-AP0422H2UL

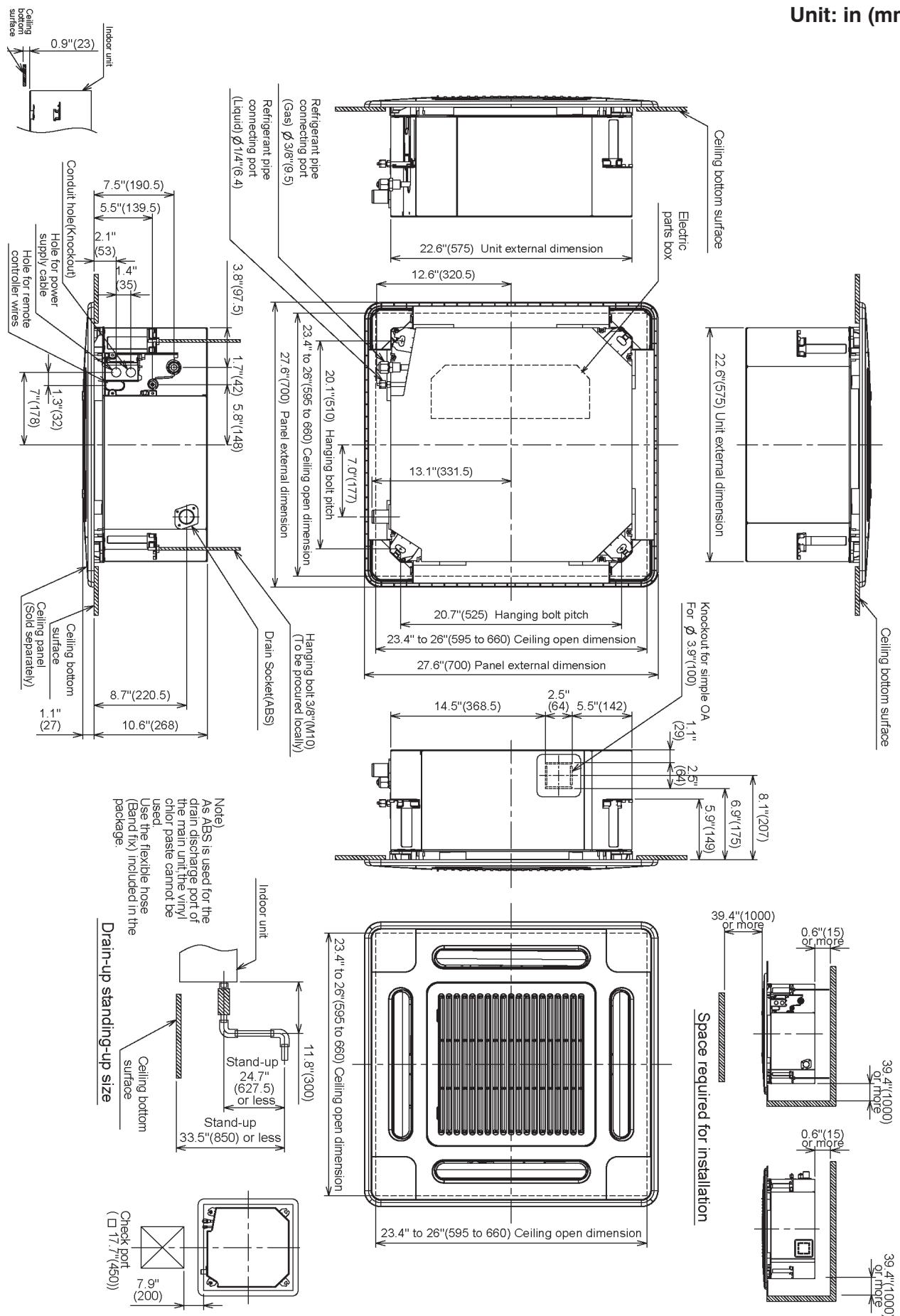
Unit: in (mm)



2-2. Compact 4-Way Cassette Type

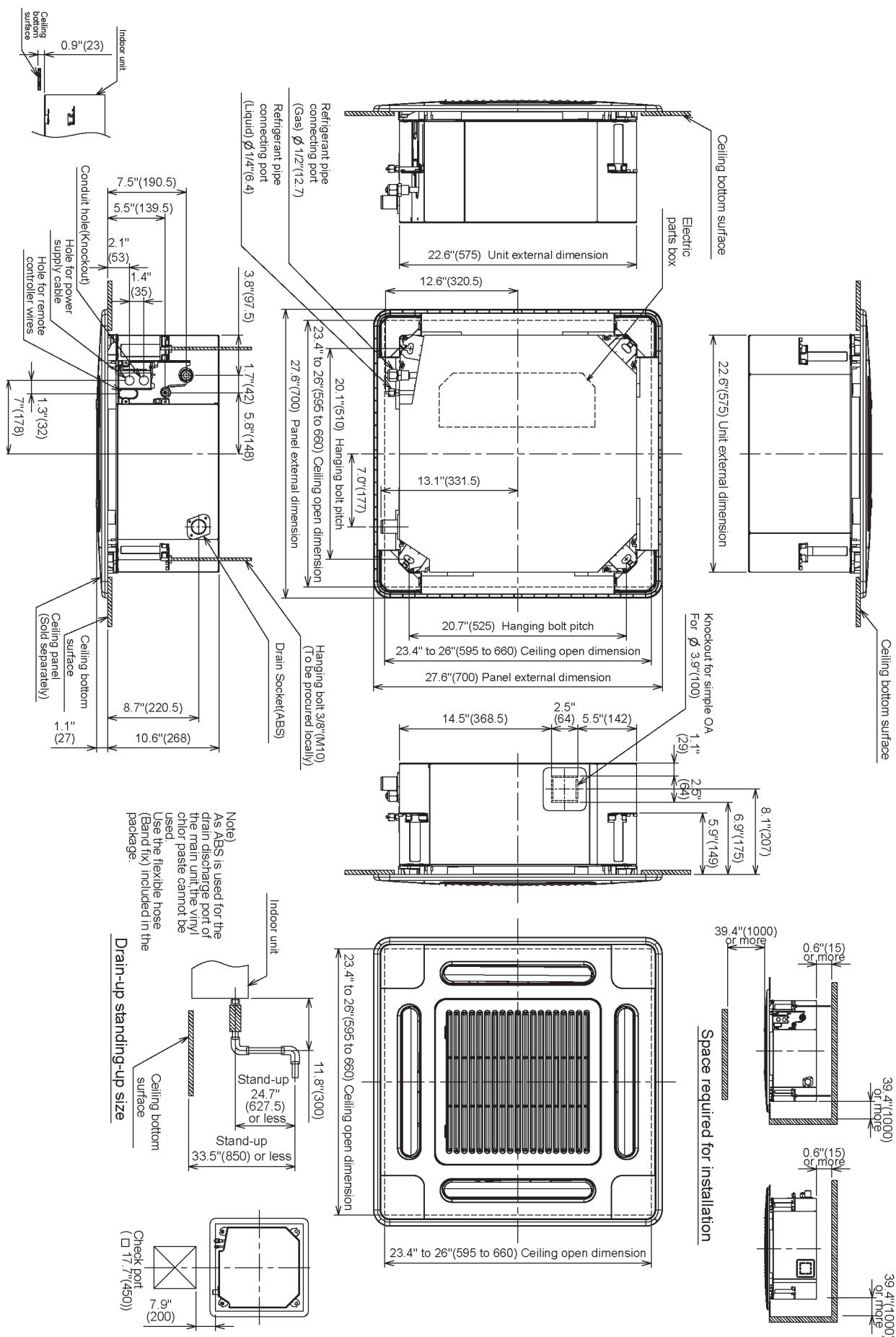
MMU-AP0071MH2UL, MMU-AP0091MH2UL, MMU-AP0121MH2UL

Unit: in (mm)



MMU-AP0151MH2UL, MMU-AP0181MH2UL

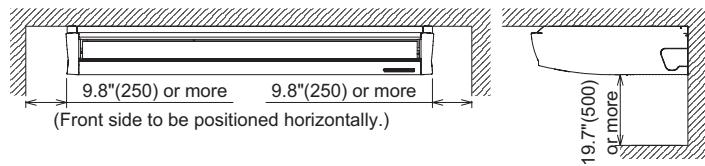
Unit: in (mm)



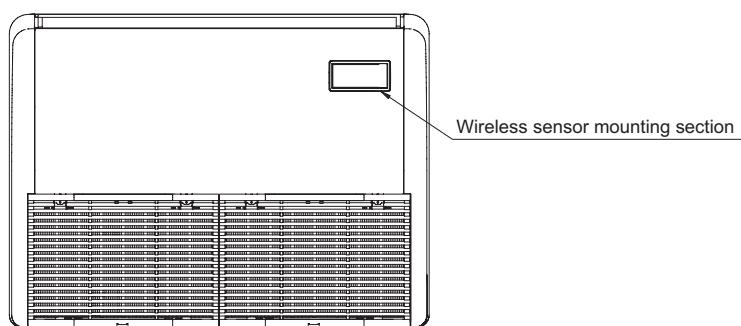
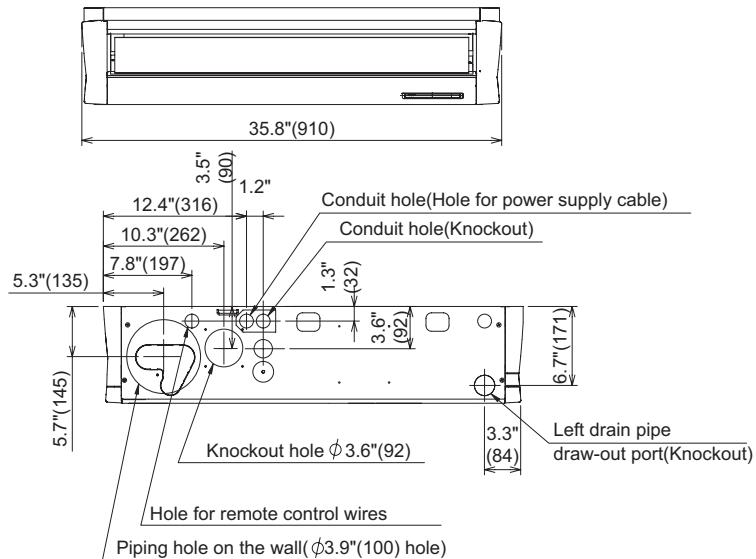
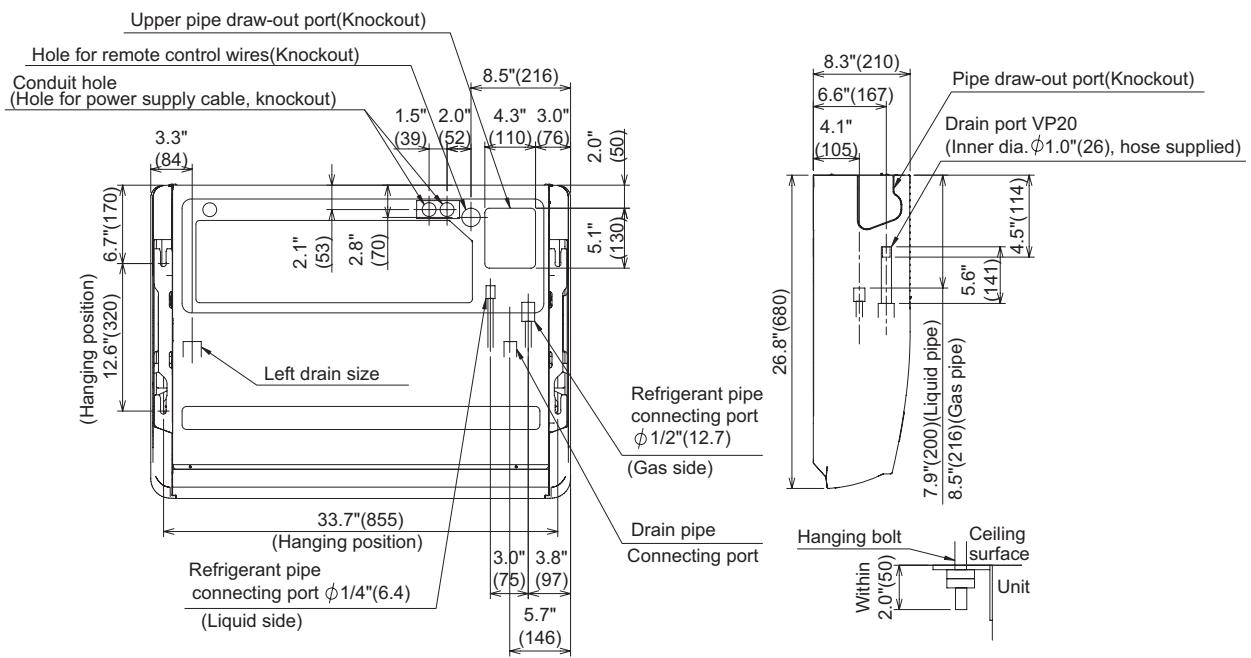
2-3. Ceiling Type

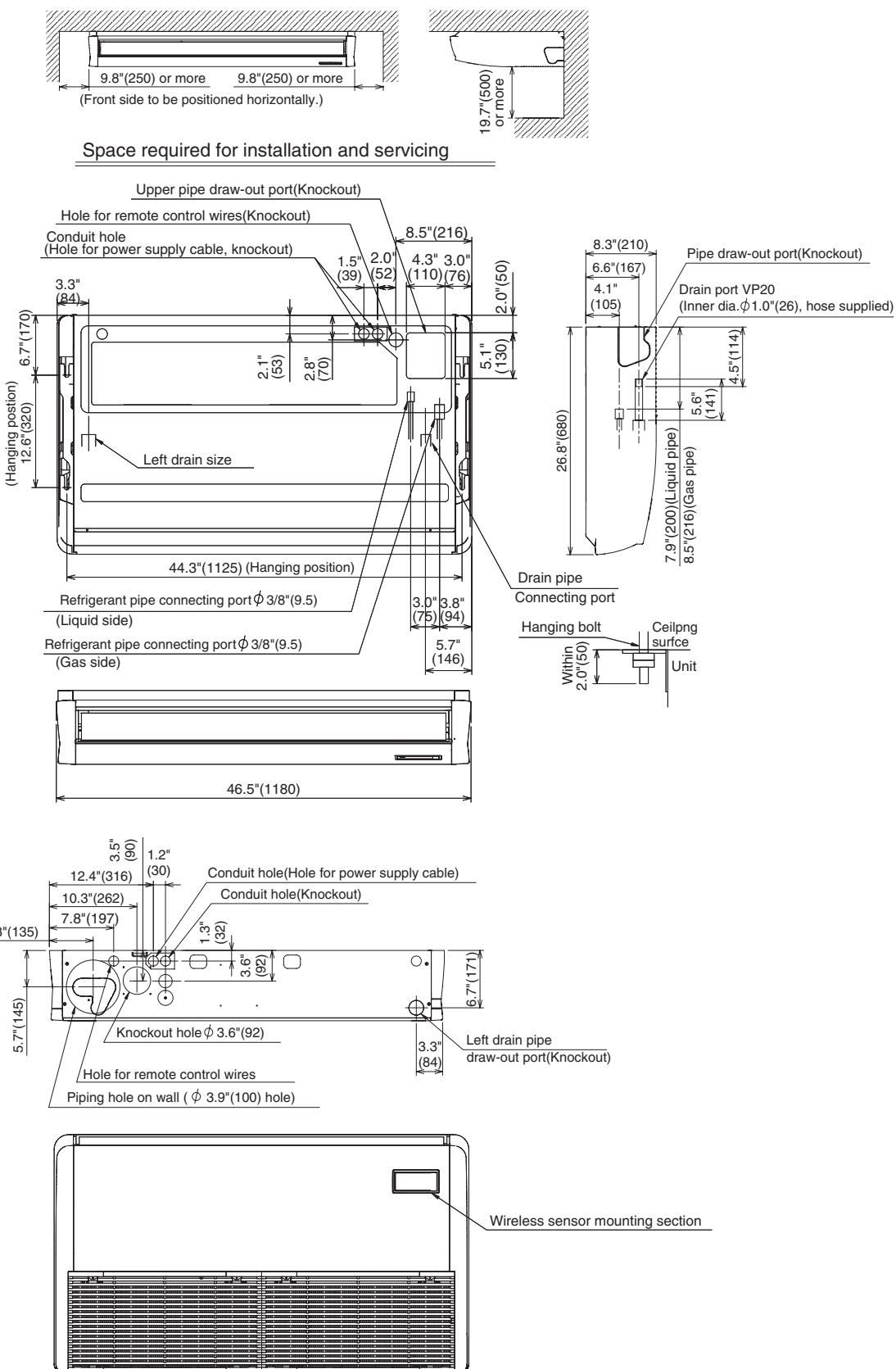
MMC-AP0181H2UL

Unit: in (mm)



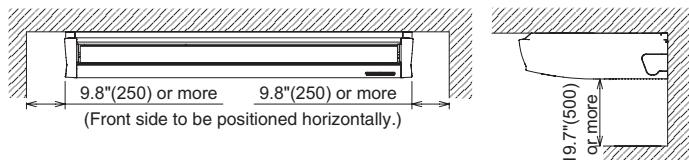
Space required for installation and servicing



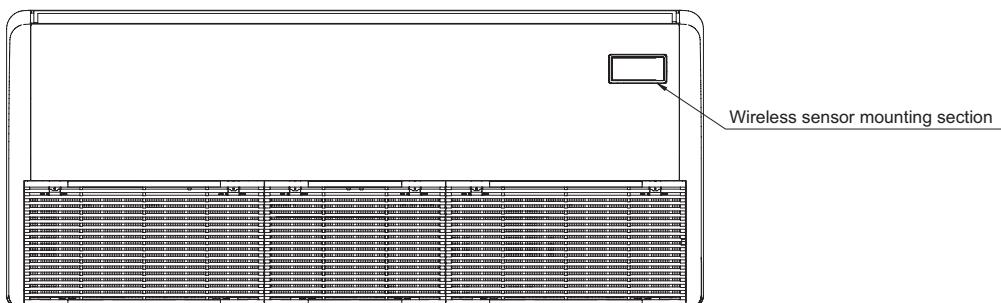
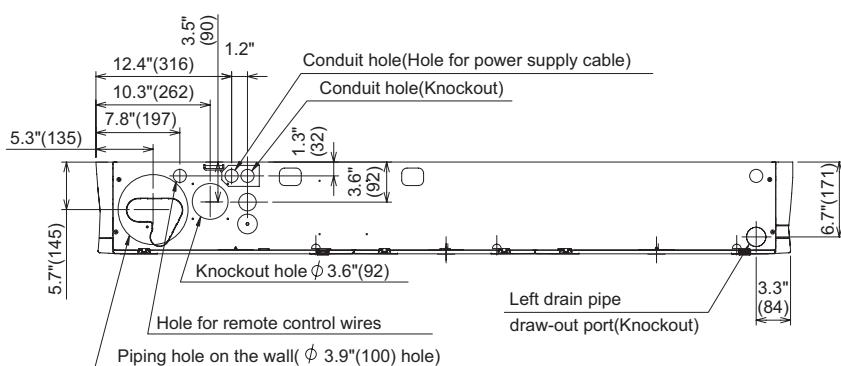
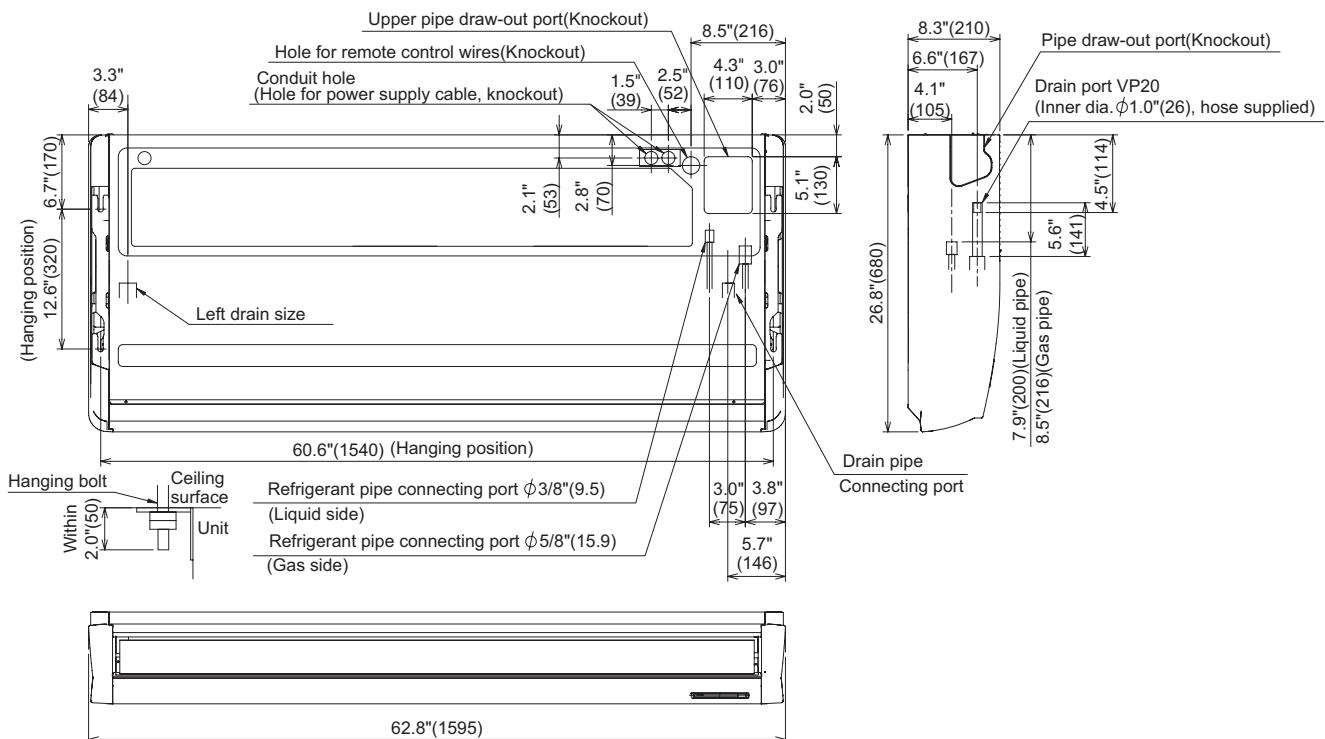


MMC-AP0361H2UL, MMC-AP0421H2UL

Unit: in (mm)



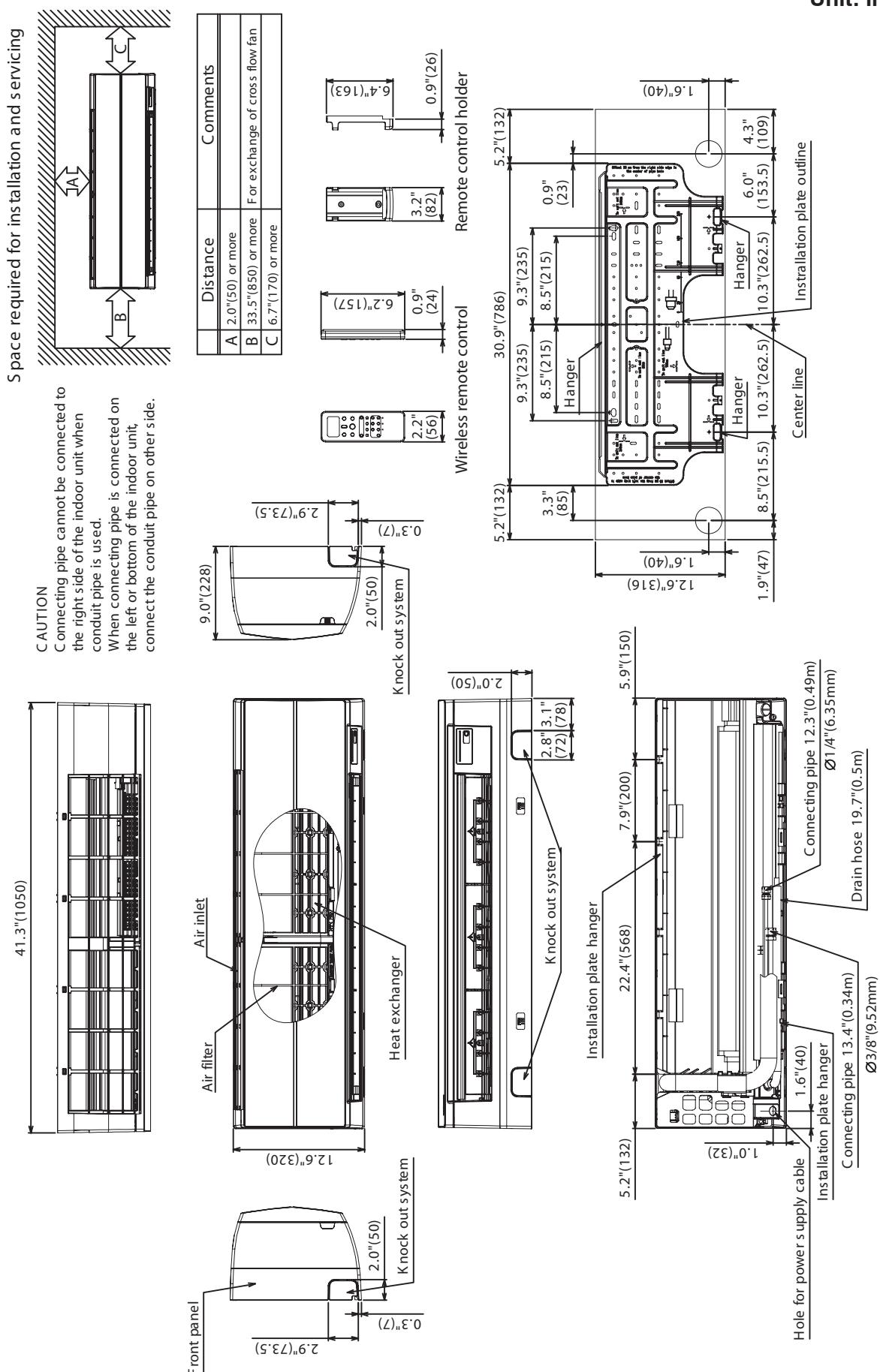
Space required for installation and servicing



2-4. High Wall Type

MMK-AP0073H2UL, MMK-AP0093H2UL, MMK-AP123H2UL

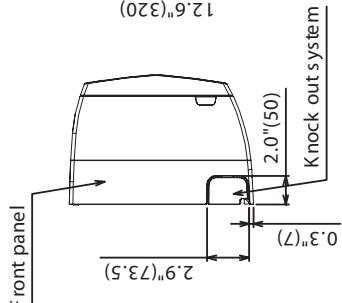
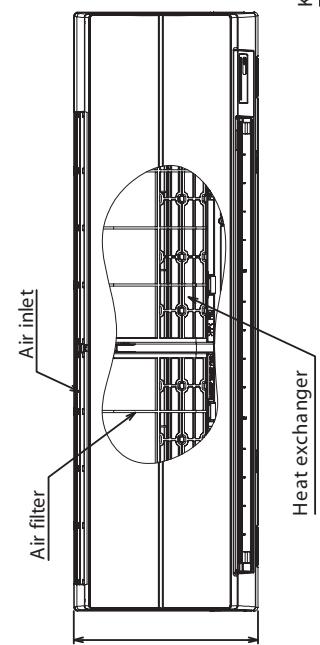
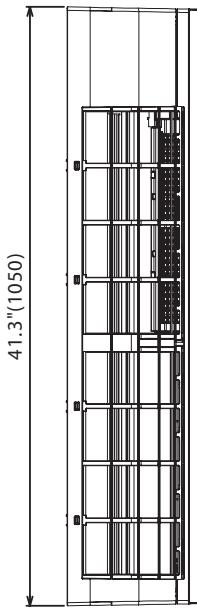
Unit: in (mm)



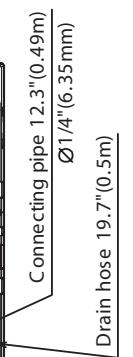
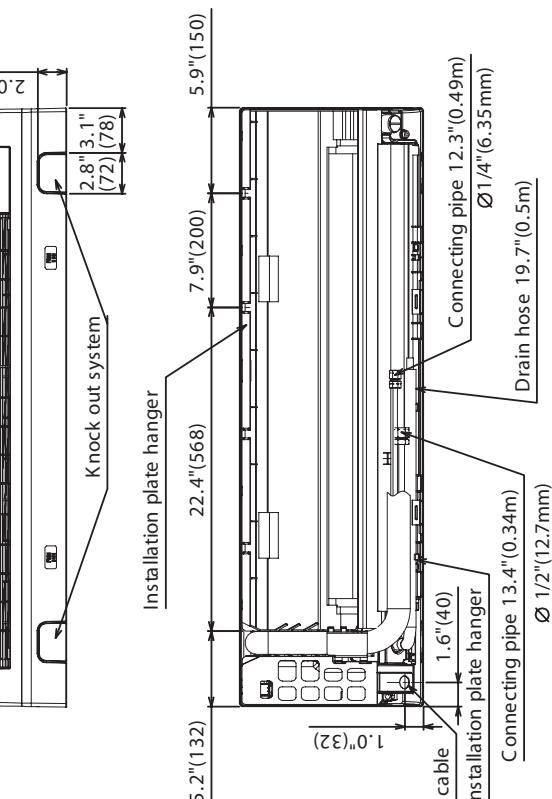
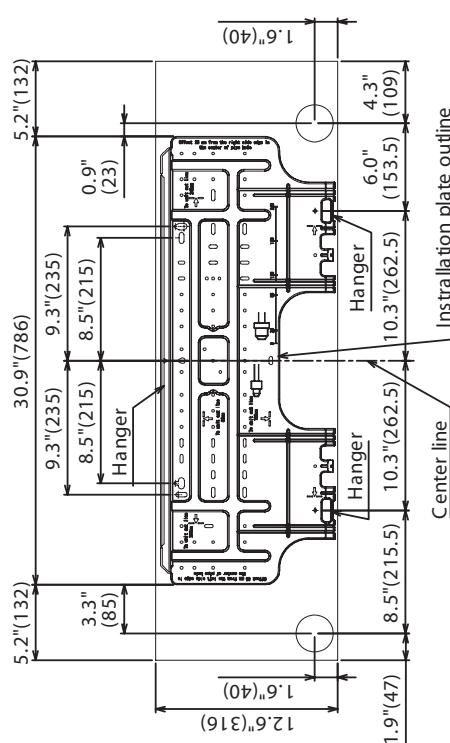
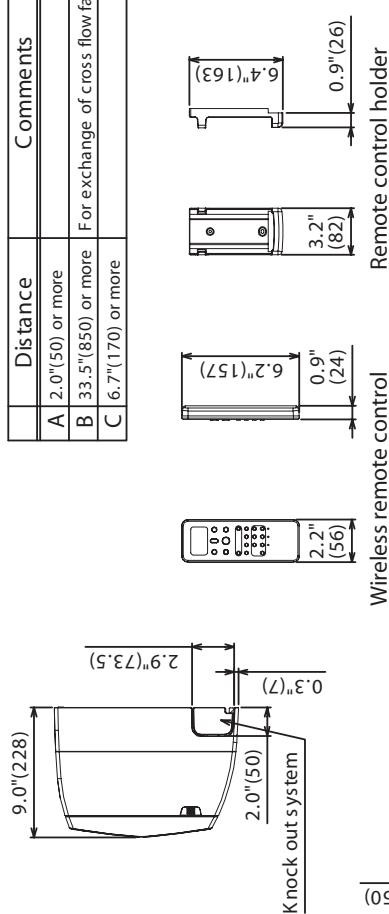
MMK-AP0153H2UL, MMK-AP0183H2UL

Space required for installation and servicing

CAUTION
Connecting pipe cannot be connected to the right side of the indoor unit when conduit pipe is used.
When connecting pipe is connected on the left or bottom of the indoor unit, connect the conduit pipe on other side.



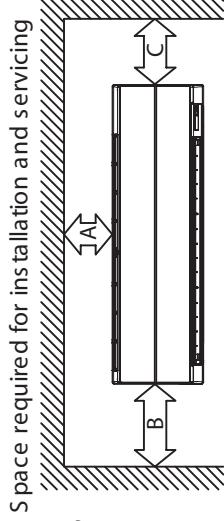
	Distance	Comments
A	2.0'(50) or more	
B	33.5'(850) or more	For exchange of cross flow fan
C	6.7'(170) or more	



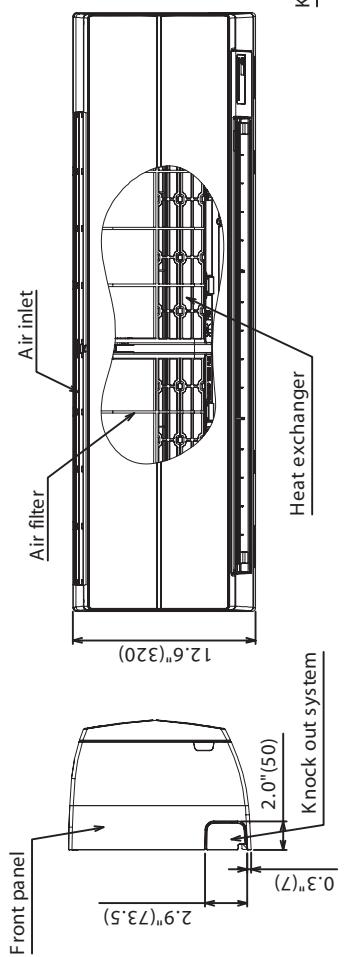
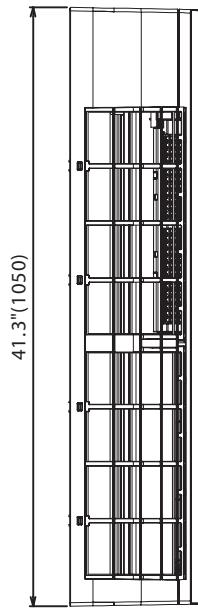
Hole for power supply

MMK-AP0243H2UL

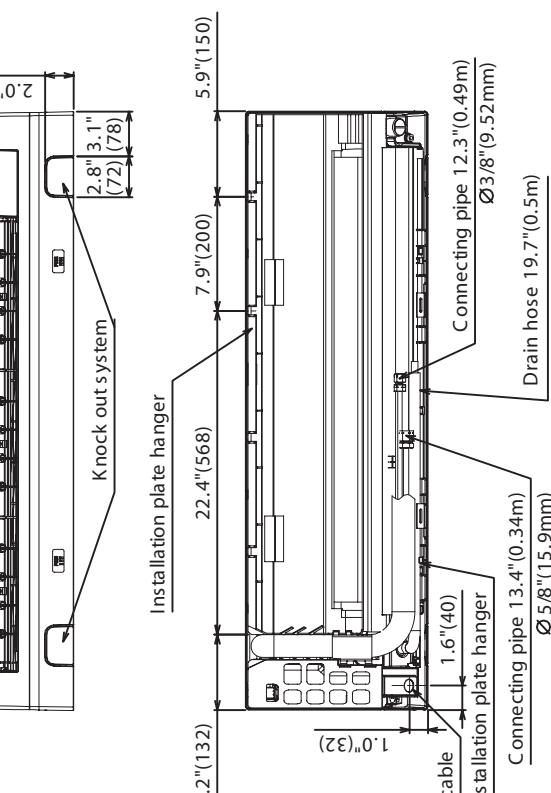
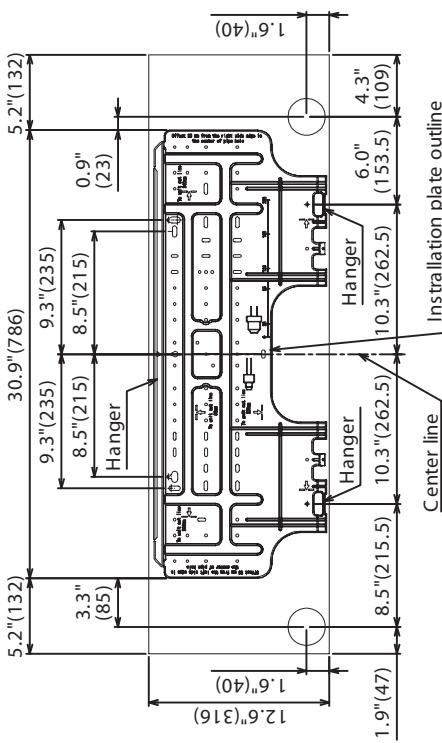
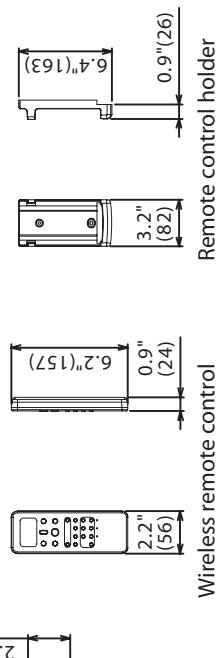
Unit: in (mm)



CAUTION
Connecting pipe cannot be connected to the right side of the indoor unit when conduit pipe is used.
When connecting pipe is connected on the left or bottom of the indoor unit, connect the conduit pipe on other side.



Distance	Comments
A 2.0"(50) or more	
B 33.5"(850) or more	For exchange of cross flow fan
C 6.7"(170) or more	



Connecting pipe 12.3"(0.49m)
 \varnothing 3/8"(9.52mm)

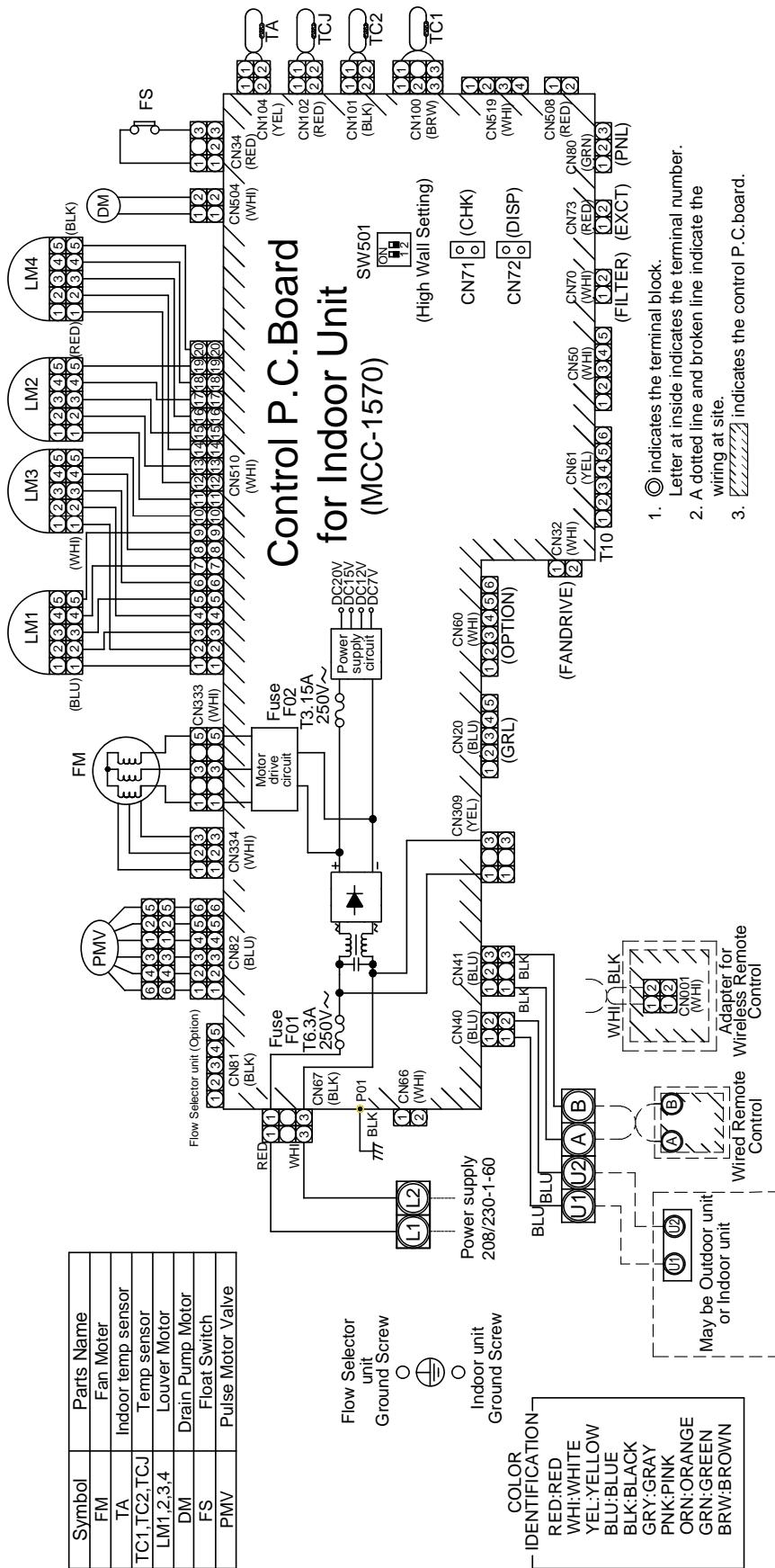
Drain hose 19.7"(0.5m)

Connecting pipe 13.4"(0.34m)
 \varnothing 5/8"(15.9mm)

3. WIRING DIAGRAM

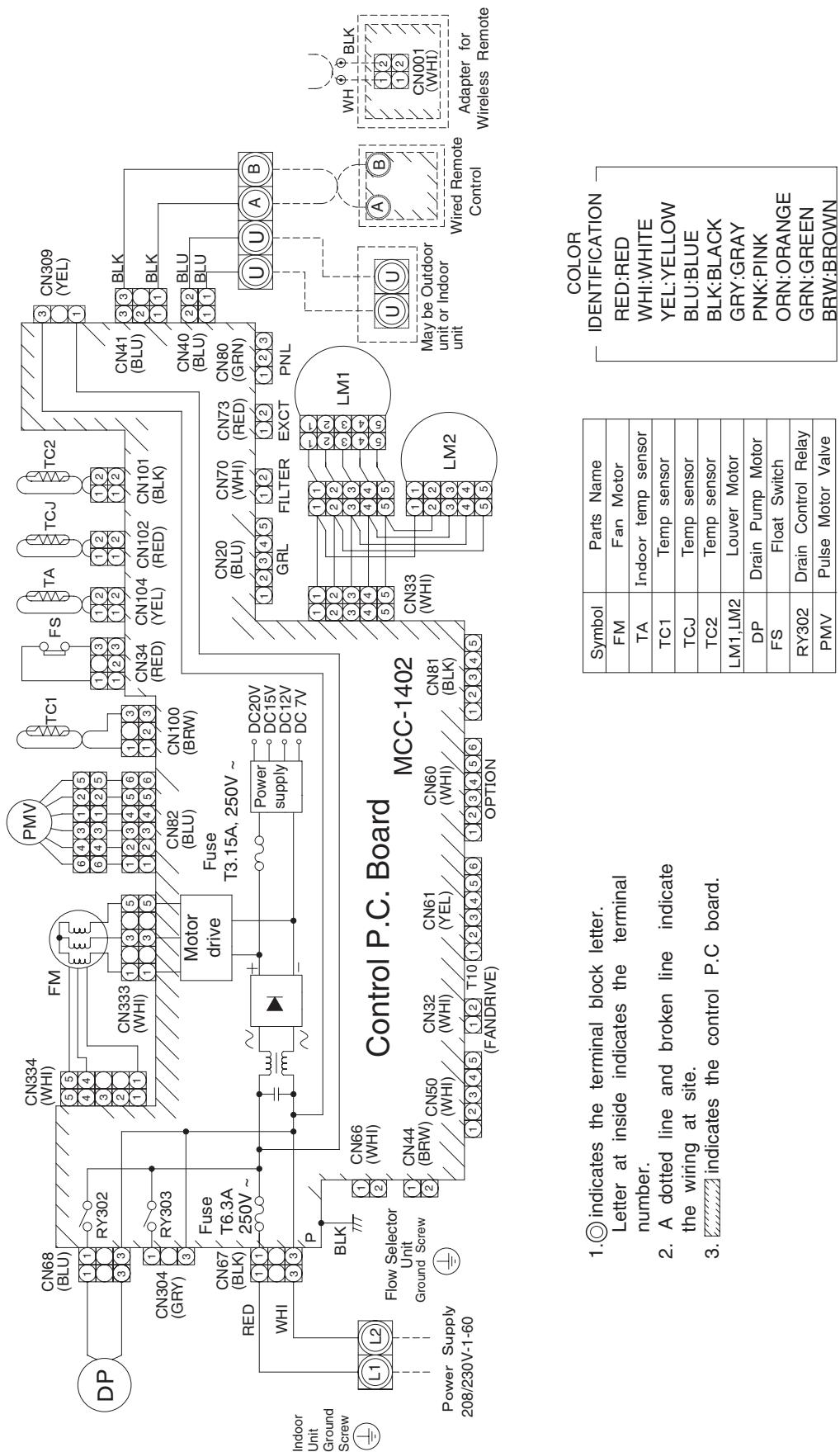
3-1. 4-Way Cassette Type

■ MMU-AP0072H2UL-1, AP0072H2UL, AP0092H2UL, AP0122H2UL, AP0152H2UL, AP0182H2UL,
AP0212H2UL, AP0242H2UL, AP0302H2UL, AP0362H2UL, AP0422H2UL



3-2. Compact 4-Way Cassette Type

MMU-AP0071MH2UL, AP0091MH2UL, AP0121MH2UL, AP0151MH2UL, AP0181MH2UL



1. (◎) indicates the terminal block letter.
Letter at inside indicates the terminal

number.
2. A dotted line and broken line indicate the wiring at site.

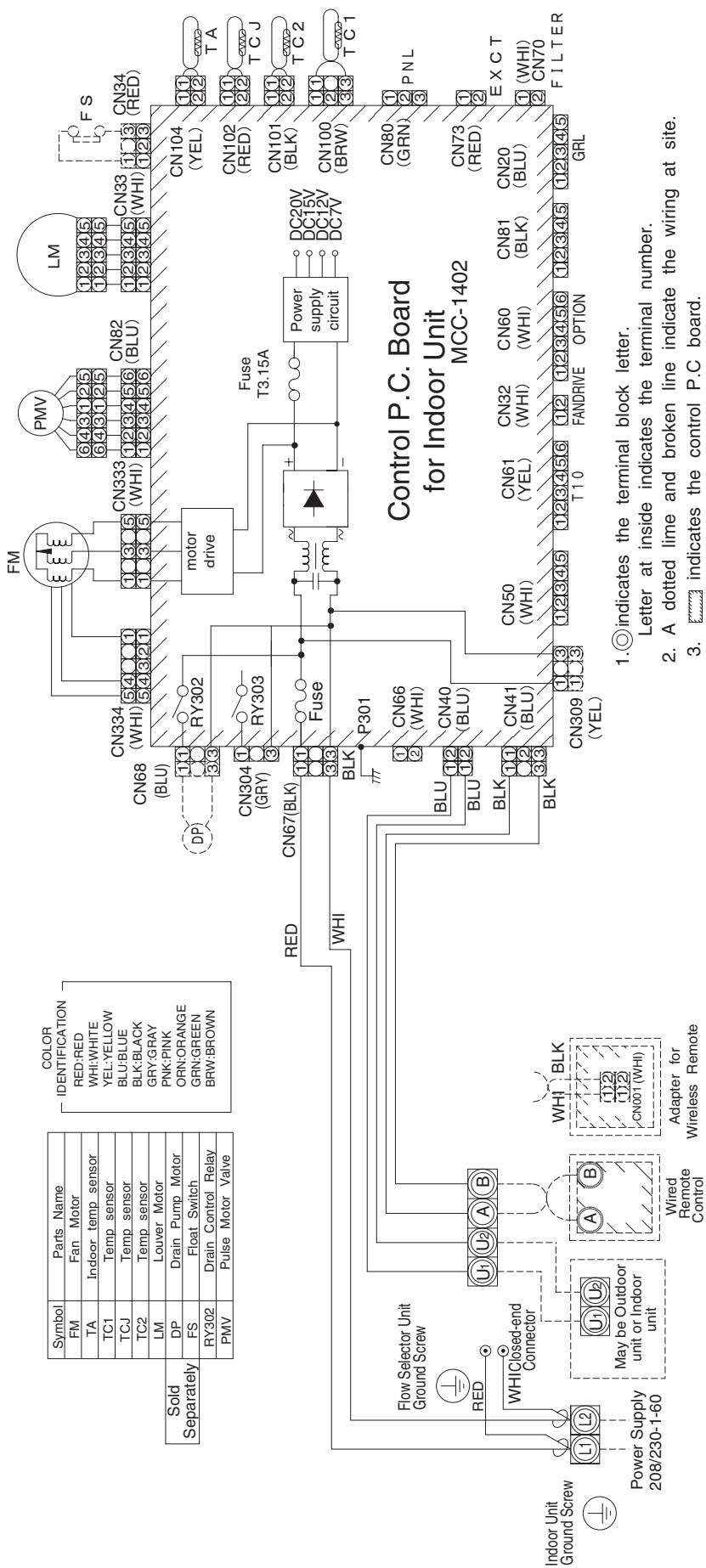
3. indicates the control P.C board.

Symbol	Parts	Name
FM	Fan	Motor
TA	Indoor	temp sensor
TC1	Temp	sensor
TCJ	Temp	sensor
TC2	Temp	sensor
LM1,LM2	Louver	Motor
DP	Drain	Pump
FS	Motor	Float Switch
RY302	Drain	Control Relay
PMV	Pulse	Motor Valve

COLOR	IDENTIFICATION
RED:RED	WHI:WHITE
YEL:YELLOW	BLU:BLUE
BLK:BLACK	BLK:GRAY
GRY:GRAY	PNK:PINK
PNK:PINK	ORN:ORANGE
ORN:ORANGE	GRN:GREEN
GRN:GREEN	BRW:BROWN
BRW:BROWN	

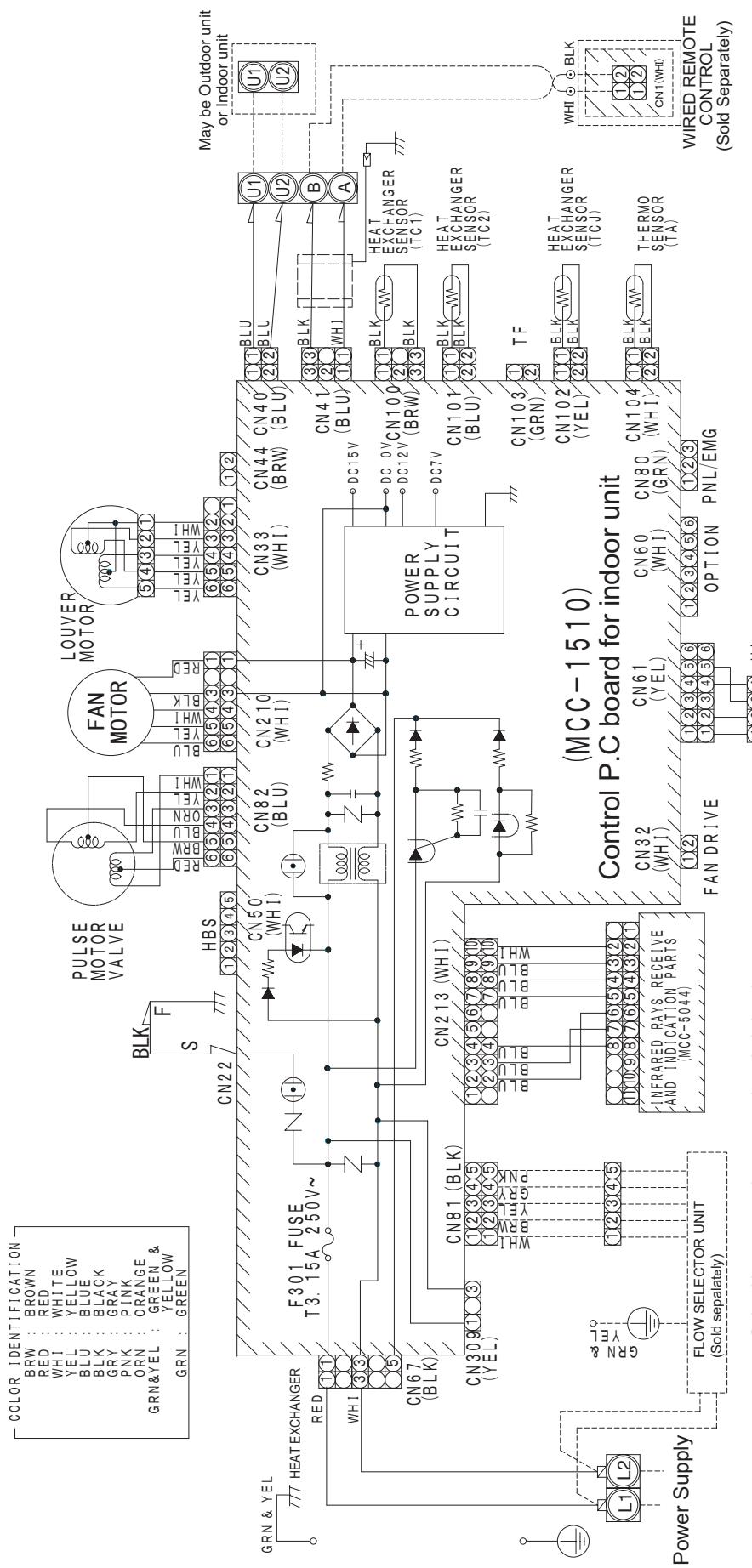
3-3. Ceiling Type

MMC-AP0181H2UL, AP0241H2UL, AP0361H2UL, AP0421H2UL



3-4. High Wall Type

MMK-AP0073H2UL, AP0093H2UL, AP0123H2UL, AP0153H2UL, AP0183H2UL, AP0243H2UL



4. PARTS RATING

4-1. 4-Way Cassette Type

Model	MMU-	AP007	AP009	AP012	AP015	AP018	AP021	AP024	AP030	AP036	AP042							
Fan motor		SWF-340U60-2									ICF-340 U150-1							
Moter for horizontal grille		MP24ZN3N																
Pulse motor		EFM-MD12TF-1																
Pulse motor valve		EDM-B25YGTF-3			EDM-B40YGTF-2			EDM-B60 YGTF-1										
TA sensor		Lead wire length : 12.2 in (310 mm) Vinyl tube																
TC1 sensor		Ø4 size lead wire length : 47.24 in (1200 mm) Vinyl tube (Blue)																
TC2 sensor		Ø6 size lead wire length : 39.37 in (1000 mm) Vinyl tube (Black)																
TCJ sensor		Ø6 size lead wire length : 39.37 in (1000 mm) Vinyl tube (Red)																
Float switch		FS-0218-102																
Drain pump motor		MDP-1401																

4-2. Compact 4-Way Cassette Type

Model	MMU-AP	0071MH2UL	0091MH2UL	0121MH2UL	0151MH2UL	0181MH2UL			
Fan motor		SWF-340U60-1							
Moter for horizontal grille		MP24ZN3N							
Pulse motor		EFM-MD12TF-1							
Pulse motor valve		EDM-B25YGTF-3			EDM-B40YGTF-3				
TA sensor		Lead wire length : 6.1 in (155 mm) Vinyl tube							
TC1 sensor		Ø4 size lead wire length : 55.12 in (1400 mm) Vinyl tube (Blue)							
TC2 sensor		Ø6 size lead wire length : 55.12in (1400 mm) Vinyl tube (Black)							
TCJ sensor		Ø6 size lead wire length : 55.12 in (1400 mm) Vinyl tube (Red)							
Float switch		FS-0218-103							
Drain pump motor		APD-1406							

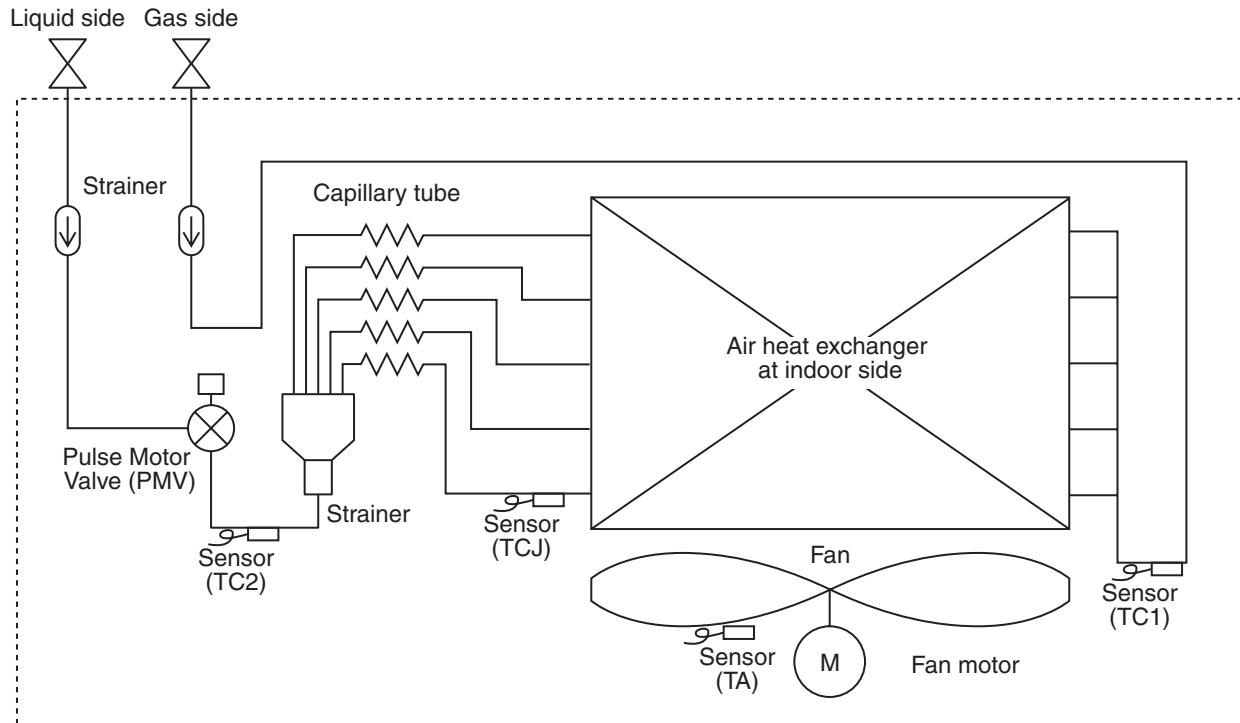
4-3. Ceiling Type

Model	MMC-	AP0181H2UL	AP0241H2UL	AP0361H2UL	AP0421H2UL		
Fan motor		SWF-340U60-1A	SWF-340U60-2A		SWF-340U120-2A		
Driving motor for horizontal grille		MP24Z2					
Pulse motor		EFM-MD12TF-1					
Pulse motor valve		EBM-B40YGTF- 3		EDM-B60YGTF-1			
TA sensor		Lead wire length : 6.1 in (155 mm) Vinyl tube					
TC1 sensor		Ø4 size lead wire length : 47.24 in (1200 mm) Vinyl tube					
TC2 sensor		Ø6 size lead wire length : 47.24 in (1200 mm) Vinyl tube (Black)					
TCJ sensor		Ø6 size lead wire length : 47.24 in (1200 mm) Vinyl tube (Red)					

4-4. High Wall Type

No.	Model	MMK-AP	0073H2UL	0093H2UL	0123H2UL	0153H2UL	0183H2UL	0243H2UL
1	Fan motor (for indoor)		ICF-340U30-1: Output (Rated) 30W, 280-340V DC					
2	Grille motor		MP24Z3T: Output (Rated) 1W, 16 poles DC					
3	Thermo. sensor (TA sensor)		12.5 in (318 mm): 10 kΩ at 77°F (25°C)					
4	Heat exchanger sensor (TC1 sensor)		Ø0.24, 23.62 in (Ø4,600 mm): 10 kΩ at 77°F (25°C)					
5	Heat exchanger sensor (TC2 sensor)		Ø0.24, 31.5 in (Ø4,800 mm): 10 kΩ at 77°F (25°C)					
6	Heat exchanger sensor (TCJ sensor)		Ø0.16, 31.5 in (Ø4,800 mm): 10 kΩ at 77°F (25°C)					
7	PMV motor		EDM-MD12TF: 12 V DC					

5. REFRIGERATING CYCLE DIAGRAM



Functional part name		Functional outline
Pulse Motor Valve	PMV	(Connector CN082 (6P): Blue) 1) Controls super heat in cooling operation 2) Controls under cool in heating operation 3) Recovers refrigerant oil in cooling operation 4) Recovers refrigerant oil in heating operation
Temp. sensor	1. TA	(Connector CN104 (2P): MMU, MMC: Yellow, MMK: White) 1) Detects indoor suction temperature
	2. TC1	(Connector CN100 (3P): Brown) 1) Controls PMV super heat in cooling operation
	3. TC2	(Connector CN101 (2P): MMU, MMC: Black, MMK: Blue) 1) Controls PMV under cool in heating operation
	4. TCJ	(Connector CN102 (2P): MMU, MMC: Red, MMK: Yellow) 1) Controls PMV super heat in cooling operation

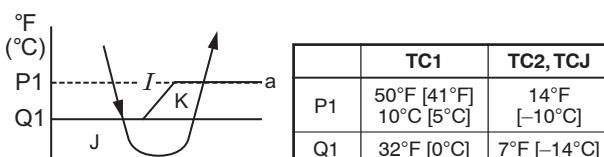
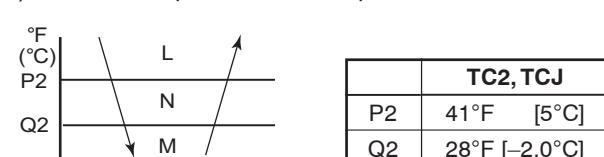
6. CONTROL OUTLINE

6-1. 4-Way Cassette Type, Compact 4-Way Type, Ceiling Type

No.	Item	Outline of specifications	Remarks																					
1	When power supply is reset	<p>1) Distinction of outdoor unit When the power supply is reset, the outdoors are distinguished and the control is selected according to the distinguished result.</p> <p>2) Setting of indoor fan speed and existence of air direction adjustment Based on EEPROM data, select setting of the indoor fan speed and the existence of air direction adjustment.</p> <p>3) If resetting the power supply during occurrence of a trouble, the check code is once cleared. After ON/OFF button of the remote control was pushed and the operation was resumed, if the abnormal status continues, the check code is again displayed on the remote control.</p>	Air speed (rpm)/ Air direction adjustment																					
2	Operation mode selection	<p>1) Based on the operation mode selecting command from the remote control, the operation mode is selected.</p> <table border="1"> <thead> <tr> <th>Remote control command</th><th>Control outline</th></tr> </thead> <tbody> <tr> <td>STOP</td><td>Air conditioner stops.</td></tr> <tr> <td>FAN</td><td>Fan operation</td></tr> <tr> <td>COOL</td><td>Cooling operation</td></tr> <tr> <td>DRY</td><td>Dry operation</td></tr> <tr> <td>HEAT</td><td>Heating operation</td></tr> </tbody> </table>	Remote control command	Control outline	STOP	Air conditioner stops.	FAN	Fan operation	COOL	Cooling operation	DRY	Dry operation	HEAT	Heating operation										
Remote control command	Control outline																							
STOP	Air conditioner stops.																							
FAN	Fan operation																							
COOL	Cooling operation																							
DRY	Dry operation																							
HEAT	Heating operation																							
3	Room temp. control	<p>1) Adjustment range: Remote control setup temperature (°F [°C])</p> <table border="1"> <thead> <tr> <th></th><th>COOL/DRY</th><th>HEAT</th></tr> </thead> <tbody> <tr> <td>Wired type</td><td>64°F [18°C] to 84°F [29°C]</td><td>64°F [18°C] to 84°F [29°C]</td></tr> <tr> <td>Wireless type</td><td>63°F [17°C] to 86°F [30°C]</td><td>63°F [17°C] to 86°F [30°C]</td></tr> </tbody> </table> <p>2) Using the Item code 06, the setup temperature in heating operation can be corrected.</p> <table border="1"> <thead> <tr> <th>Setup data</th><th>0</th><th>2</th><th>4</th><th>6</th></tr> </thead> <tbody> <tr> <td>Setup temp. Correction</td><td>+0°F [+0°C]</td><td>+3.6°F [+2°C]</td><td>+7.2°F [+4°C]</td><td>+10.8°F [+6°C]</td></tr> </tbody> </table> <p>Setting at shipment</p> <table border="1"> <thead> <tr> <th>Setup data</th><th>2</th></tr> </thead> </table>		COOL/DRY	HEAT	Wired type	64°F [18°C] to 84°F [29°C]	64°F [18°C] to 84°F [29°C]	Wireless type	63°F [17°C] to 86°F [30°C]	63°F [17°C] to 86°F [30°C]	Setup data	0	2	4	6	Setup temp. Correction	+0°F [+0°C]	+3.6°F [+2°C]	+7.2°F [+4°C]	+10.8°F [+6°C]	Setup data	2	Shift of suction temperature in heating operation Except while sensor of the remote control is controlled (Code No. [32], "0001")
	COOL/DRY	HEAT																						
Wired type	64°F [18°C] to 84°F [29°C]	64°F [18°C] to 84°F [29°C]																						
Wireless type	63°F [17°C] to 86°F [30°C]	63°F [17°C] to 86°F [30°C]																						
Setup data	0	2	4	6																				
Setup temp. Correction	+0°F [+0°C]	+3.6°F [+2°C]	+7.2°F [+4°C]	+10.8°F [+6°C]																				
Setup data	2																							

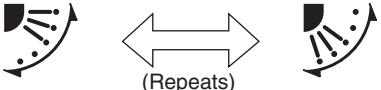
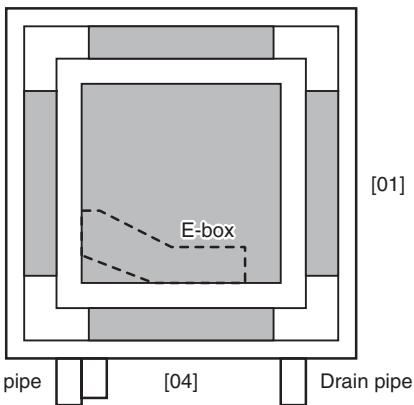
No.	Item	Outline of specifications	Remarks
4	Automatic capacity control	<p>1) Based on the difference between T_a and T_s, the operation capacity is determined by the outdoor unit.</p> <p>COOL Mode: The graph shows capacity levels (SD, SB, S9, S7, S5, S3, S0) plotted against room temperature (T_a in °F and °C). The capacity levels increase as T_a increases above T_s. The graph is labeled with T_a values: +3.6 (+2), +1.8 (+1), T_s, and -1.8 (-1). The capacity levels are labeled S0, S3, S5, S7, S9, SB, and SD.</p> <p>HEAT Mode: The graph shows capacity levels (S3, S0, S5, S7, S9, SB, SD, SF) plotted against room temperature (T_a in °F and °C). The capacity levels decrease as T_a increases above T_s. The graph is labeled with T_a values: +1.8 (+1), T_s, -1.8 (-1), and -3.6 (-2). The capacity levels are labeled S0, S3, S5, S7, S9, SB, SD, and SF.</p>	<p>T_s: Setup temp. T_a: Room temp.</p>
5	Air speed selection	<p>1) Operation with (HH), (H), (L) or [AUTO] mode is carried out by the command from the remote control.</p> <p>2) When the air speed mode [AUTO] is selected, the air speed varies by the difference between T_a and T_s.</p> <p><COOL></p> <p>The graph shows air speed levels (A, B, C, D, E, F, G) plotted against room temperature (T_a in °F and °C). The levels increase as T_a decreases below T_{sc}. The graph is labeled with T_a values: +5.4 [+3.0], +4.5 [+2.5], +3.6 [+2.0], +2.7 [+1.5], +1.8 [+1.0], +0.9 [+0.5], T_{sc}, and -0.9 [-0.5]. The air speed levels are labeled A, B, C, D, E, F, and G.</p> <p>< > : Indicate automatic cooling.</p> <ul style="list-style-type: none"> Controlling operation in case when thermo of remote control works is same as a case when thermo of the body works. If the air speed has been changed once, it is not changed for 3 minutes. However when the air volume is exchanged, the air speed changes. When cooling operation has started, select a downward slope for the air speed, that is, the high position. If the temperature is just on the difference boundary, the air speed does not change. 	<p>HH > H+ > H > L+ > L > UL</p> <p>Code No. 32 0000: Body thermo. (Main unit) 0001: Remote control thermo.</p>

No.	Item	Outline of specifications	Remarks
5	Air speed selection (Continued)	<p><HEAT></p> <p>Value in the parentheses indicates one when thermostat of the remote control works. Value without parentheses indicates one when thermostat of the body works.</p> <ul style="list-style-type: none"> If the air speed has been changed once, it is not changed for 1 minute. However when the air speed exchanged, the air speed changes. When heating operation has started, select an upward slope for the air speed, that is, the high position. If the temperature is just on the difference boundary, the air speed does not change. In $T_{c2} \geq 140^{\circ}\text{F}[60^{\circ}\text{C}]$, the air speed increases by 1 step. 	<p>T_{c2}: Indoor heat exchanger sensor temperature</p>
6	Prevention of cold air discharge	<p>1. In heating operation, the higher temperature of T_{c2} sensor and T_{cj} sensor is compared with temperature of T_{c1} sensor and then the lower temperature is used to set the upper limit of the fan tap.</p> <ul style="list-style-type: none"> When B zone has continued for 6 minutes, the operation shifts to C zone. In defrost time, the control point is set to $+10.8^{\circ}\text{F}[6^{\circ}\text{C}]$. 	<p>T_{cj}: Temperature of indoor heat exchanger sensor</p> <ul style="list-style-type: none"> In D and E zones, priority is given to remote control air speed setup. In A zone “” is displayed.

No.	Item	Outline of specifications	Remarks															
7	Freeze prevention control (Low temp. release)	<p>1. In all cooling operation, the air conditioner operates as described below based upon temp. detected by TC1, TC2 and TCJ sensors.</p> <ul style="list-style-type: none"> When "J" zone is detected for 5 minutes, the thermostat is forcedly off. In "K" zone, the timer count is interrupted, and held. When "I" zone is detected, the timer is cleared and the operation returns to the normal operation. If "J" zone continues, operation of the indoor fan in LOW mode continues until it reaches the "I" zone. It is reset when the following conditions are satisfied. <p>Reset conditions</p> <ol style="list-style-type: none"> 1) TC1 > 54°F [12°C] and TC2 > 54°F [12°C] and TCJ > 54°F [12°C]. 2) 20 minutes passed after stop.  <table border="1"> <thead> <tr> <th></th> <th>TC1</th> <th>TC2, TCJ</th> </tr> </thead> <tbody> <tr> <td>P1</td> <td>50°F [41°F] 10°C [5°C]</td> <td>14°F [-10°C]</td> </tr> <tr> <td>Q1</td> <td>32°F [0°C]</td> <td>7°F [-14°C]</td> </tr> </tbody> </table> <p>() value: When the power supply is turned on, the Forced thermo becomes OFF if the temperature is less than this indicated temperature.</p> <p>2. In all cooling operation, the air conditioner operates as described below based upon temp. detected by TC2 and TCJ sensors.</p> <ul style="list-style-type: none"> When "M" zone is detected for 30 minutes, the thermostat is forcedly off. In "N" zone, the timer count is interrupted and held. When shifting to "M" zone again, the timer count restarts and continues. If "L" zone is detected, the timer is cleared and the operation returns to normal operation. <p>Reset conditions</p> <ol style="list-style-type: none"> 1) TC1 > 54°F [12°C] and TC2 > 54°F [12°C] and TCJ > 54°F [12°C]. 2) 20 minutes passed after stop.  <table border="1"> <thead> <tr> <th></th> <th>TC2, TCJ</th> </tr> </thead> <tbody> <tr> <td>P2</td> <td>41°F [5°C]</td> </tr> <tr> <td>Q2</td> <td>28°F [-2.0°C]</td> </tr> </tbody> </table> <p>* In a Model without TC2, TC2 is not judged.</p>		TC1	TC2, TCJ	P1	50°F [41°F] 10°C [5°C]	14°F [-10°C]	Q1	32°F [0°C]	7°F [-14°C]		TC2, TCJ	P2	41°F [5°C]	Q2	28°F [-2.0°C]	
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8	Recovery control for cooling oil (Refrigerant)	<p>The indoor unit which is under STOP/Thermo-OFF status or which operates in [FAN] mode performs the following controls when it received the cooling oil (Refrigerant) recovery signal from the outdoor unit.</p> <ol style="list-style-type: none"> 1) Opens PMV of the indoor unit with a constant opening degree. 2) Operates the drain pump for approx. 1 minute during recovery control and after finish of control. 	<ul style="list-style-type: none"> Recovery operation is usually performed every 2 hours 5 minutes. 															

No.	Item	Outline of specifications	Remarks		
9	Recovery control for heating refrigerant (Oil)	<p>The indoor unit which is under STOP/Thermo-OFF status or which operates in [FAN] mode performs the following controls when it received the heating refrigerant (Oil) recovery signal from the outdoor unit.</p> <ol style="list-style-type: none"> 1) Opens PMV of the indoor unit with a constant opening degree. 2) Detects temperature of TC2 and then closes PMV. 3) Counts No. of recovery controls and operates the indoor fan and the drain pump for approx. 1 minute after finish of recovery control until the control count reaches the specified count. 	<ul style="list-style-type: none"> • The indoor unit which is under thermo-OFF (COOL) status or which operates in [FAN] mode stops the indoor fan and displays [READY ]. • Recovery operation is usually performed every 1 hour. (When there is even 1 indoor unit which the thermo unit is off) 		
10	Compensation control for short intermittent operation	<ol style="list-style-type: none"> 1) For 3 minutes after start of operation, the operation is forcedly continued even if the unit enters in Thermo-OFF condition. 2) However the thermostat is OFF giving prior to COOL/HEAT selection, READY  for operation and protective control. 	Usually the priority is given to 5 minutes at outdoor control side.		
11	Drain pump control	<ol style="list-style-type: none"> 1) In cooling operation (including DRY operation), this control anytime operates the drain pump. 2) During operation of the drain pump, if the float switch operates, the drain pump continuously operates and a check code is issued. 3) During stop status of the drain pump, if the float switch operates, the thermostat is forcedly off and this control operates the drain pump. After continuous operation of the float switch for approx. 5 minutes, this control stops the operation and a check code is issued. 	Check Code [P10]		
12	Elimination of retained heat	<ol style="list-style-type: none"> 1) When the unit stopped from [HEAT] operation, the indoor fan operates with [L] for approx. 30 seconds. 			
13	<p>Display of filter sign [] (Not provided to the wireless type)</p> <p>* Separately set type TCB-AX21UL is prepared.</p>	<ol style="list-style-type: none"> 1) The filter sign is displayed with LC by sending the filter-reset signal to the remote control when the specified time (150H/2500H) elapsed as a result of integration of the operation time of the indoor fan. 2) The integrated timer is cleared when the filter-reset signal is received from the remote control. In this time, if the specified time elapsed, the counted time is reset and the LC display is deleted. <table border="1" data-bbox="477 1583 858 1628"> <tr> <td>Filter time</td> <td>2500H</td> </tr> </table>	Filter time	2500H	[ FILTER] goes on.
Filter time	2500H				

No.	Item	Outline of specifications	Remarks																																																		
14	Display of [READY] [HEAT READY]	<p><READY> Displayed on the remote control</p> <p>1) When the following check codes are indicated</p> <ul style="list-style-type: none"> • Open phase of power supply wiring [P05] was detected. • There is an indoor unit that detected the indoor overflow [P10]. • There is an indoor unit that detected the interlock alarm [L30]. <p>2) During Force Thermo-OFF</p> <ul style="list-style-type: none"> • [COOL/DRY] operation is unavailable because the other indoor unit operates with [HEAT] mode. • [HEAT] operation is unavailable because COOL priority (SW11-bit1 of the Outdoor I/F P. C. board is ON) is set and the other indoor unit operates with [COOL/DRY] mode. <p>3) The above indoor units that cannot operate stay in Thermo-OFF status.</p> <p>4) The indoor fan stops because the system performs [Recovery operation for heating refrigerant (Oil)].</p> <p><HEAT READY> Displayed on the remote control</p> <p>1. Normal thermo. OFF</p> <ul style="list-style-type: none"> • During heating, the indoor unit goes thermo OFF as the heating temperature setting is reached. <p>2. During heating, the fan rotates at a breeze speed (UL or lower) or remains stationary to prevent cold air from being discharged (including defrosting operation).</p> <p>3. Forced thermo OFF</p> <ul style="list-style-type: none"> • “HEAT” operation is unavailable because at least one indoor unit is operating in “COOL/DRY” mode under priority cooling setting (bit 1 of SW11 on outdoor I/F P.C. board ON). 	<ul style="list-style-type: none"> • <READY  > display No display for wireless type remote control • <HEAT READY  > display 																																																		
15	Selection of central control mode	<p>1) Selection of the contents that can be operated by the remote control at the indoor unit side is possible according to setting at the central control side.</p> <p>2) Setting contents</p> <p>• In case of TCC-LINK central control</p> <table border="1"> <thead> <tr> <th rowspan="2">Operation from TCC-LINK central control</th> <th colspan="6">Operation on RBC-AMT32E</th> <th rowspan="2">On RBC-AMT32E [Central control] display</th> </tr> <tr> <th>ON/OFF setting</th> <th>Operation selection</th> <th>Timer setting</th> <th>Temp. setting</th> <th>Air speed setting</th> <th>Air direction setting</th> </tr> </thead> <tbody> <tr> <td>Individual</td> <td>○</td> <td>○</td> <td>○</td> <td>○</td> <td>○</td> <td>○</td> <td rowspan="5">[Central control] display</td> </tr> <tr> <td>[Central 1]</td> <td>×</td> <td>○</td> <td>×</td> <td>○</td> <td>○</td> <td>○</td> </tr> <tr> <td>[Central 2]</td> <td>×</td> <td>×</td> <td>×</td> <td>×</td> <td>○</td> <td>○</td> </tr> <tr> <td>[Central 3]</td> <td>○</td> <td>×</td> <td>○</td> <td>×</td> <td>○</td> <td>○</td> </tr> <tr> <td>[Central 4]</td> <td>○</td> <td>×</td> <td>○</td> <td>○</td> <td>○</td> <td>○</td> </tr> </tbody> </table> <p>(○: Operation possible ×: Operation impossible)</p>	Operation from TCC-LINK central control	Operation on RBC-AMT32E						On RBC-AMT32E [Central control] display	ON/OFF setting	Operation selection	Timer setting	Temp. setting	Air speed setting	Air direction setting	Individual	○	○	○	○	○	○	[Central control] display	[Central 1]	×	○	×	○	○	○	[Central 2]	×	×	×	×	○	○	[Central 3]	○	×	○	×	○	○	[Central 4]	○	×	○	○	○	○	
Operation from TCC-LINK central control	Operation on RBC-AMT32E						On RBC-AMT32E [Central control] display																																														
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[Central 4]	○	×	○	○	○	○																																															

No.	Item	Outline of specifications	Remarks
16	Louver control: In case of 4-way Cassette type and ceiling type	<p>1) Louver position setup</p> <ul style="list-style-type: none"> When the louver position is changed, the position moves necessarily to downward discharge position once to return to the set position. The louver position can be set up in the following operation range. <p>In cooling/dry operation In heating/fan operation</p>  <ul style="list-style-type: none"> In group twin/triple operation, the louver positions can be set up collectively or individually. In case that HEAT refrigerant recovery control was performed in STOP status, the louver position becomes horizontal when the operation is resumed. <p>2) Swing setup</p> <ul style="list-style-type: none"> [SWING] is displayed and the following display is repeated. <p>In all operations</p>  <ul style="list-style-type: none"> In group operation, the louver positions can be set up collectively or individually. When the unit stopped or the warning was output, the louver is automatically set to full closed position. When PRE-HEAT (Heating ready) is displayed (Heating operation started or defrost operation is performed), heating thermo is off or self-cleaning is performed, the louver is automatically set to horizontal discharge position. * The louver which air direction is individually set or the locked louver closes fully when the unit stops and the louver is automatically set to horizontal discharge position when PRE-HEAT (Heating ready) is displayed, heating thermo is off. 	<p>The louver position at horizontal discharge position at under AP030 differs from that at over AP036.</p> <p>The swinging louver moves usually up to the ceiling side from the louver position of the set time.</p>
	In Case of 4-way cassette type only	<p><<Individual air direction setup>></p> <ul style="list-style-type: none"> Pushing <small>UNIT LOUVER</small> Louver select button enables every discharge port to set up the air direction. The louver numbers that are displayed on the display part correspond to those in the following figure. In case of no input (key operation) for approx. 5 seconds during setting of individual air direction (during displaying of louver No. on the remote control screen), the remote control screen returns to the normal display screen. For the air direction illustration during normal operation, the air direction of the least No. among the louvers which are block-set is displayed. While individual air direction is being set, the remote control operation (Illustration of air direction) and operation of the real machine are linked. When selecting a case, <small>UNIT LOUVER</small> Louver select button is not pushed or louver No. is not displayed, the air directions of all the louvers are collectively set up. 	<p>Setup from the remote control without <small>UNIT LOUVER</small> button is unavailable.</p> <p>For the setup operation, refer to "How to set up louver individually" of Item "Setup at local site/Others".</p> <p>Using same as the present 4-way Air Cassette Type is possible</p> <p>[02]</p> 

No.	Item	Outline of specifications	Remarks																		
16	Louver control (Continued): In case of 4-way Discharge Cassette type	<ul style="list-style-type: none"> If there is the locked louver in the unit, [] goes on the remote control screen. While the following controls are performed, the louvers operate even if executing the louver lock. <table border="1"> <thead> <tr> <th></th><th>Control which ignores lock</th><th>Objective louver No.</th></tr> </thead> <tbody> <tr> <td>①</td><td>Operation stop</td><td>Horizontal discharge position</td></tr> <tr> <td>②</td><td>When heating operation started</td><td>Horizontal discharge position</td></tr> <tr> <td>③</td><td>Heating thermo. OFF</td><td>Horizontal discharge position</td></tr> <tr> <td>④</td><td>During defrost operation</td><td>Horizontal discharge position</td></tr> <tr> <td>⑤</td><td>Initialize operation</td><td>Full-close position</td></tr> </tbody> </table> <ul style="list-style-type: none"> The real louver corresponding to the louver No. displayed on the remote control screen during setting of louver lock operates swinging. 		Control which ignores lock	Objective louver No.	①	Operation stop	Horizontal discharge position	②	When heating operation started	Horizontal discharge position	③	Heating thermo. OFF	Horizontal discharge position	④	During defrost operation	Horizontal discharge position	⑤	Initialize operation	Full-close position	For the setting operation, refer to [How to set louver lock] of Installation Manual. It is position check operation and it does not link with the real louver and air direction setup (Illustration on the remote control screen).
	Control which ignores lock	Objective louver No.																			
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⑤	Initialize operation	Full-close position																			
17	DC motor	<ol style="list-style-type: none"> When the fan stator, positioning is performed for the starter and the rotor. (Vibrate slightly) DC motor operates according to the command from the indoor control. <p>(Note) If the fan rotates by entry of outside air, etc while the air conditioner stopped, the indoor unit may operate as the fan motor stops.</p> <p>(Note) If the fan lock was detected, the operation of the indoor unit stops and the check code is displayed.</p>	Check code [P12]																		
18	Save operation	<ol style="list-style-type: none"> The save operation starts when  button on the remote control is turned on. While the save operation is performed,  segment goes on the screen of the wired remote control. The request capacity ratio is restricted to approx. 75% during save operation. If the save operation was validated, the contents are held during the operation stop, the operation mode change and the resetting of power supply. Therefore the operation at the next time also will be activated with "Save operation is valid". 																			

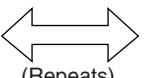
6-2. High Wall Type

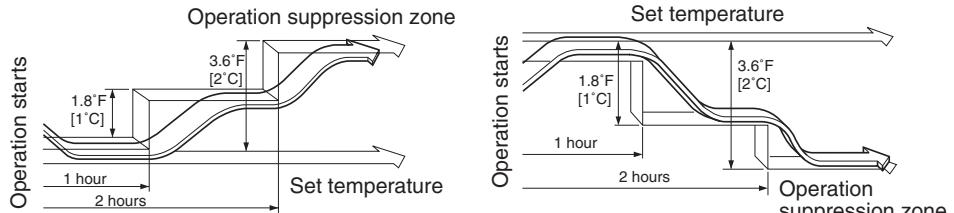
No.	Item	Outline of specifications	Remarks																					
1	When power supply is reset	<p>1) Distinction of outdoor unit When the power supply is reset, the outdoors are distinguished and the control is selected according to the distinguished result.</p> <p>2) If resetting the power supply during occurrence of a trouble, the check code is once cleared. After ON/OFF button of the remote control was pushed and the operation was resumed, if the abnormal status continues, the check code is again displayed on the remote control.</p>																						
2	Operation mode selection	<p>1) Based on the operation mode selecting command from the remote control, the operation mode is selected.</p> <table border="1"> <thead> <tr> <th>Remote control command</th><th>Control outline</th></tr> </thead> <tbody> <tr> <td>STOP</td><td>Air conditioner stops.</td></tr> <tr> <td>FAN</td><td>Fan operation</td></tr> <tr> <td>COOL</td><td>Cooling operation</td></tr> <tr> <td>DRY</td><td>Dry operation</td></tr> <tr> <td>HEAT</td><td>Heating operation</td></tr> </tbody> </table>	Remote control command	Control outline	STOP	Air conditioner stops.	FAN	Fan operation	COOL	Cooling operation	DRY	Dry operation	HEAT	Heating operation	<p>Ta: Room temp. Ts: Setup temp.</p>									
Remote control command	Control outline																							
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3	Room temp. control	<p>1) Adjustment range: Remote control setup temperature (°F [°C])</p> <table border="1"> <thead> <tr> <th></th><th>COOL/DRY</th><th>HEAT</th></tr> </thead> <tbody> <tr> <td>Wired type</td><td>64°F [18°C] to 84°F [29°C]</td><td>64°F [18°C] to 84°F [29°C]</td></tr> <tr> <td>Wireless type</td><td>63°F [17°C] to 86°F [30°C]</td><td>63°F [17°C] to 86°F [30°C]</td></tr> </tbody> </table> <p>2) Using the Item code 06, the setup temperature in heating operation can be corrected.</p> <table border="1"> <thead> <tr> <th>Setup data</th><th>0</th><th>2</th><th>4</th><th>6</th></tr> </thead> <tbody> <tr> <td>Setup temp. Correction</td><td>+0°F [+0°C]</td><td>+3.6°F [+2°C]</td><td>+7.2°F [+4°C]</td><td>+10.8°F [+6°C]</td></tr> </tbody> </table> <p>Setting at shipment</p> <table border="1"> <thead> <tr> <th>Setup data</th><th>3</th></tr> </thead> </table>		COOL/DRY	HEAT	Wired type	64°F [18°C] to 84°F [29°C]	64°F [18°C] to 84°F [29°C]	Wireless type	63°F [17°C] to 86°F [30°C]	63°F [17°C] to 86°F [30°C]	Setup data	0	2	4	6	Setup temp. Correction	+0°F [+0°C]	+3.6°F [+2°C]	+7.2°F [+4°C]	+10.8°F [+6°C]	Setup data	3	<p>Shift of suction temperature in heating operation</p> <p>Except while sensor of the remote control is controlled (Code No. [32], "0001")</p>
	COOL/DRY	HEAT																						
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Setup data	3																							
4	Automatic capacity control	<p>1) Based on the difference between Ta and Ts, the operation capacity is determined by the outdoor unit.</p>	<p>Ts: Setup temp. Ta: Room temp.</p>																					
5	Air speed selection	<p>1) Operation with (HH), (H), (L) or [AUTO] mode is carried out by the command from the remote control. For the wireless remote control type, (HH), (H+), (H), (L+), (L) or [AUTO] operation is carried out.</p> <p>2) When the air speed mode [AUTO] is selected, the air speed varies by the difference between Ta and Ts.</p>	HH > H+ > H > L+ > L > UL																					

No.	Item	Outline of specifications	Remarks															
6	Prevention of cold air discharge	<p>1. In heating operation, the higher temperature of TC2 sensor and TCJ sensor is compared with temperature of TC1 sensor and then the lower temperature is used to set the upper limit of the fan tap.</p> <ul style="list-style-type: none"> When B zone has continued for 6 minutes, the operation shifts to C zone. In defrost time, the control point is set to $+10.8^{\circ}\text{F}$ [6°C]. <p>A zone: OFF B zone: Over 86°F [30°C], below 90°F [32°C], ULTRA LOW (LL) C zone: Over 90°F [32°C], below 93°F [34°C], LOW (L) D zone: Over 93°F [34°C], below 97°F [36°C], MED (H) E zone: HIGH (HH)</p>	<p>TCJ: Temperature of indoor heat exchanger sensor</p> <ul style="list-style-type: none"> In D and E zones, priority is given to remote control air speed setup. In A zone “” is displayed. 															
7	Freeze prevention control (Low temp. release)	<p>1. In all cooling operation, the air conditioner operates as described below based upon temp. detected by TC1, TC2 and TCJ sensors.</p> <ul style="list-style-type: none"> When “J” zone is detected for 5 minutes, the thermostat is forced off. In “K” zone, the timer count is interrupted, and held. When “I” zone is detected, the timer is cleared and the operation returns to the normal operation. If forced thermo OFF by continuation of “J” zone, operation of the indoor fan in LOW mode continues until it reaches the “I” zone. <p>It is rest when the following conditions are satisfied.</p> <p>Reset conditions</p> <ol style="list-style-type: none"> $\text{TC1} \geq 54^{\circ}\text{F}$ [12°C] and $\text{TC2} \geq 54^{\circ}\text{F}$ [12°C] and $\text{TCJ} \geq 54^{\circ}\text{F}$ [12°C] 20 minutes passed after stop. <table border="1"> <thead> <tr> <th></th> <th>TC1</th> <th>TC2, TCJ</th> </tr> </thead> <tbody> <tr> <td>P1</td> <td>50°C [41°F] 10°C [5°C]</td> <td>14°F [-10°C]</td> </tr> <tr> <td>Q1</td> <td>32.5°F [0°C]</td> <td>7°F [-14°C]</td> </tr> </tbody> </table> <p>2. In all cooling operation, the air conditioner operates as described below based upon temp. detected by TC2 and TCJ sensors.</p> <ul style="list-style-type: none"> When “M” zone is detected for 45 minutes, the thermostat is forced off. In “N” zone, the timer count is interrupted and held. When shifting to “M” zone again, the timer count restarts and continues. If “L” zone is detected, the timer is cleared and the operation returns to normal operation. <p>Reset conditions</p> <ol style="list-style-type: none"> $\text{TC1} \geq 54^{\circ}\text{F}$ [12°C] and $\text{TC2} \geq 54^{\circ}\text{F}$ [12°C] and $\text{TCJ} \geq 54^{\circ}\text{F}$ [12°C] 20 minutes passed after stop. <table border="1"> <thead> <tr> <th></th> <th>TC2, TCJ</th> </tr> </thead> <tbody> <tr> <td>P2</td> <td>41°F [5°C]</td> </tr> <tr> <td>Q2</td> <td>28°F [-2°C]</td> </tr> </tbody> </table>		TC1	TC2, TCJ	P1	50°C [41°F] 10°C [5°C]	14°F [- 10°C]	Q1	32.5°F [0°C]	7°F [- 14°C]		TC2, TCJ	P2	41°F [5°C]	Q2	28°F [- 2°C]	<p>TC1: Temperature of indoor heat exchanger sensor</p> <p>() value: When the power supply is turned on, the Forced thermo becomes OFF if the temperature is less than this indicated temperature.</p>
	TC1	TC2, TCJ																
P1	50°C [41°F] 10°C [5°C]	14°F [- 10°C]																
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No.	Item	Outline of specifications	Remarks
8	Recovery control for cooling oil (Refrigerant)	<p>The indoor unit which is under STOP/Thermo-OFF status or which operates in [FAN] mode performs the following controls when it received the cooling oil (Refrigerant) recovery signal from the outdoor unit.</p> <ol style="list-style-type: none"> 1) Opens PMV of the indoor unit with a constant opening degree. 2) Operates the indoor fan for approx. 3 minutes during recovery control and after finish of control. 	<ul style="list-style-type: none"> • Recovery operation is usually performed every 2 hours 5 minutes.
9	Recovery control for heating refrigerant (Oil)	<p>The indoor unit which is under STOP/Thermo-OFF status or which operates in [FAN] mode performs the following controls when it received the heating refrigerant (Oil) recovery signal from the outdoor unit.</p> <ol style="list-style-type: none"> 1) Opens PMV of the indoor unit with a constant opening degree. 2) Stop the indoor fan. 	<ul style="list-style-type: none"> • The indoor unit which is under thermo-OFF (COOL) status or which operates in [FAN] mode stops the indoor fan and displays []. • Recovery operation is usually performed every 1 hour. (When there is even 1 indoor unit which the thermo unit is off)
10	Compensation control for short intermittent operation	<ol style="list-style-type: none"> 1) For 3 minutes after start of operation, the operation is forcedly continued even if the unit enters in Thermo-OFF condition. 2) However the thermostat is OFF giving prior to COOL/HEAT selection, ready for operation and protective control. 	Usually the priority is given to 5 minutes at outdoor control side.
11	Elimination of retained heat	<ol style="list-style-type: none"> 1) When the unit stopped from [HEAT] operation, the indoor fan operates with [L] for approx. 30 seconds. 	
12	<p>Display of filter sign [] (Not provided to the wireless type)</p> <p>* Separately set type TCB-AX21UL is prepared.</p>	<ol style="list-style-type: none"> 1) The filter sign is displayed with LC by sending the filter-reset signal to the remote control when the specified time (150H) elapsed as a result of integration of the operation time of the indoor fan. 2) The integrated timer is cleared when the filter-reset signal is received from the remote control. In this time, if the specified time elapsed, the counted time is reset and the LC display is deleted. 	[ FILTER] goes on.

No.	Item	Outline of specifications	Remarks																																																			
13	Display of [OPERATION READY] [PRE-HEAT]	<p><OPERATION READY> Displayed on the remote control</p> <p>1) When the following check codes are indicated</p> <ul style="list-style-type: none"> • Open phase of power supply wiring [P05] was detected. • There is an indoor unit that detected the indoor overflow [P10]. • There is an indoor unit that detected the interlock alarm [L30]. <p>2) During Force Thermo-OFF</p> <ul style="list-style-type: none"> • [COOL/DRY] operation is unavailable because the other indoor unit operates with [HEAT] mode. • [HEAT] operation is unavailable because COOL priority (SW11-bit1 of the Outdoor I/F P. C. board is ON) is set and the other indoor unit operates with [COOL/DRY] mode. <p>3) The above indoor units that cannot operate stay in Thermo-OFF status.</p> <p>4) The indoor fan stops because the system performs [Recovery operation for heating refrigerant (Oil)].</p> <p><PRE-HEAT> Displayed on the remote control</p> <p>The indoor fan stops in order to prevent discharge of cool air when heating operation started or during heating operation. (including the defrost operation during thermo-OFF)</p>	<ul style="list-style-type: none"> • <> display No display for wireless remote control • <> display 																																																			
14	Selection of central control mode	<p>1) Selection of the contents that can be operated by the remote control at the indoor unit side is possible according to setting at the central control side.</p> <p>2) Setting contents</p> <p>• In case of TCC-LINK central control</p> <table border="1"> <thead> <tr> <th rowspan="2">Operation from TCC-LINK central control</th> <th colspan="6">Operation on RBC-AMT32UL</th> <th rowspan="2">On RBC-AMT32UL</th> </tr> <tr> <th>ON/OFF setting</th> <th>Operation selection</th> <th>Timer setting</th> <th>Temp. setting</th> <th>Air speed setting</th> <th>Air direction setting</th> </tr> </thead> <tbody> <tr> <td>Individual</td> <td>○</td> <td>○</td> <td>○</td> <td>○</td> <td>○</td> <td>○</td> <td>No display</td> </tr> <tr> <td>[Central 1]</td> <td>×</td> <td>○</td> <td>×</td> <td>○</td> <td>○</td> <td>○</td> <td rowspan="4">[Central control display]</td> </tr> <tr> <td>[Central 2]</td> <td>×</td> <td>×</td> <td>×</td> <td>×</td> <td>○</td> <td>○</td> </tr> <tr> <td>[Central 3]</td> <td>○</td> <td>×</td> <td>○</td> <td>×</td> <td>○</td> <td>○</td> </tr> <tr> <td>[Central 4]</td> <td>○</td> <td>×</td> <td>○</td> <td>○</td> <td>○</td> <td>○</td> </tr> </tbody> </table> <p>(○: Operation possible ×: Operation impossible)</p> <ul style="list-style-type: none"> • In case of wired remote control type, [Central control] display (Goes on) in the central control mode • Display flashes when an item of the operation prohibited was changed on the remote control. • In case of wireless remote control type, the display lamp does not change but the contents that can be operated are same in the central control mode. • (*1) The operation from the wireless remote control in the central control mode is notified with the receiving sound, Pi, Pi, Pi, Pi, Pi (5 times). • (*1) If the operation select modes are different in the central 2 to 4 from those at the central control side, the operations Temp. Setting, air volume setting, and air direction setting are inoperable. 	Operation from TCC-LINK central control	Operation on RBC-AMT32UL						On RBC-AMT32UL	ON/OFF setting	Operation selection	Timer setting	Temp. setting	Air speed setting	Air direction setting	Individual	○	○	○	○	○	○	No display	[Central 1]	×	○	×	○	○	○	[Central control display]	[Central 2]	×	×	×	×	○	○	[Central 3]	○	×	○	×	○	○	[Central 4]	○	×	○	○	○	○	
Operation from TCC-LINK central control	Operation on RBC-AMT32UL						On RBC-AMT32UL																																															
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[Central 3]	○	×	○	×	○	○																																																
[Central 4]	○	×	○	○	○	○																																																

No.	Item	Outline of specifications	Remarks
15	Louver control	<p>1) Louver position setup (Wired type)</p> <ul style="list-style-type: none"> The louver position can be set up in the following operation range. <p>In cooling/dry operation In heating/fan operation</p>   <ul style="list-style-type: none"> In group operation, the louver positions can be set up collectively or individually. <p>2) Swing setup</p> <ul style="list-style-type: none"> The following display is repeated. <p>In all operations</p>    <ul style="list-style-type: none"> In group operation, the louver positions can be set up collectively or individually. <p>3) FIX setup (Wireless type)</p> <p>Keep pushing or pushing briefly the FIX button to move the louver in the desired direction.</p> <p>Operating angle of louver will be different during cooling, dry and heating operation.</p> <p>4) When the unit stopped or the warning was output, the louver is automatically set to full closed position.</p> <p>5) When PRE-HEAT  is displayed (Heating operation started or defrost operation is performed), heating thermo is off, the louver is automatically set to horizontal discharge position.</p>	
16	Hi POWER operation (Wireless remote control specific operations)	<p>When you push the Hi POWER button during cooling, heating or A operation, the air conditioner will start the following operation.</p> <ul style="list-style-type: none"> Cooling operation <p>Performs the cooling operation at 1.8°F[1°C] lower than the setting temperature.</p> <p>Only when the fan speed before the Hi POWER operation is not high, the fan speed will be increased.</p> <ul style="list-style-type: none"> Heating operation <p>Performs the heating operation at 3.6°F[2°C] higher than the setting temperature.</p> <p>Only when the fan speed before the Hi POWER operation is not high, the fan speed will be increased.</p>	<ul style="list-style-type: none"> [Hi POWER] Display

No.	Item	Outline of specifications	Remarks
17	COMFORT SLEEP operation (Wireless remote control specific operations)	<p>When you push the COMFORT SLEEP button during cooling, heating or A operation, the air conditioner will start the following operation.</p> <p>The fan speed display will indicate AUTO and low speed will be used.</p> <p>• Cooling operation</p> <p>In the operation suppression zone, where capacity is kept to the minimum, overcooling is prevented by raising the temperature setting by 1.8°F[1°C] after 1 hour and by 3.6°F[2°C] after 2 hours of operation.</p> <p>The room temperature is thus regulated between the operation suppression zone and the set temperature.</p> <p>When the OFF timer is simultaneously set, 1, 3, 5 and 9 hours appear by turns every pushing COMFORT SLEEP button and one of them can be selected for OFF timer.</p> <p>• Heating operation</p> <p>In the operation suppression zone, where capacity is kept to the minimum, overheating is prevented by lowering the temperature setting by 1.8°F[1°C] after 1 hour and by 3.6°F[2°C] after 2 hours of operation.</p> <p>The room temperature is thus regulated between the set temperature and the operation suppression zone.</p> <p>When the OFF timer is simultaneously set, 1, 3, 5 and 9 hours appear by turns every pushing COMFORT SLEEP button and one of them can be selected for OFF timer.</p> 	• [] display
18	PRESET operation (Wireless remote control specific operations)	<p>Start the air conditioner in the operation mode which you want the remote control to memorize.</p> <ol style="list-style-type: none"> Push and hold the PRESET button for more than 3 seconds while the display flashes. <p>The mark is indicated and the setting is memorized.</p> <ul style="list-style-type: none"> If you do not push the PRESET button within 3 seconds or if you push another button, the memory setting is cancelled. Operation modes which can be memorized with the PRESET button are MODE, Temperatures, FAN, TIMER and Hi POWER. <p>To operate the air conditioner with the setting memorized by the PRESET button.</p> <ol style="list-style-type: none"> Push the PRESET button briefly. <p>The setting memorized will be indicated and the air conditioner operates with regards to the setting.</p> <ul style="list-style-type: none"> The lamp (green) on the display panel of the indoor unit goes on, and operation starts after approximately 3 minutes. Initial setting: MODE : AUTO Temperature : 71°F[22°C] 	• [] display

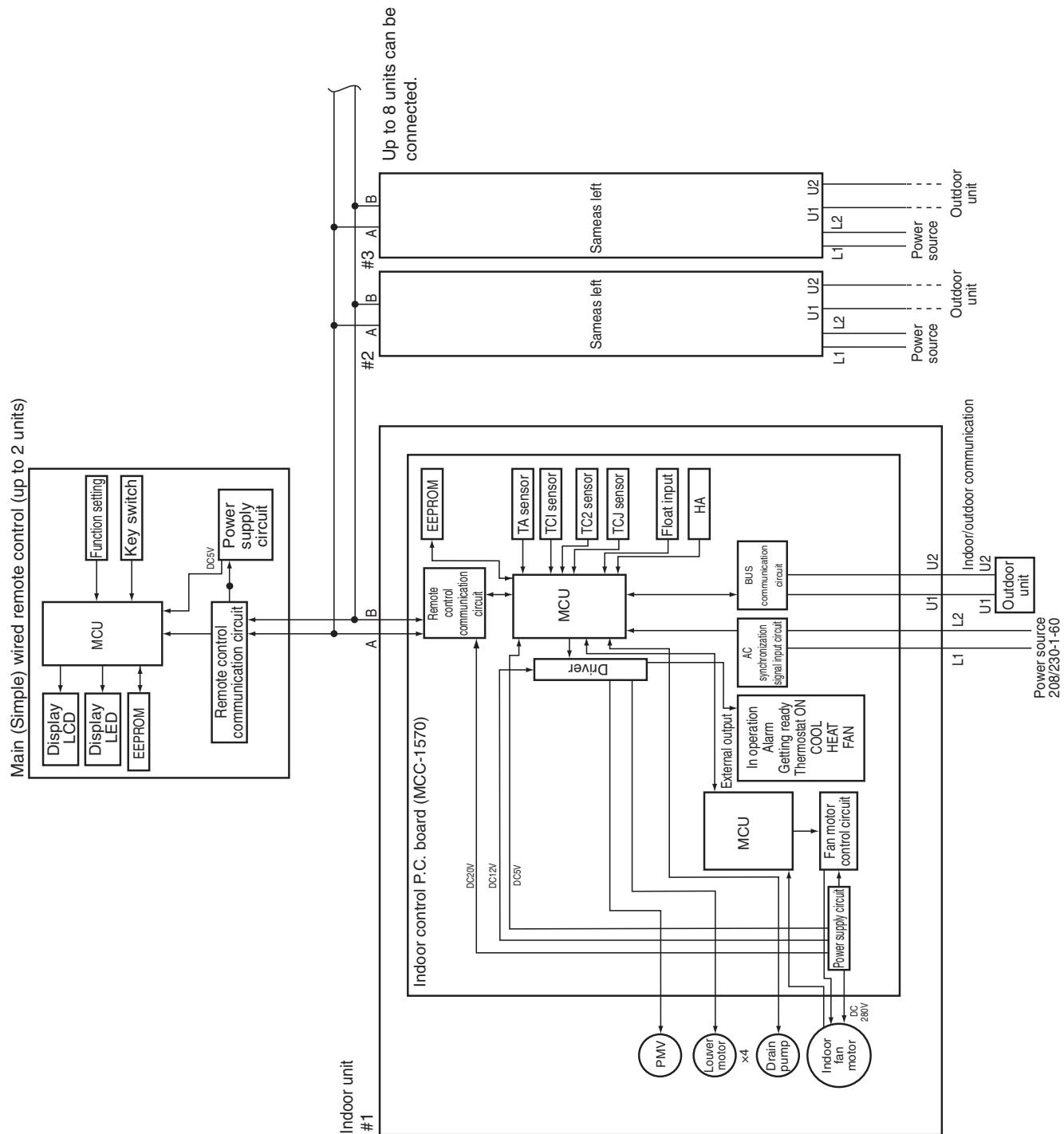
No.	Item	Outline of specifications	Remarks
19	QUIET operation (Wireless remote control specific operation)	<p>When you push the QUIET button during cooling, heating, fan only or A operation, the air conditioner will start the following operation.</p> <ul style="list-style-type: none"> The fan speed display will indicate AUTO and low speed will be used. 	<ul style="list-style-type: none"> [] display
20	SLEEP operation (Wireless remote control specific operation)	When the OFF timer is set, 1, 3, 5 and 9 hours appear by turns every pushing SLEEP button and one of them can be selected for OFF timer.	
21	Save operation	<ol style="list-style-type: none"> 1) The save operation starts when  button on the remote control is turned on. 2) While the save operation is performed,  segment goes on the screen of the wired remote control. 3) The request capacity ratio is restricted to approx. 75% during save operation. 4) If the save operation was validated, the contents are held during the operation stop, the operation mode change and the resetting of power supply. Therefore the operation at the next time also will be activated with "Save operation is valid". 	

7. APPLIED CONTROL AND FUNCTION

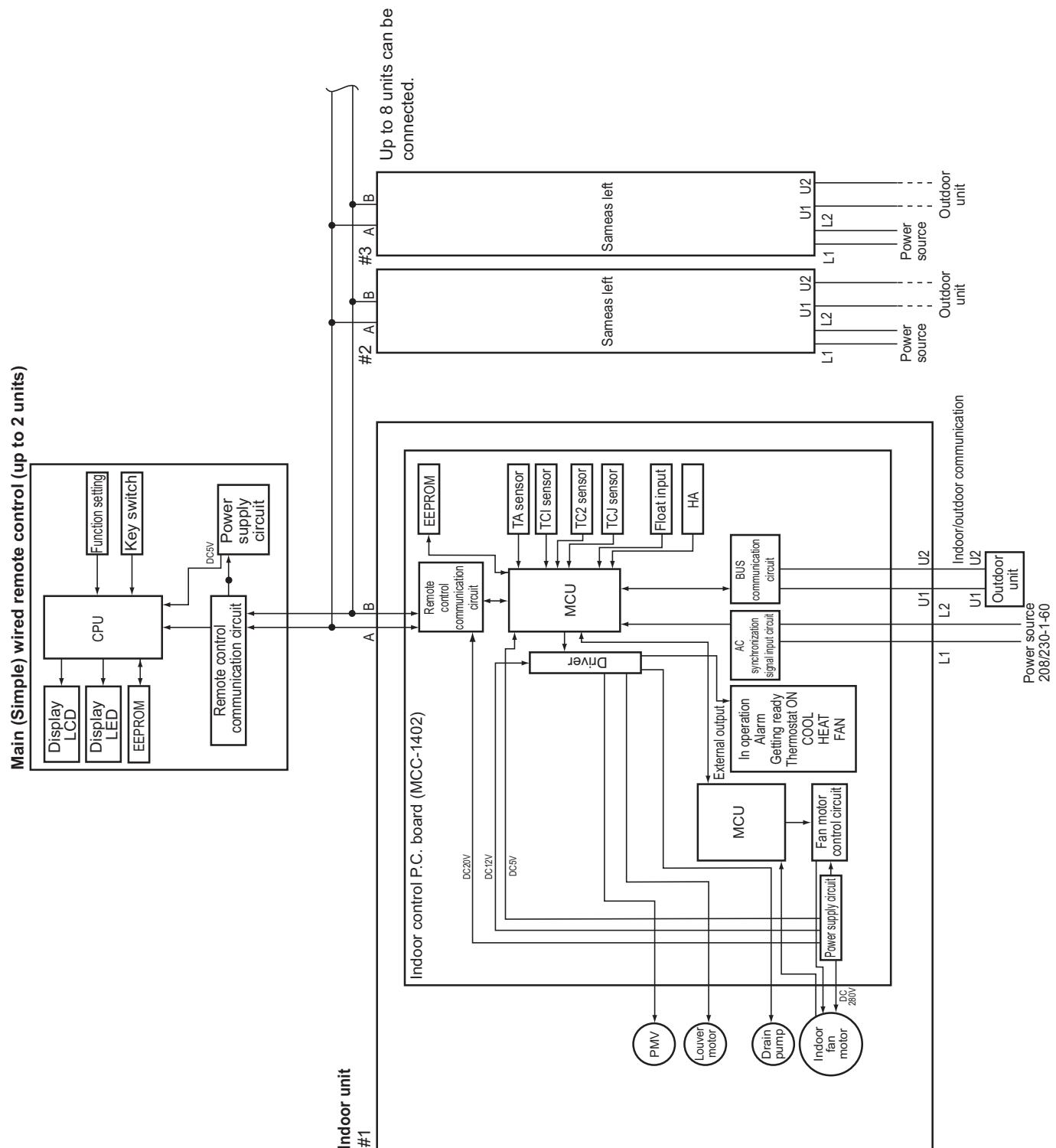
7-1. Indoor Control Block Diagram

7-1-1. When Main (Simple) Wired Remote Control Connected

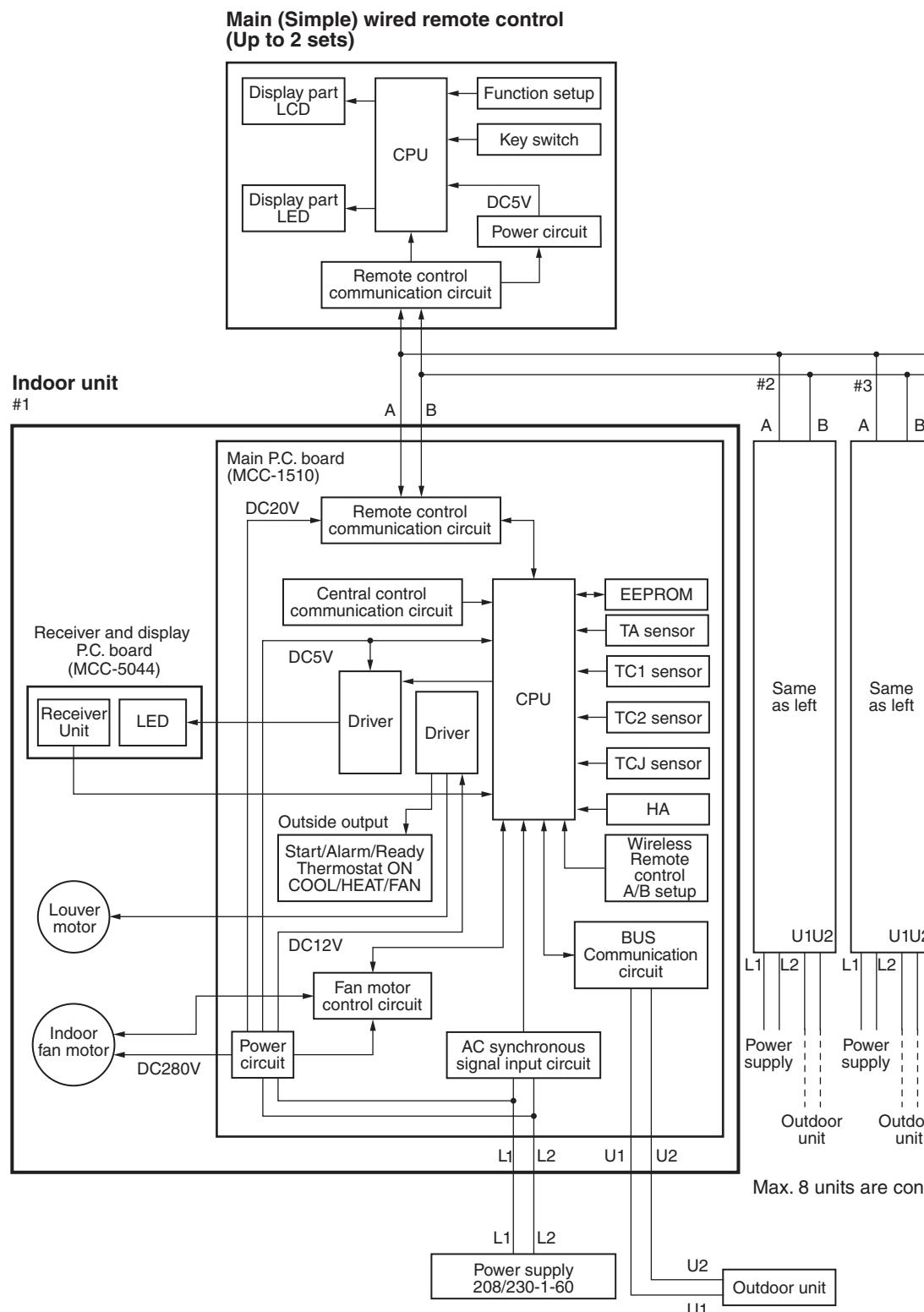
4-Way Cassette Type



Compact 4-Way Cassette Type, Ceiling Type

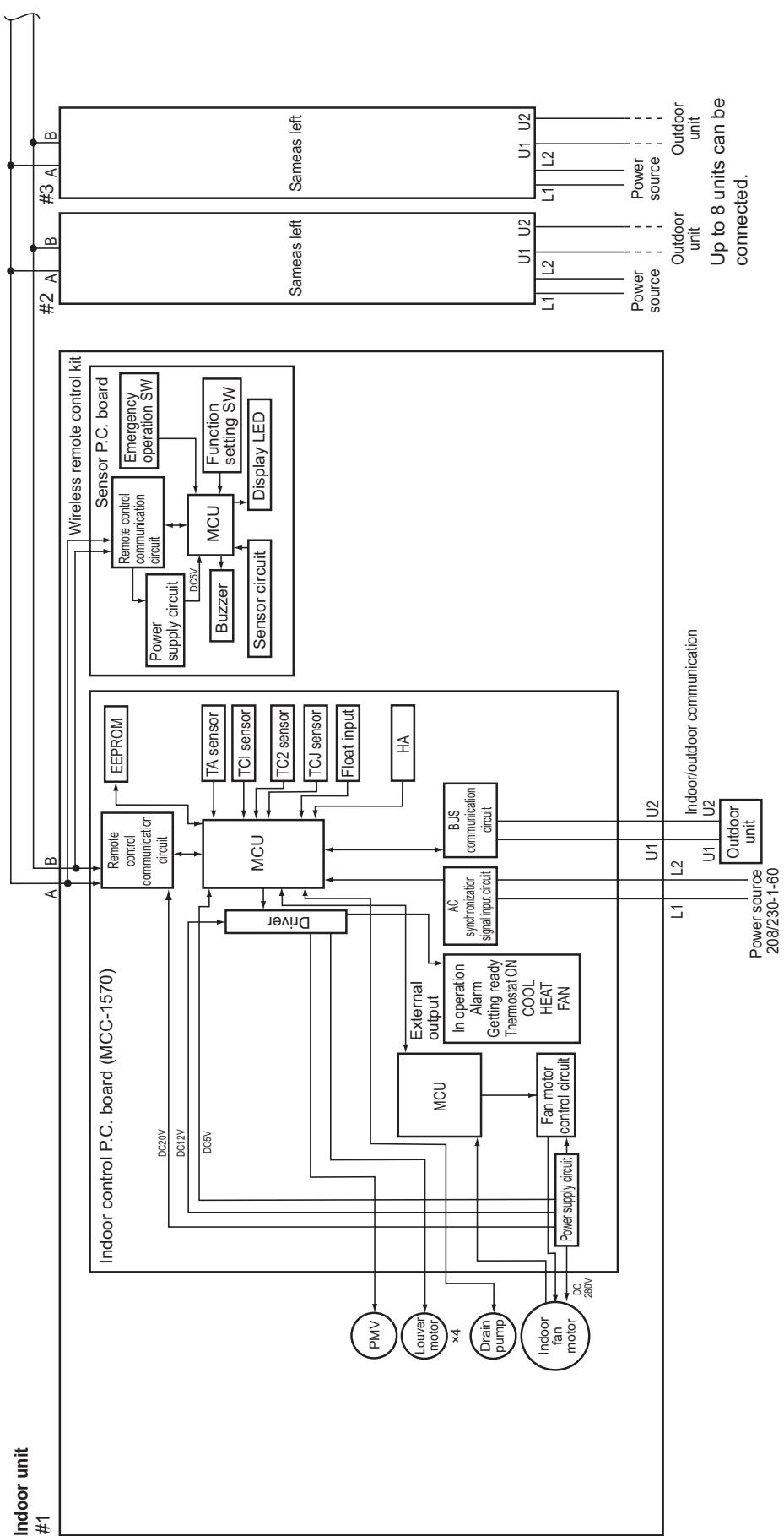


High Wall Type

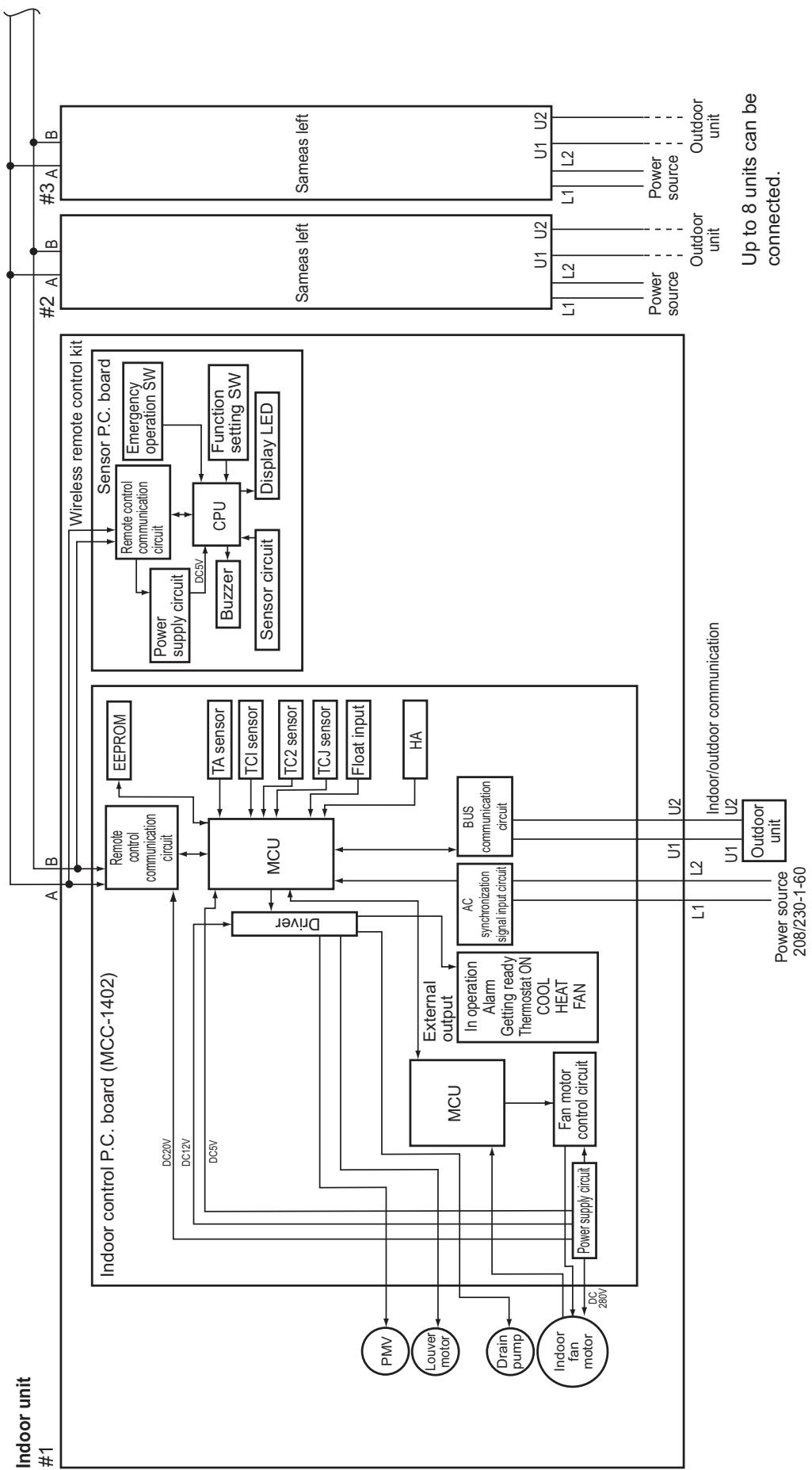


7-1-2. When Wireless Remote Control Kit Connected

4-Way Cassette Type

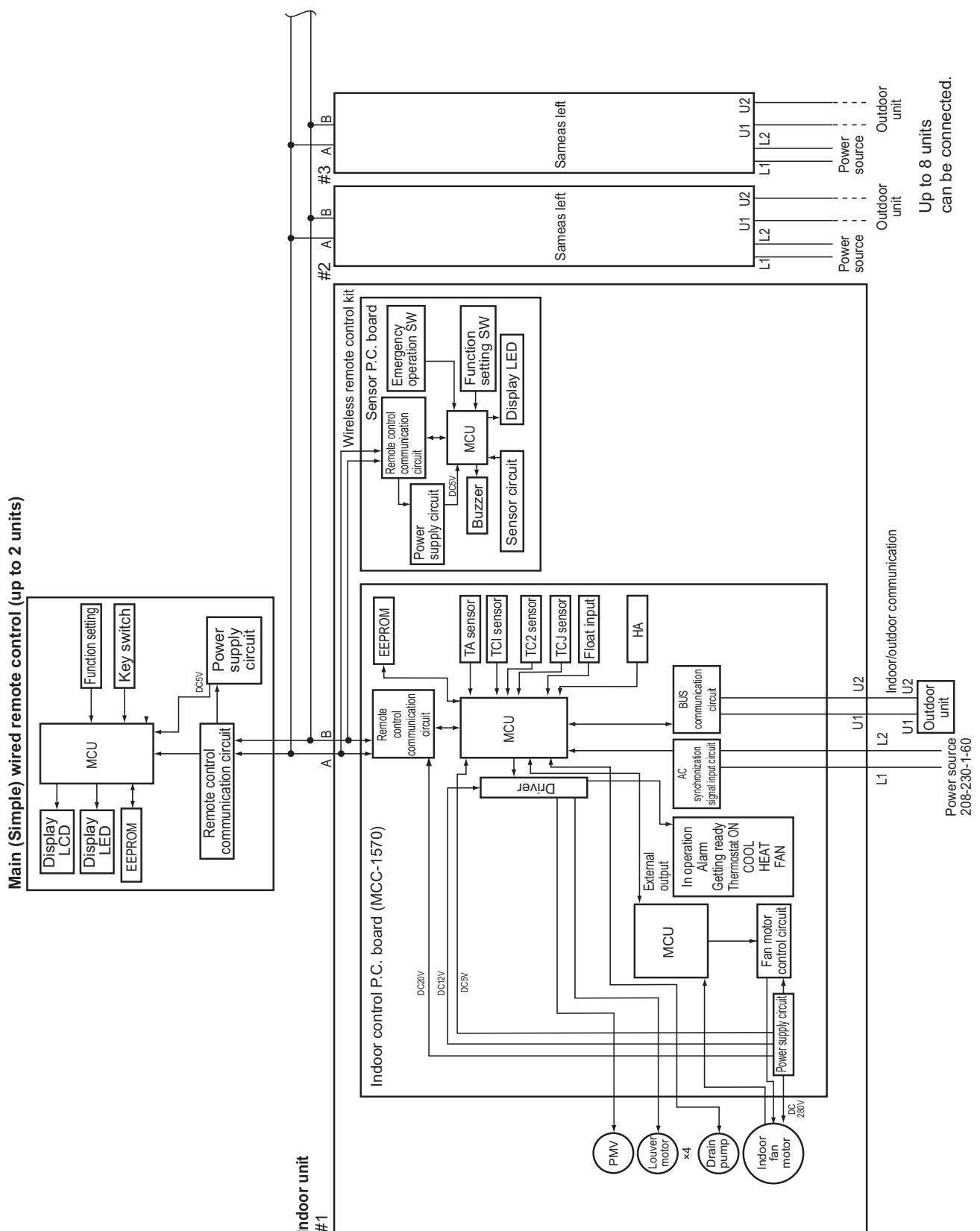


Compact 4-Way Cassette Type, Ceiling Type

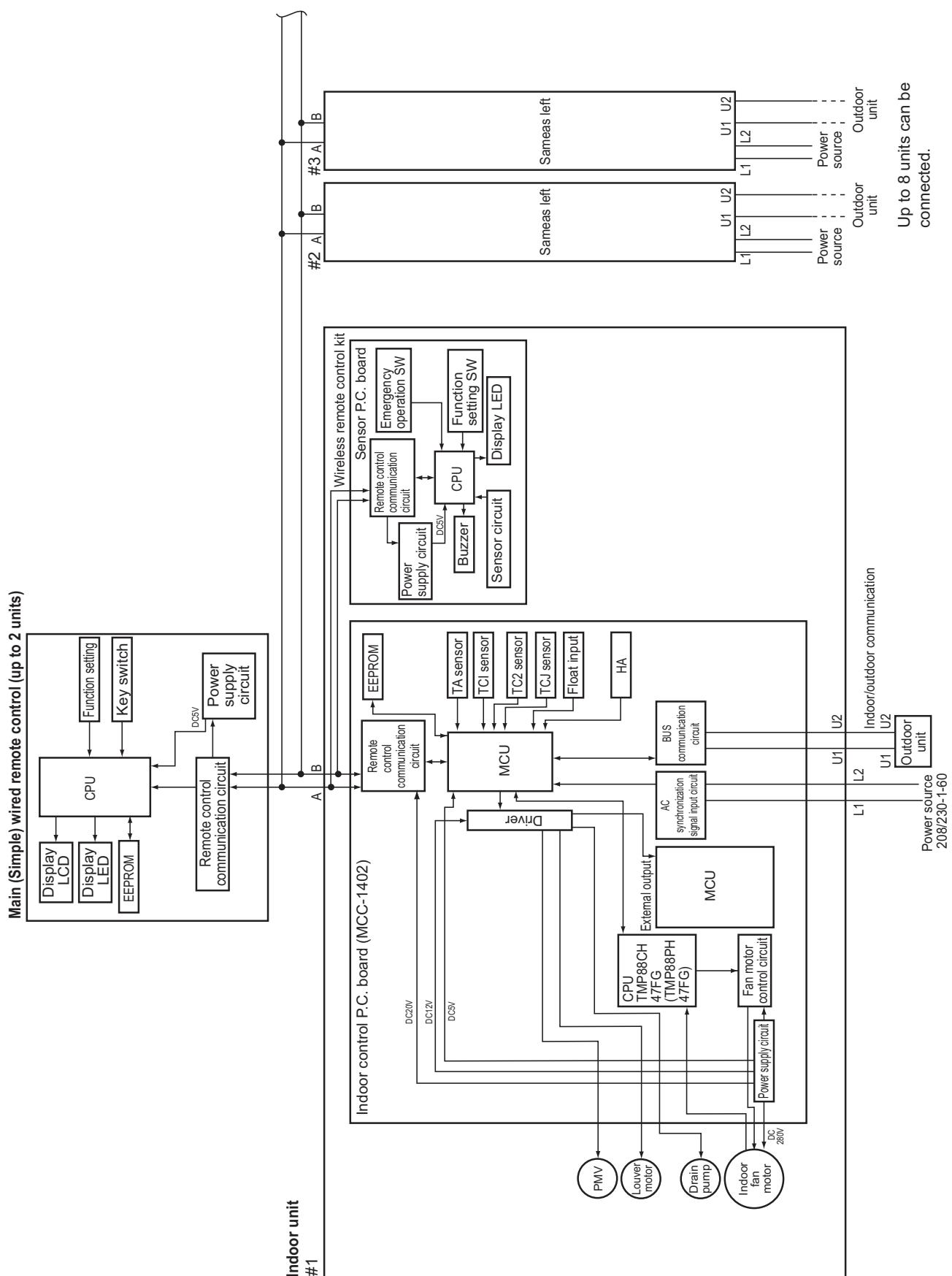


7-1-3 . When Both wired (Simple) Remote Control and Wireless Remote Control Kit Connected

4-Way Cassette Type



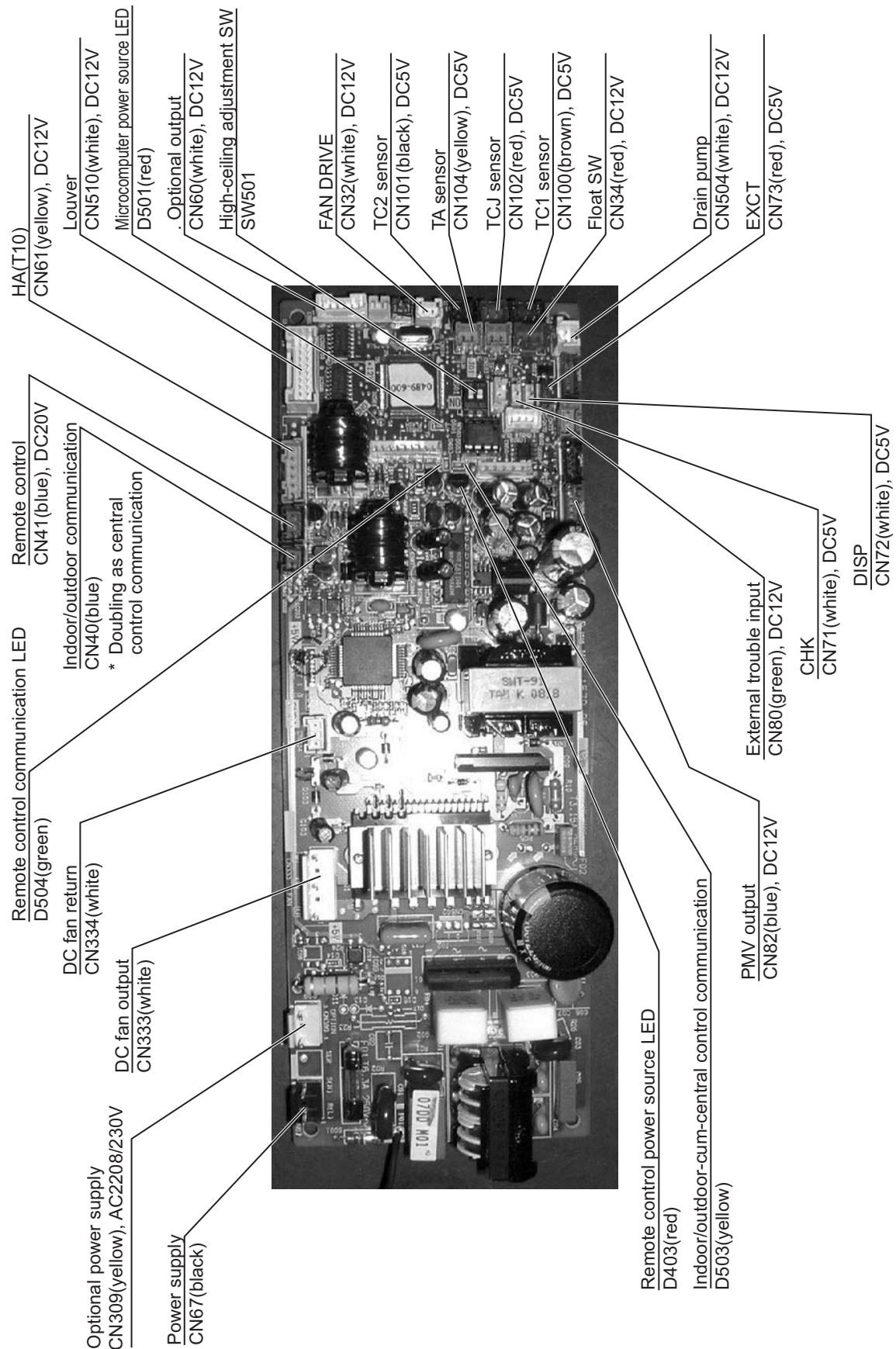
Compact 4-Way Cassette Type, Ceiling Type



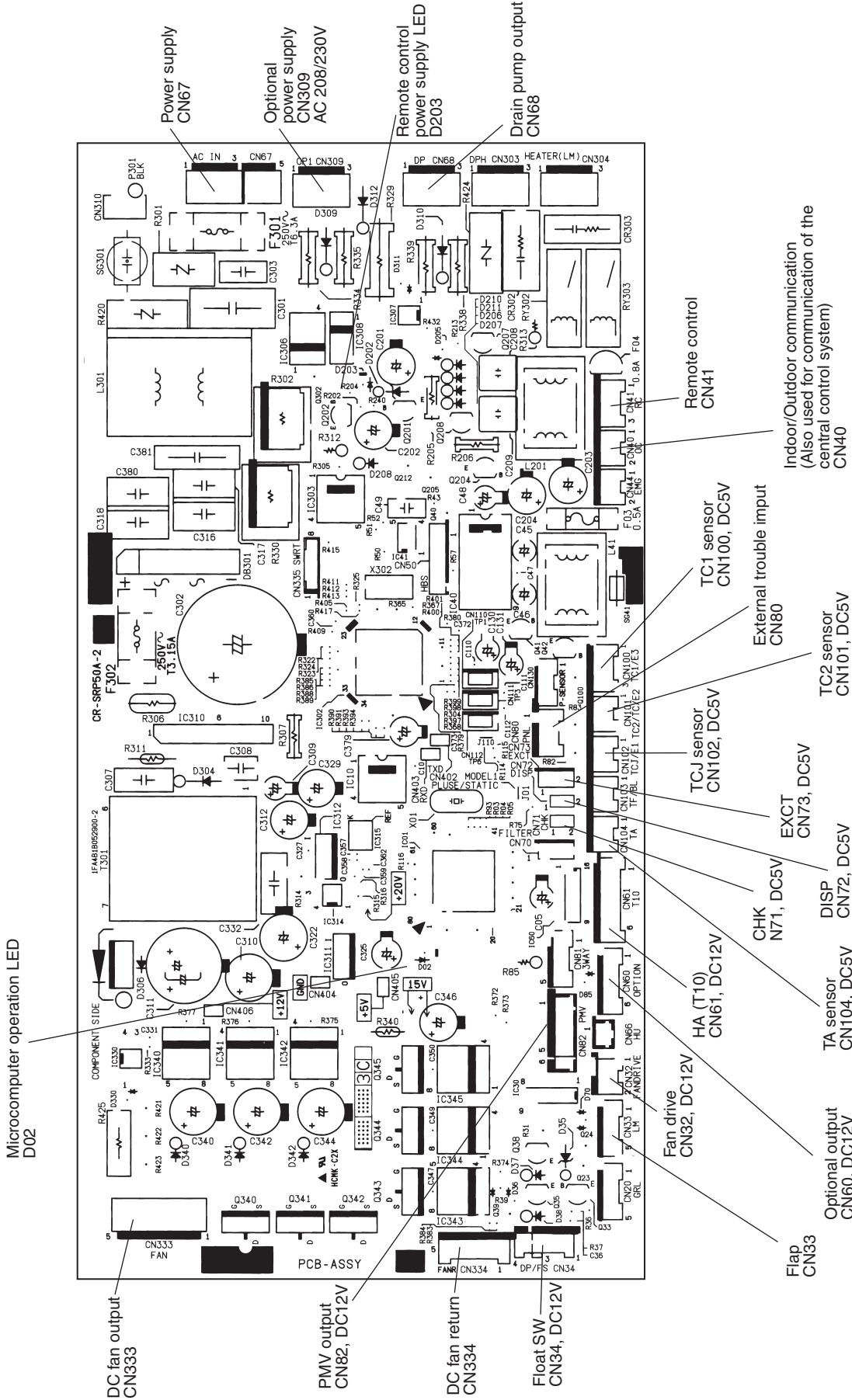
7-2. IndoorPrinted Circuit Board

MCC-1570

4 -WayCassste Type



Compact 4-Way Cassette Type, Ceiling Type

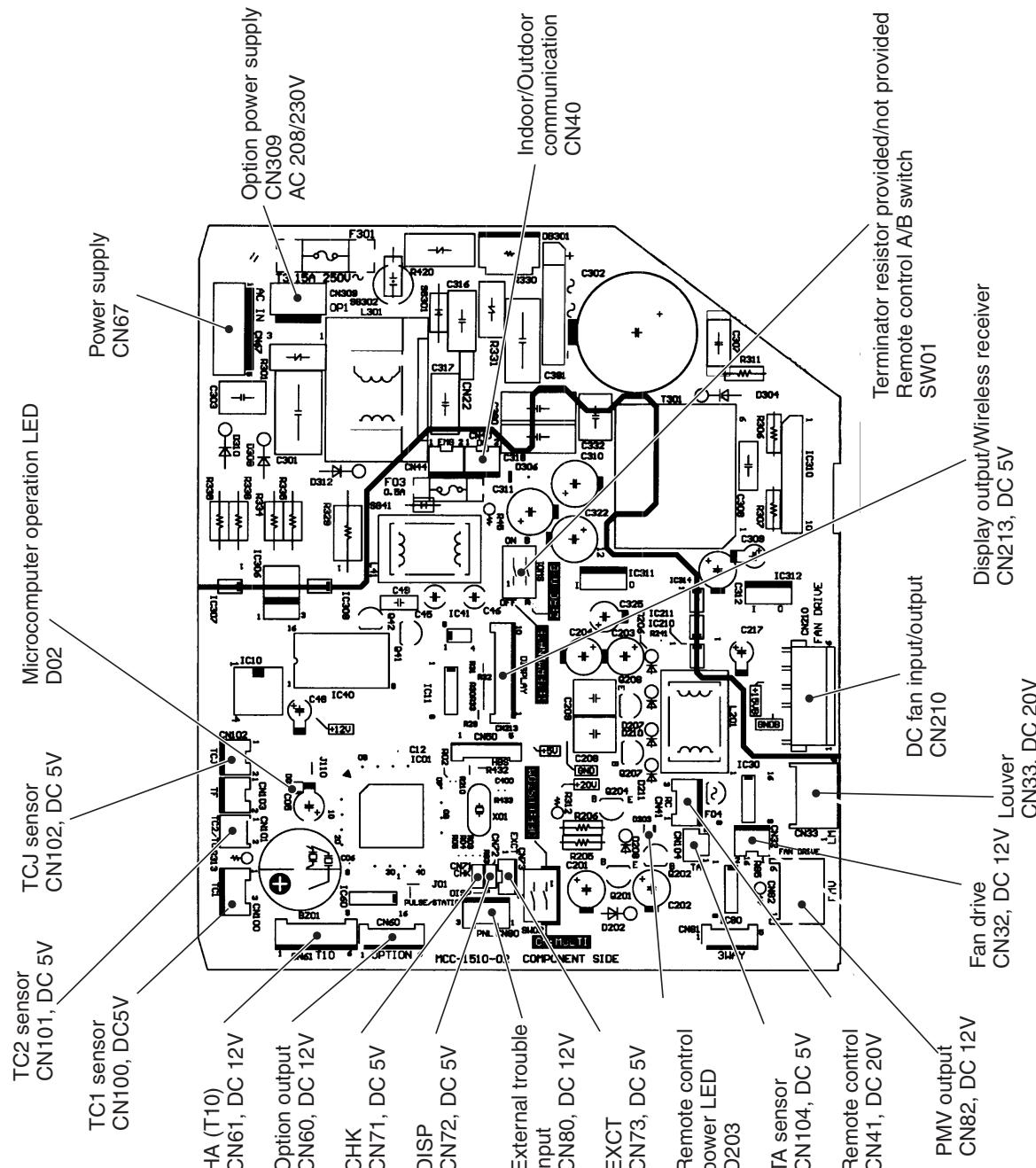


7-3. P.C. Board Optional Connector Specifications

Function	Connector No.	Pin No.	Specification	Remarks
Fan output	CN32	1	DC12V	Factory default setting: ON when indoor unit in operation and OFF when indoor unit at rest
		2	Output	* Fan can be operated on its own by pressing FAN button on remote control (DN = 31)
Optional output	CN60	1	DC12V(COM)	
		2	Defrosting output	ON while outdoor unit defrosted
		3	Thermostat ON output	ON while real thermostat ON (compressor ON)
		4	Cooling output	ON while air conditioner in cooling or related operation (COOL, DRY or cooling under AUTO mode)
		5	Heating output	ON while air conditioner in heating operation (HEAT or heating under AUTO mode)
		6	Fan output	ON while indoor fan ON (air cleaner in use or via interlock wiring)
External trouble input	CN80	1	DC12V(COM)	Generates test code L30 and automatically shuts down air conditioner (only if condition persists for 1 minute)
		2	DC12V(COM)	
		3	External trouble input	
CHK Operation check	CN71	1	Check mode input	Used for indoor operation check (prescribed operational status output, such as indoor fan "H" or drain pump ON, to be generated without communication with outdoor unit or remote control)
		2	0V	
DISP Display mode	CN72	1	Display mode input	Product display mode - Communication just between indoor unit and remote control enabled (upon turning on of power)
		2	0V	Timer short-circuited out (always)
EXCT Demand	CN73	1	Demand input	Imposes thermostat OFF on indoor unit
		2	0V	

MCC-1510

High Wall Type



High wall type P.C. Board Optional Switch/Connector Specifications

Function	Connector No.	Pin No.	Specifications	Remarks
Terminator resistor provided/Not provided	SW01	Bit 1	OFF: No terminator resistor, ON: Terminator resistor provided	Setup at shipment OFF: No terminator resistor. Only 1 unit is ON during central control by custom only.
Remote control A/B		Bit 2	OFF: Remote control A ON: Remote control B	Setup at shipment OFF: Remote control A
Fan output	CN32	1	DC12V	Setup at shipment: Linked operation of ON with operation of indoor unit and OFF with stop
		2	Output	* The setup of single operation by FAN button on remote control is executed from remote control. (DN = 31)
Optional output	CN60	1	DC12V (COM)	
		2	Defrost output	ON during defrosting of outdoor unit
		3	Thermo-ON output	ON when Real thermo. ON (Comp. ON)
		4	Cooling output	ON when operation mode is cooling line (Cool, Dry, Cooling/Heating AUTO cooling)
		5	Heating output	ON when operation mode is heating line (Heat, Cooling/Heating AUTO heating)
		6	Fan output	ON when indoor fan is ON
External trouble input	CN80	1	DC12V (COM)	Generates test code "L30" and automatically shuts down air conditioner (only if condition persists for 1 minute) (DN:2A = 2, at shipment from factory)
		2	DC12V (COM)	
		3	External trouble input	
CHK Operation check	CN71	1	Check mode input	This check is used for operation check of indoor unit. (The specified operation such as indoor fan "H", drain pump ON, etc. is executed without communication with outdoor unit or remote control.)
		2	0V	
DISP Display mode	CN72	1	Display mode input	Display mode, communication is enabled by indoor unit and remote control only. (When power supply is turned on.) Timer short (Usual)
		2	0V	
EXCT Demand	CN73	1	Demand input	Indoor unit forced thermo-OFF operation
		2	0V	

7-3. Functions at test run

■ Cooling/Heating test run check

The test run for cooling/heating can be performed from either indoor remote control or outdoor interface P.C. board.

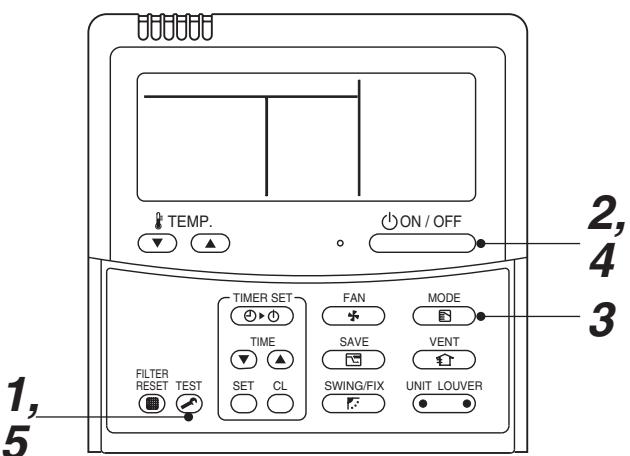
1. Start/Finish operation of test run

◎ Test run from indoor remote control

- Wired remote control: Refer to the below item of "Test run" of the wired remote control.
- Wireless remote control: Refer to the next page item of "Test run" of the wireless remote control.

◆ In case of wired remote control

<RBC-AMT32UL>

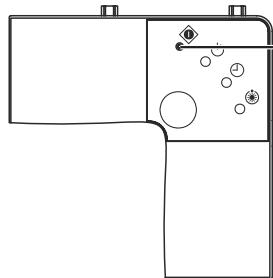


Procedure	Operation contents
1	Push [TEST] button for 4 seconds or more. [TEST] is displayed at the display part and the mode enters in TEST mode.
2	Push [ON/OFF] button.
3	Change the mode from [COOL] to [HEAT] using [MODE] button. <ul style="list-style-type: none"> • Do not use [MODE] button for other mode except [COOL]/[HEAT] modes. • The temperature cannot be adjusted during test run. • The trouble detection is performed as usual.
4	After test run, push [ON/OFF] button to stop the operation. (Display on the display part is same to that in Procedure 1.)
5	Push [TEST] button to clear the TEST mode. ([TEST] display in the display part disappears and status becomes the normal stop status.)

Note) The test run returns to the normal operation after 60 minutes.

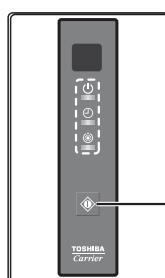
<In case of wireless remote control>

1. When TEMPORARY button is pushed for 10 seconds or more, "Pil" sound is heard and the operation changes to a forced cooling operation. After approx. 3 minutes, a cooling operation starts forcedly. Check cool air starts blowing. If the operation does not start, check wiring again.
2. To stop a test operation, push TEMPORARY button once again (Approx. 1 second).
 - Check wiring / piping of the indoor and outdoor units in forced cooling operation.



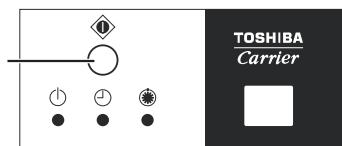
For 4-Way Cassette Type
(RBC-AX32U(W)-UL)

TEMPORARY button



For Stand alone Type
(TCB-AX32-UL)

TEMPORARY button
TEMPORARY button



For Ceiling Type
(RBC-AX33C-UL)

■ Check function for operation of indoor unit (Functions at indoor unit side)

This function is provided to check the operation of the indoor unit singly without communication with the remote control or the outdoor unit. This function can be used regardless of operation or stop of the system.

However, if using this function for a long time, a trouble of the equipment may be caused. Limit using this function within several minutes.

[How to operate]

- 1) Short-circuit CHK pin (CN71 on the indoor P.C. board).

The operation mode differs according to the indoor unit status in that time.

Normal time: Both float SW and fan motor are normal.

Abnormal time: Either one of float SW or fan motor is abnormal.

- 2) Restricted to the normal time, if short-circuiting DISP pin (CN72 on the indoor P.C. board) in addition to short-circuit of CHK pin (CN71 on the indoor P.C. board), the minimum opening degree (30pls) can be set to the indoor PMV only.

When open DISP pin, the maximum opening degree (1500pls) can be obtained again.

[How to clear]

Open CHK pin. While the system is operating, it stops once but automatically returns to operation after several minutes.

	Short-circuit of CHK pin(CN71)		
	Normal time		Abnormal time
	DISP pin open(CN71)	DISP pin short circuit(CN71)	
Fan motor	(H)	(H)	Stop
Indoor PMV (*)	Max. opening degree (1500pls)	Min. opening degree (30pls)	Min. opening degree (30pls)
Louver	Horizontal	Horizontal	Immediate stop
Drain pump	ON	ON	ON
Communication	All ignored	All ignored	All ignored
P.C. board LED	Lights	Lights	Flashes

7-4. Method to Set Indoor Unit Function DN Code

(When performing this task, be sure to use a wired remote control.)

<Procedure> To be performed only when system at rest

- 1 Push the  +  +  buttons simultaneously and hold for at least 4 seconds.

The unit No. displayed first is the address of the header indoor unit in group control.

Then the fan and louver of the selected indoor unit move.

- 2 Each time the “Select unit” side of the  button is pressed, one of the indoor unit Nos. under group control is displayed in turn. Then the fan and louver of the selected indoor unit move.

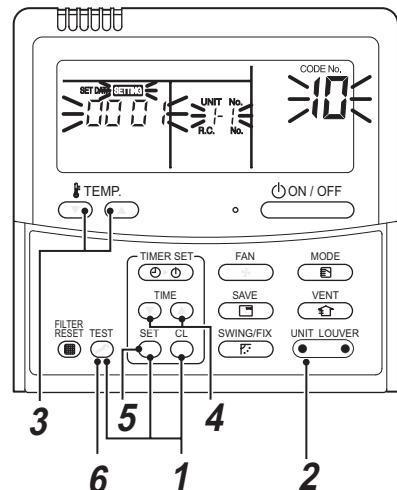
- 3 Use the  button to select the CODE No. (DN code) of the desired function.

- 4 Use the  button to select the desired SET DATA associated with the selected function.

- 5 Push the  button. (The display changes from flashing to steady.)

- To change the selected indoor unit, go back to step 2.
- To change the selected function, go back to step 3.

- 6 When the  button is pushed, the system returns to normal off state.



Function CODE No. (DN Code) Table (Includes All Functions Needed to Perform Applied Control on Site)

DN	Item	Description	At shipment
01	Filter display delay timer	0000: None 0002: 2500H 0004: 10000H	0001: 150H 0003: 5000H
02	Dirty state of filter	0000: Standard 0001: High degree of dirt (Half of standard time)	0000: Standard
03	Central control address	0001: No.1 unit to 0064: No.64 unit 0099: Unfixed	0099: Unfixed
04	Specific indoor unit priority	0000: No priority	0001: Priority
06	Heating temp shift	0000: No shift 0002: +2°C(+3.6°F) to 0010: +10°C(+18°F) (Up to +6 recommended)	0002: +2°C(+3.6°F) (Floor type 0000: 0°C)
0d	Existence of [AUTO] mode	0000: Provided 0001: Not provided (Automatic selection from connected outdoor unit)	0001: Not provided
0F	Cooling only	0000: Heat pump 0001: Cooling only (No display of [AUTO] [HEAT])	0000: Heat pump
10	Type	0001: 4-way Air Discharge Cassette	Depending on model type
11	Indoor unit capacity	0000: Unfixed	0001 to 0034
12	Line address	0001: No.1 unit to 0030: No.30 unit	0099: Unfixed
13	Indoor unit address	0001: No.1 unit to 0064: No.64 unit	0099: Unfixed
14	Group address	0000: Individual 0002: Follower unit of group	0001: Header unit of group
19	Louver type (Air direction adjustment)	0000: No louver 0002: (1-way Air Discharge Cassette type, Under Ceiling type) 0003: (2-way Air Discharge Cassette type) 0004: (4-way Air Discharge Cassette type)	0001: Swing only
28	Automatic restart of power failure	0000: None	0001: Restart
2A	Selection of option/trouble input (CN70)	0000: Filter input 0002: None	0001: Alarm input (Air washer, etc.)
2E	HA terminal (CN61) select	0000: Usual 0002: Fire alarm input	0001: Leaving-ON prevention control
31	Ventilating fan control	0000: Unavailable	0001: Available
32	TA sensor selection	0000: Body TA sensor	0001: Remote control sensor
33	Temperature unit select	0000: °C	0001: °F : (at factory shipment)
F0	Swing mode	0001: Standard 0003: Cycle swing	0002: Dual swing
F1	Louver fixed position (Louver No.1)	0000: Release 0005: Downward discharge position	0001: Horizontal discharge position
F2	Louver fixed position (Louver No.2)	0000: Release 0005: Downward discharge position	0001: Horizontal discharge position
F3	Louver fixed position (Louver No.3)	0000: Release 0005: Downward discharge position	0001: Horizontal discharge position
F4	Louver fixed position (Louver No.4)	0000: Release 0005: Downward discharge position	0001: Horizontal discharge position

DN	Item	Description										At shipment		
	High-ceiling adjustment (Air flow selection)											0000: Standard		
4-way Cassette														
Value	Type	AP007, AP009, AP012			AP015, AP018			AP021, AP024, AP030			AP036, AP042			
0000	Air flow at outlet	4-Way	3-Way	2-Way	4-Way	3-Way	2-Way	4-Way	3-Way	2-Way	4-Way	3-Way	2-Way	
0000	Standard (factory default)	8'10" (2.7)	9'2" (2.8)	9'10" (3.0)	9'2" (2.8)	10'6" (3.2)	11'6" (3.5)	9'10" (3.0)	10'10" (3.3)	11'10" (3.6)	12'10" (3.9)	13'9" (4.2)	14'9" (4.5)	
0001	High-ceiling (1)	—	—	—	10'6"(3.2)	11'6"(3.5)	12'6"(3.8)	10'10"(3.3)	11'6"(3.5)	12'6"(3.8)	13'9"(4.2)	14'5"(4.4)	15'1"(4.6)	
0003	High-ceiling (3)	—	—	—	11'6"(3.5)	12'6"(3.8)	—	11'10"(3.6)	12'6"(3.8)	—	14'9"(4.5)	15'1"(4.6)	—	
Ceiling														
Value	Type	AP015~AP056												
0000	Standard (factory default)	3.5 m or less												
0001	High-ceiling (1)	4.0 m or less												
60	Timer setting (wired remote control)	0000: Available (can be performed) 0001: Unavailable (cannot be performed)										0000: Available		

Type

DN code "10"

Value	Type	Model
0001* ¹	4-way Cassette	MMU-AP*** H2UL *
0007	Ceiling	MMC-AP*** H2UL
0008	High Wall	MMK-AP*** H2UL
0014	Compact 4-way Cassette	MMU-AP*** MH2UL

*1 Default value stored in EEPROM mounted on service P.C. board

Indoor Unit Capacity

DN code "11"

Value	Capacity
0000*	Invalid
0001	007 type
0003	009 type
0005	012 type
0007	015 type
0009	018 type
0010	021 type
0011	024 type
0012	027 type
0013	030 type
0015	036 type
0016	042 type
0017	048 type
0018	056 type
0021	072 type
0023	096 type
~	—

*1 Default value stored in EEPROM
mounted on service P.C. board

7-5. Applied Control in Indoor Unit

■ Remote location ON/OFF control box (TCB-IFCB-4UL)

[Wiring and setup]

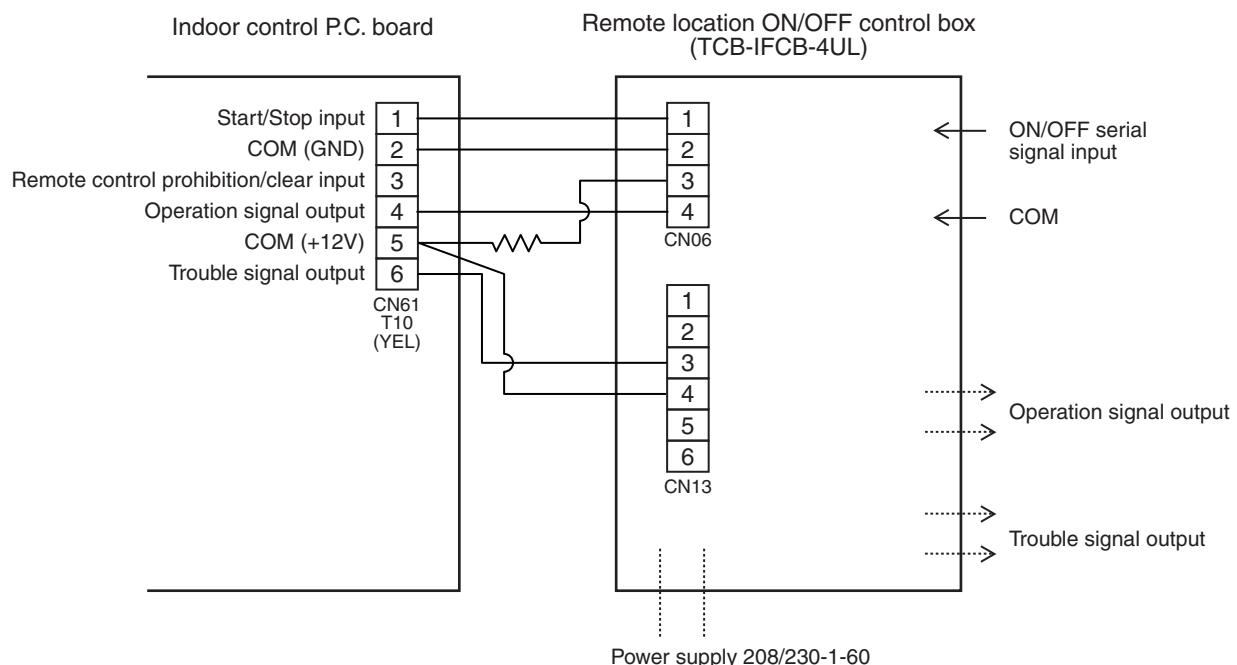
- Use the exclusive connector for connection with the indoor control P.C. board.
- In a group control, the system can operate when connecting with any indoor unit (Control P.C. board) in the group. However when taking out the operation/trouble signal from the other unit, it is necessary to take out from each unit individually.

1. Control items

- 1) Start/Stop input signal : Operation start/stop in unit
- 2) Operation signal : Output during normal operation
- 3) Trouble signal : Output during alarm
(Serial communication trouble or indoor/outdoor protective device) operation

2. Wiring diagram using remote control interface (TCB-IFCB-4UL)

Input IFCB-4UL : No voltage ON/OFF serial signal
Output No voltage contact for operation, check code display
 Contact capacity: Below Max. AC240V 0.5A



■ Ventilating fan control from remote control

[Function]

- The start/stop operation can be operated from the wired remote control when air to air heat exchanger or ventilating fan is installed in the system.
- The fan can be operated even if the indoor unit is not operating.
- Use a fan which can receive the no-voltage A contact as an outside input signal.
- In a group control, the units are collectively operated and they can not be individually operated.

1. Operation

Handle a wired remote control in the following procedure.

- * Use the wired remote control during stop of the system.
- * Be sure to set up the wired remote control to the header unit. (Same in group control)
- * In a group control, if the wired remote control is set up to the header unit, both header and follower units are simultaneously operable.

1 Push concurrently + + buttons for 4 seconds or more.

The unit No. displayed firstly indicates the header indoor unit address in the group control.

In this time, the fan of the selected indoor unit turns on.

2 Every pushing button (button of left side), the indoor unit numbers in group control are displayed successively.

In this time, the fan of the selected indoor unit only turns on.

3 Using the setup temp or button, specify the CODE No. 31 .

4 Using the timer time or button, select the SET DATA. (At shipment: 0000)

The setup data are as follows:

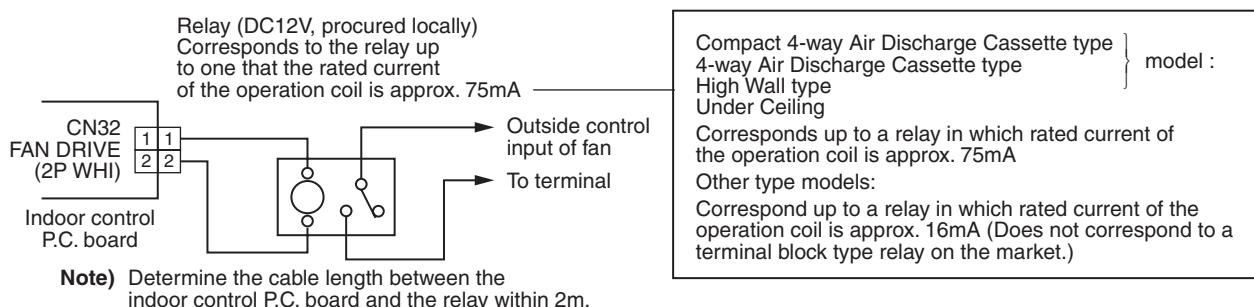
SET DATA	Handling of operation of air to air heat exchanger or ventilating fan
0000	Unavailable (At shipment)
0001	Available

5 Push button. (OK if display goes on.)

- To change the selected indoor unit, go to the procedure 2).
- To change the item to be set up, go to the procedure 3).

6 Pushing returns the status to the usual stop status.

2. Wiring



■ Leaving-ON prevention control

[Function]

- This function controls the indoor units individually. It is connected with cable to the control P.C. board of the indoor unit.
- In a group control, it is connected with cable to the indoor unit (Control P.C. board), and the CODE No. 2E is set to the connected indoor unit.
- It is used when the start operation from outside is unnecessary but the stop operation is necessary.
- Using a card switch box, card lock, etc, the forgotten-OFF of the indoor unit can be protected.
- When inserting a card, start/stop operation from the remote control is allowed.
- When taking out a card, the system stops if the indoor unit is operating and start/stop operation from the remote control is forbidden.

1. Control items

- 1) Outside contact ON : The start/stop operation from the remote control is allowed.
(Status that card is inserted in the card switch box)
- 2) Outside contact OFF : If the indoor unit is operating, it is stopped forcedly.
(Start/Stop prohibited to remote control)
(Status that card is taken out from the card switch box)

* When the card switch box does not perform the above contact operation, convert it using a relay with b contact.

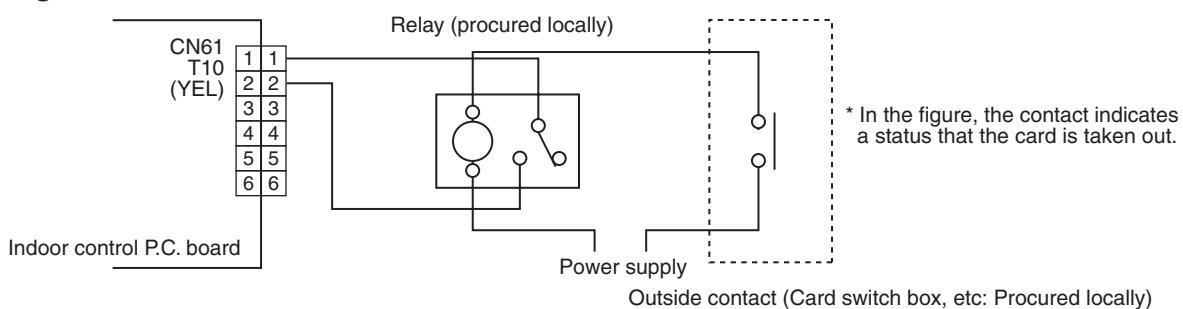
2. Operation

Handle the wired remote control switch in the following procedure.

* Use the wired remote control switch during stop of the system.

- 1 Push concurrently  +  +  buttons for 4 seconds or more.
- 2 Using the setup temp  or  button, specify the CODE No. **2E**.
- 3 Using the timer time  or  button, set **0001** to the setup data.
- 4 Push  button.
- 5 Push  button. (The status returns to the usual stop status.)

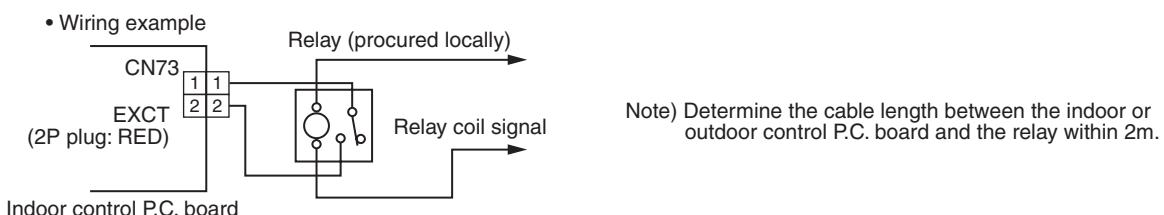
3. Wiring



Note) Determine the cable length between the indoor control P.C. board and the relay within 2m.

■ Power peak-cut from indoor unit

When the relay is turned on, a forced thermostat-OFF operation starts.



■ Address setup (Manual setting from Wired remote control)

In case that addresses of the indoor units will be determined prior to piping work after wiring work

- Set an indoor unit per a remote control.
- Turn on power supply.

1 Push  +  +  buttons simultaneously for 4 seconds or more.

2 (Line address)
Using the temperature setup  /  buttons, set **12** to the CODE No.

3 Using timer time ▼ / ▲ buttons, set the line address

4 Push  button (OK when display goes on)

5 (Indoor unit address)

Using the temperature setup ▼ / ▲ buttons, set **17** to the CODE No.

6 Using timer time (▽) / (△) buttons, set 1 to the line address

7 Push button (OK when display goes on)

8 (Group address)

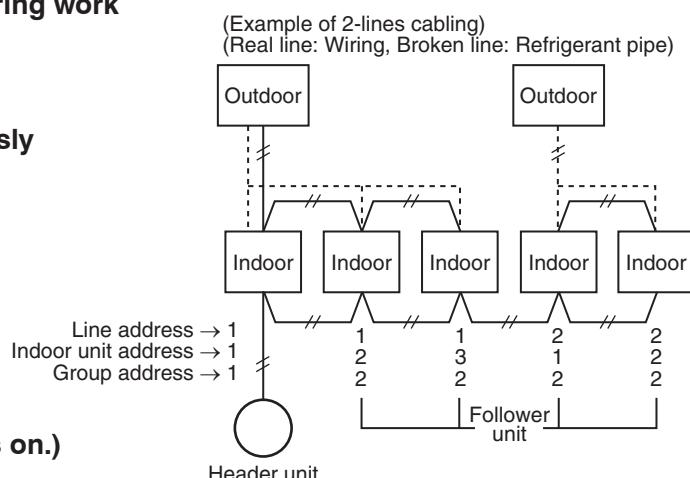
Using the temperature setup / buttons, set **14** to the CODE No.

9 Using timer time  /  buttons, set **0000** to Individual, **0001** to Header unit and **0002** to follower unit.

10 Push  button.
(OK when display goes on)

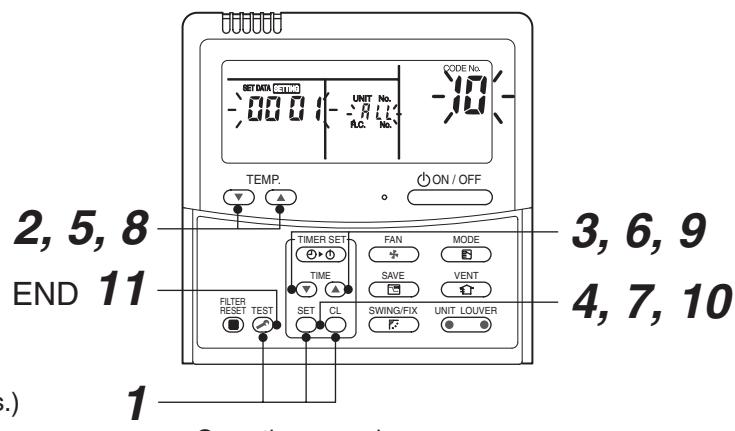
11 Push TEST button

Setup completes.
(The status returns to the usual stop status.)



For the above example, perform setting by connecting singly the wired remote control without remote control inter-unit cable.

Group address
Individual : 0000
Header unit : 0001
Follower unit : 0002 } In case of group control



Note 1)

When setting the line address from the remote control, do not use Address 29 and 30.

As they are addresses which cannot be set to the outdoor unit, if they are set, the check code [E04] (Indoor/Outdoor communication circuit trouble) is issued.

Note 2)

When an address was manually set from the remote control and the central control over the refrigerant lines is carried out, perform the following setting for the Header unit of each line.

- Set the line address for every line using SW13 and 14 on the interface P.C. board of the Header unit in each line.
- Except the least line address No., turn off SW30-2 on the interface P.C. board of the Header units in the lines connected to the identical central control.
(Draw the terminal resistances of indoor/outdoor and central control line wirings together.)
- For each refrigerant line, connect the relay connector between Header unit [U1U2] and [U3U4] terminals.
- After then set the central control address.
(For setting of the central control address, refer to the Installation manual for the central control equipment.)

■ Confirmation of indoor unit No. position

1. To know the indoor unit addresses though position of the indoor unit is recognized

- In case of individual operation (Wired remote control : indoor unit = 1 : 1)
(Follow to the procedure during operation)

<Procedure>

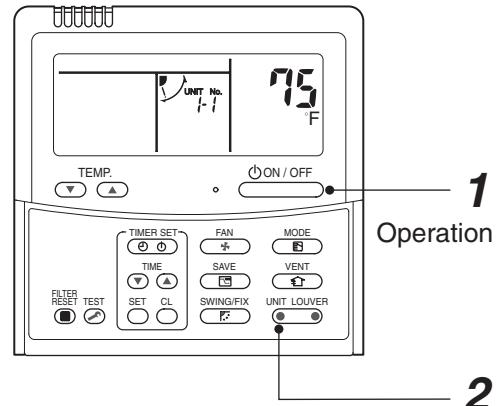
- 1 Push  button if the unit stops.
- 2 Push  button (button of left side).

Unit No. 1-1 is displayed on LCD.

(It disappears after several seconds.)

The displayed unit No. indicate line address and indoor unit address.

(When other indoor units are connected to the identical remote control (Group control unit), other unit numbers are also displayed every pushing  button (button of left side).)



<Operation procedure>

1 → 2 END

2. To know the position of indoor unit by address

- To confirm the unit No. in the group control
(Follow to the procedure during operation) (in this procedure, the indoor units in group control stop.)

<Procedure>

The indoor unit numbers in the group control are successively displayed, and fan, louver, and drain pump of the corresponding indoor unit are turned on.

(Follow to the procedure during operation)

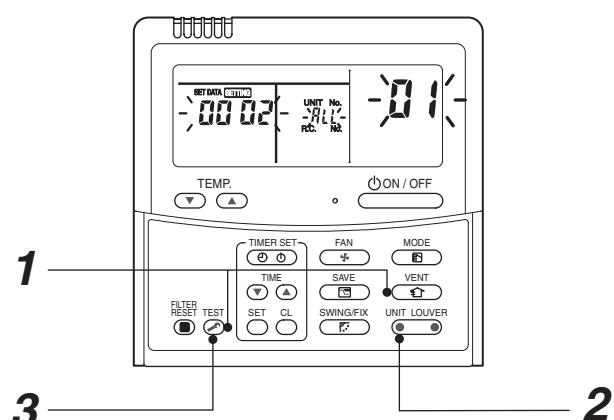
- 1 Push  and  buttons simultaneously for 4 seconds or more.

- Unit No. **ALL** is displayed.
- Fans and louvers of all the indoor units in the group control operate.

- 2 Every pushing  button (button of left side), the unit numbers in the group control are successively displayed.

- The unit No. displayed at the first time indicates the master unit address.
- Fan and louver of the selected indoor unit only operate.

- 3 Push  button to finish the procedure.
All the indoor units in the group control stop.



<Operation procedure>

1 → 2 → 3 END

■ How to check all the unit No. from an arbitrary wired remote control

<Procedure> Carry out this procedure during stop of system.

The indoor unit No. and the position in the identical refrigerant piping can be checked.

An outdoor unit is selected, the identical refrigerant piping and the indoor unit No. are displayed one after the other, and then its fan and louver are on.

1 Push the timer time button  +  simultaneously for 4 seconds or more.

First line 1 and CODE No. **AC** (Address Change) are displayed. (Select outdoor unit.)



2 Select line address using  /  button.



3 Determine the selected line address using  button.

- The address of the indoor unit connected to the refrigerant piping of the selected outdoor unit is displayed and the fan and the louver are on.



4 Every pushing  button (button of left side), the indoor unit No. in the identical piping is displayed one after the other.

- Only fan and louver of the selected indoor unit start operation.

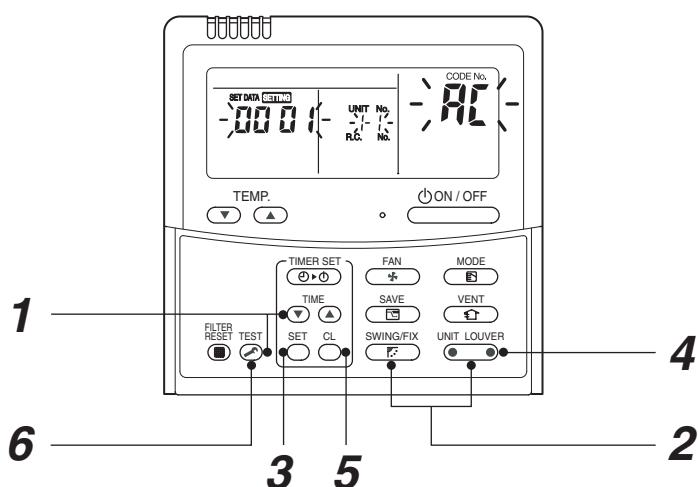
[To select the other line address]

5 Push  button and the operation returns to Procedure 2.

* The indoor address of other line can be continuously checked.



6 Push  button and then the procedure finishes.



<Operation procedure>

1 → 2 → 3 → 4 → 5 → 6 END

■ How to change an indoor unit address by using a wired remote control

Use this method to change the address of indoor units (one to one or group control) that have had the original address set automatically.

This procedure must be done while the units are not operating.

- 1 Simultaneously push and hold the “SET ”, “CL 

- 2 Push  button (button of left side) repeatedly to select an indoor unit address to change. If 2 or more units are controlled in a group the fan and louvers of the selected unit will be energized.



- 3 Push the TEMP.  /  buttons repeatedly to select **13** for CODE No..



- 4 Push the TIME  /  buttons repeatedly to change the value indicated in the SET DATA section.



- 5 Push the “SET ” button, to save address.



- 6 Push  button (button of left side) repeatedly to select another indoor unit addresses to change. Repeat steps 4 through 6 to continue changing indoor unit address and make each of them unique.

- 7 Push  button (button of left side) to review/confirm the revised addresses.



- 8 If the addresses have been changed correctly, push the “TEST 

■ How to change all indoor addresses from an arbitrary wired remote control

(It is possible when setting has finished by automatic addresses.)

Contents: The indoor unit addresses in each identical refrigerant piping line can be changed from an arbitrary wired remote control.

◎ Enter in address check/change mode and then change the address.

<Procedure> Carry out this procedure during stop of system.

- 1 Push the timer time button  +  simultaneously for 4 seconds or more.
First line 1 and CODE No.  (Address Change) are displayed.



- 2 Select line address using  /  button.



- 3 Push the  button.

- The address of the indoor unit connected to the refrigerant piping of the selected outdoor unit is displayed and the fan and the louver are on.

First the current indoor address is displayed.
(Line address is not displayed.)



- 4  button push up/down the indoor address of the SET DATA.

The set data is changed to a new address.



- 5 Push  button to determine the set data.



- 6 Every pushing  button, the indoor unit No. in the identical piping is displayed one after the other.

- Only fan and louver of the selected indoor unit start operation.

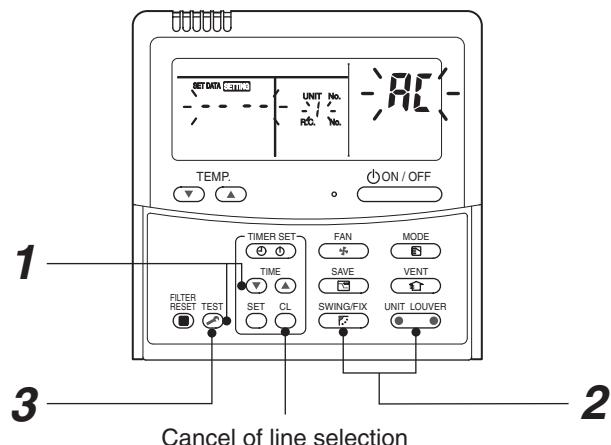
Repeat the Procedures 4 to 6 to change all the indoor addresses so that they are not duplicated.



- 7 Push  button.
(All the indications of LCD go on.)

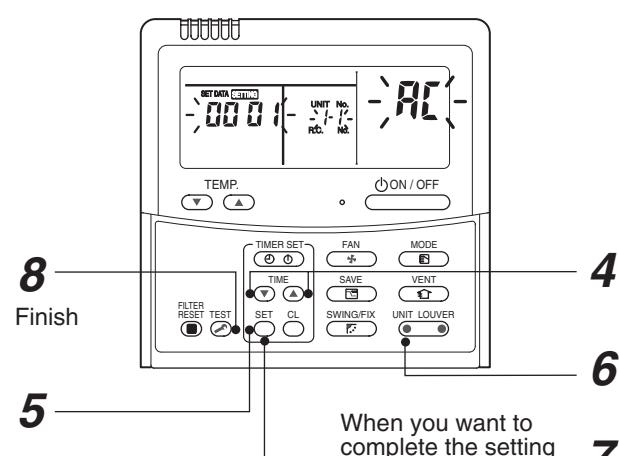


- 8 Push  button and then the procedure finishes.



If the UNIT No. is not call up here, the outdoor unit in that line does not exist.

Push  button to select a line again in the Procedure 2.



<Operation procedure>

1 → 2 → 3 → 4 → 5 →
6 → 7 → 8 END

■ Function to clear trouble

1. Clearing method from remote control

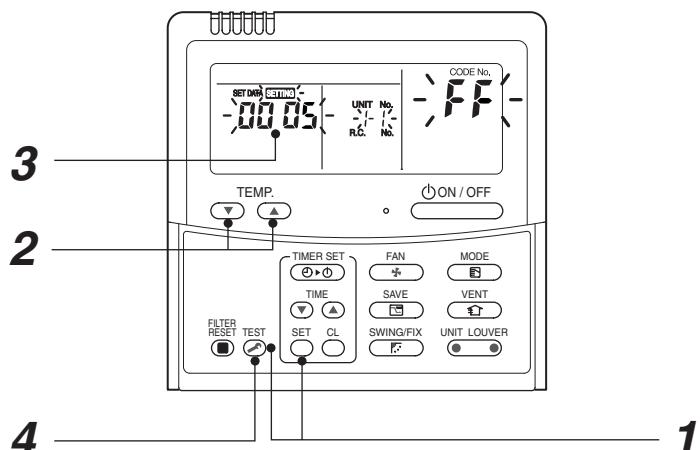
◎ How to clear trouble of outdoor unit

In the unit of refrigerant line connected by indoor unit of the remote control to be operated, the trouble of the outdoor unit currently detected is cleared. (Trouble of the indoor unit is not cleared.)

The service monitor function of the remote control is utilized.

<Method>

- 1 Push CL + TEST buttons simultaneously for 4 seconds or more to change the mode to service monitor mode.
- 2 Push TEMP. button to set the item code to [FF].
- 3 The display of A part in the following figure is counted as “0005” → “0004” → “0003” → “0002” → “0001” → “0000” with 5-seconds interval.
When “0000” appear, the check code was cleared.
* However counting from “0005” is repeated on the display screen.
- 4 When pushing TEST button, the status becomes normal.



<Operation procedure>

1 → 2 → 3 → 4

Returns to normal status

◎ How to clear check code of indoor unit

The check code of indoor unit is cleared by ON/OFF button of the remote control.

(Only check code of the indoor unit connected with remote control to be operated is cleared.)

■ Monitoring function of remote control switch

When using the remote control (Model Name: RBC-AMT32UL), the following monitoring function can be utilized.

Calling of display

<Contents>

The temperature of each sensor of the remote control, indoor unit and outdoor unit and the operating status can be checked by calling the service monitor mode from the remote control.

<Procedure>

- 1 Push  +  buttons simultaneously for 4 seconds or more to call up the service monitor mode.
The service monitor goes on and firstly the temperature of the CODE No. **00** is displayed.



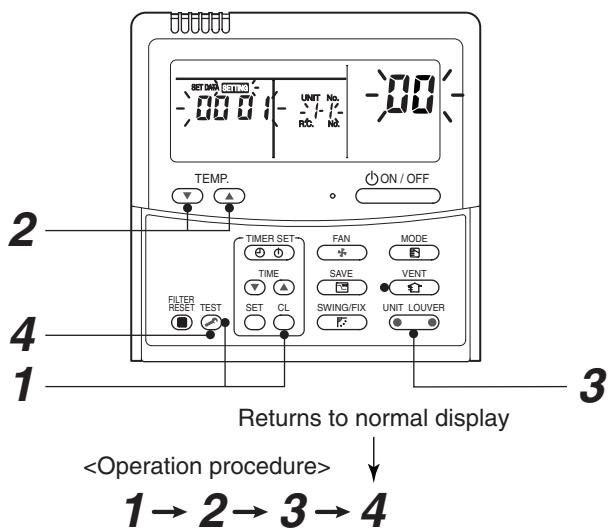
- 2 Push  button to change CODE No.
(CODE No.) to the CODE No. to be monitored.
For display code, refer to the following table.



- 3 Push  button (button of left side) to change to item to be monitored.
The sensor temperature of indoor unit or outdoor unit in its refrigerant line and the operating status are monitored.



- 4 Push  button to return the status to the normal display.



< Based on the SMMS-e >

CODE No.	Data name	Display format	Unit	Remote control display example
Indoor unit data *2	00 Room temperature (Use to control)	x1	°C	[0027] = 27 °F
	01 Room temperature (Remote control)	x1	°C	
	02 Indoor suction air temperature (TA)	x1	°F	
	03 Indoor coil temperature (TCJ)	x1	°F	
	04 Indoor coil temperature (TC2)	x1	°F	[0080] = 80 °F
	05 Indoor coil temperature (TC1)	x1	°F	
	06 Indoor discharge air temperature (TF) *1	x1	°F	
	08 Indoor PMV opening	x1/10	pls	[0150]= 1500 pls
	F3 Filter sign time	x1	h	[2500] = 2500h
	F9 Suction temperature of air to air heat exchanger (TSA) *1	x1	°F	[0080]= 80 °F
System data	FA Outside air temperature (TOA)*1	x1	°F	
	0A No. of connected indoor units	x1	unit	[0048]= 48 units
	0B Total horsepower of connected indoor units	x10	ton	[0215]= 21.5 ton
	0C No. of connected outdoor units	x1	unit	[0003]= 3 units
	0D Total horsepower of outdoor units	x10	ton	[0160]= 16 ton

CODE No.	Data name			Display format	Unit	Remote control display example
U1	U2	U3				
10 20 30	High-pressure sensor detection pressure (Pd)			x10	psi	[4350] = 435 psi
11 21 31	Low-pressure sensor detection pressure (Ps)			x10	psi	
12 22 32	Compressor 1 discharge temperature (TD1)			x1	°F	
13 23 33	Compressor 2 discharge temperature (TD2)			x1	°F	
15 25 35	Outdoor coil temperature (TE1)			x1	°F	
16 26 36	Outdoor coil temperature (TE2)			x1	°F	
17 27 37	Outdoor coil temperature (TG1)			x1	°F	
18 28 38	Outdoor coil temperature (TG2)			x1	°F	
19 29 39	Outside ambient temperature (TO)			x1	°F	[0080]= 80 °F
1A 2A 3A	Suction temperature (TS1)			x1	°F	
1C 2C 3C	Suction temperature (TS3)			x1	°F	
1D 2D 3D	Temperature at liquid side (TL1)			x1	°F	
1E 2E 3E	Temperature at liquid side (TL2)			x1	°F	
1F 2F 3F	Temperature at liquid side (TL3)			x1	°F	

CODE No.	Data name			Display format	Unit	Remote control display example
U1	U2	U3				
50 60 70	PMV1 opening			x1	pls	
51 61 71	PMV3 opening			x1	pls	[0500] = 500pls
52 62 72	PMV4 opening			x1	pls	
53 63 73	1 fan model : Compressor 1 current (I1) 2 fan model : Compressor 1 and Outdoor fan 1 current (I1)			x10	A	
54 64 74	1 fan model : Compressor 2 and Outdoor fan 1 current (I2) 2 fan model : Compressor 2 and Outdoor fan 2 current (I2)			x10	A	[0135] = 13.5A
56 66 76	Compressor 1 revolutions			x10	rps	[0642] = 64.2rps
57 67 77	Compressor 2 revolutions			x10	rps	
59 69 79	Outdoor fan mode			x1	mode	[0058] = 58 mode
5A 6A 7A	Compressor IPDU 1 heat sink temperature			x1	°F	
5B 6B 7B	Compressor IPDU 2 heat sink temperature			x1	°F	
5D 6D 7D	Outdoor fan IPDU 1 heat sink temperature			x1	°F	[0024] = 24 °F
5E 6E 7E	Outdoor fan IPDU 2 heat sink temperature			x1	°F	
5F 6F 7F	Outdoor unit horsepower			x10	ton	[0080] = 8 ton

CODE No.	Data name	Display format	Unit	Remote control display example
90	Heating/cooling recovery controlled	0: Normal		[0010]=Heating recovery controlled
91	Pressure release	0: Normal		[0010]=Pressure release controlled
92	Discharge temperature release	1: Release controlled		[0001]=Discharge temperature release controlled
93	Follower unit release (U2/U3 outdoor units)			[0100]=U2 outdoor unit release controlled

*1 Only a part of indoor unit types is installed with the discharge air temperature sensor. This temperature is not displayed for other types.

*2 When the units are connected to a group, data of the header indoor unit only can be displayed.

*3 The first digit of an CODE No. indicates the outdoor unit number.

*4 The upper digit of an CODE No. -4 indicates the outdoor unit number.

1*, 5* ... U1 outdoor unit (Header unit)

2*, 6* ... U2 outdoor unit (Follower unit 1)

3*, 7* ... U3 outdoor unit (Follower unit 2)

5 Only the CODE No. 9 of U1 outdoor unit (Header unit) is displayed.

■ LED display on P.C. board (MCC-1570, 4-Way Cassette Type only)

1. D501 (Red)

- D501 goes on at the same time when the power supply is turned on.
(Goes on with operation of the main microprocessor)
- D501 flashes with 1-second interval (every 0.5 second) : When there is no EEPROM or write-in trouble
- D501 flashes with 10-seconds interval (every 5 second) : In DISP mode
- D501 flashes with 2-seconds interval (every 1 second) : During setting of function exchange
(EEPROM)

2. D403 (Red)

- D403 goes on when power is supplied to the remote control. (ON in hardware)

3. D503 (Yellow): Indoor/Outdoor central control

- D503 goes on for 5 seconds at the first half during communication with the central control.
- D503 flashes for 5 seconds with 0.2-second interval at the latter half during communication with outdoor unit. (Goes on for 0.1 second, goes off for 0.1 second)

4. D504 (Green): Remote control communication

- D504 goes on for 5 seconds at the first half during communication with remote control.
(Header unit of group)
- In the group indoor unit, D504 flashes for 5 seconds with 0.2-second interval at the latter half during communication between header and follower unit. (Goes on for 0.1 second, goes off for 0.1 second)

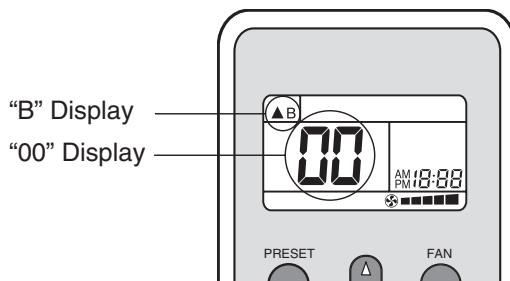
■ High wall type wireless remote control A-B selection>

Using 2 wireless remote controls for the respective air conditioners, when the 2 air conditioners are closely installed.

Wireless remote control B setup

1. Push  button on the indoor unit to turn the air conditioner ON.
2. Point the wireless remote control at the indoor unit.
3. Push and hold  button on the wireless remote control by the tip of the pencil.
“00” will be shown on the display.
4. Push  during pushing .

“B” will be shown on the display and “00” will be disappear and the air conditioner will turn OFF.
The wireless remote control B is memorized.



NOTE

- Repeat above step to reset wireless remote control to be A.
- The wireless remote controls do not display “A”.
- The factory default of the wireless remote controls is “A”.

■ Changing of settings for Celsius display

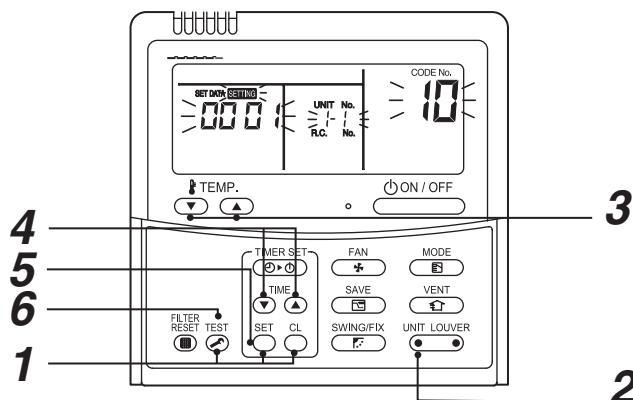
- Push  button if the unit stops.

Procedure 1

Push simultaneously  +  +  buttons for 4 seconds or more.

After a while, the display part flashes as shown right. Check the displayed CODE No. is [10].

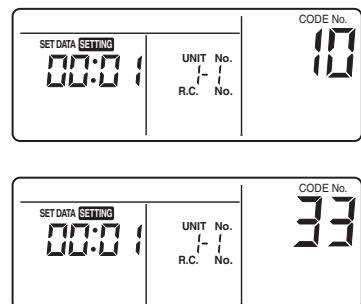
- When the CODE No. is other than [10], push  button to erase the display and repeat procedure from the first step. (After pushing  button, operation of the remote control is not accepted for approx. 1 minute.)
(For a group control, No. of the firstly displayed indoor unit becomes the header unit.)



Procedure 2

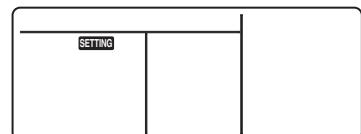
Every pushing  UNIT button (button of left side), the indoor unit No. in the group control is displayed in order. Select the indoor unit of which setup is changed.

In this time, the position of the indoor unit of which setup is changed can be confirmed because fan and louver of the selected indoor unit operate.



Procedure 3

- Using temp. setup  buttons, specify CODE No. [33].
(CODE No. [33]: Fahrenheit display)
- Using timer  buttons, change the line address from [0001] to [0000.]
- Push  button. In this time, the setup finishes when the display changes from flashing to lighting.



Procedure 4

After check of the changed contents, push  button. (Setup is determined.)

When pushing  button, the display disappears and the status becomes the usual stop status.

(When pushing  button the operation from the remote control is not accepted for approx. 1 minute.)

- If the operation from the remote control is not accepted even 1 minute or more passed after pushing  button, it is considered that the address setup is incorrect. In this case, the automatic address must be again set up.

When changing the settings from Celsius to Fahrenheit indication, follow to the reverse order of the above procedure.

8. TROUBLESHOOTING

8-1. Overview

(1) Before engaging in troubleshooting

(a) Applicable models

All Super Module Multi (SMMS-i, SMMS-e, SHRM-e) models.
(Indoor units: MM*-AP***, Outdoor units: MMY-MAP***)

(b) Tools and measuring devices required

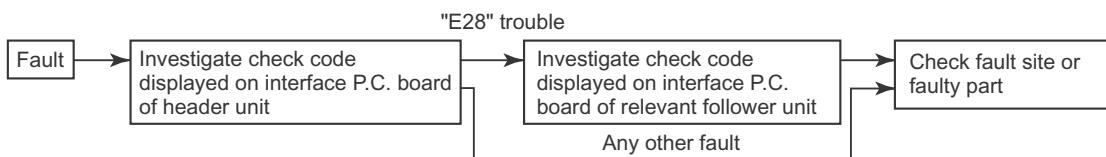
- Screwdrivers (Philips, flat head), spanners, long-nose pliers, nipper, pin to push reset switch, etc.
- Multimeter, thermometer, pressure gauge, etc.

(c) Things to check prior to troubleshooting (behaviors listed below are normal)

NO.	Behavior	Possible cause
1	A compressor would not start	<ul style="list-style-type: none">• Could it just be the 3-minute delay period (3 minutes after compressor shutdown)?• Could it just be the air conditioner having gone thermostat OFF?• Could it just be the air conditioner operating in fan mode or put on the timer?• Could it just be the system going through initial communication?
2	An indoor fan would not start	<ul style="list-style-type: none">• Could it just be cold air discharge prevention control, which is part of heating?
3	An outdoor fan would not start or would change speed for no reason	<ul style="list-style-type: none">• Could it just be cooling operation under low outside temperature conditions?• Could it just be defrosting operation?
4	An indoor fan would not stop	<ul style="list-style-type: none">• Could it just be the elimination of residual heat being performed as part of the air conditioner shutdown process after heating operation?
5	The air conditioner would not respond to a start/stop command from a remote control	<ul style="list-style-type: none">• Could it just be the air conditioner operation under external or remote control?

(2) Troubleshooting procedure

When a fault occurs, proceed with troubleshooting in accordance with the procedure shown below.



NOTE

Rather than a genuine fault (see the List of Check Codes below), the problem could have been caused by a microprocessor malfunction attributable to a poor quality of the power source or an external noise. Check for possible noise sources, and shield the remote control wiring and signal wires as necessary.

8-2. Troubleshooting Method

The remote controls (main remote control and central control remote control) and the interface P.C. board of an outdoor unit are provided with an LCD display (remote control) or a 7-segment display (outdoor interface P.C. board) to display operational status. Using this self-diagnosis feature, the problem site/problem part may be identified in the event of a problem by following the method described below.

The list below summarizes check codes detected by various devices. Analyze the check code according to where it is displayed and work out the nature of the problem in consultation with the list.

- When investigating a problem on the basis of a display provided on the indoor remote control or TCC-LINK central control remote control - See the "TCC-LINK remote control or main remote control display" section of the list.
- When investigating a problem on the basis of a display provided on an outdoor unit - See the "Outdoor 7-segment display" section of the list.
- When investigating a problem on the basis of a wireless remote control-controlled indoor unit - See the "Light sensor indicator light block" section of the list.

List of Check Codes (Indoor Unit)

(Check code detected by indoor unit)

IPDU: Intelligent Power Drive Unit (Inverter P.C. board)

○ : Lighting, ◎ : Flashing, ● : Goes off

ALT.: Flashing is alternately when there are two flashing LED

SIM: Simultaneous flashing when there are two flashing LED

TCC-LINK central control or main remote control display	Check code		Display of receiving unit		Typical problem site	Description of Check code	
	Outdoor 7-segment display	Sub-code	Operation	Timer	Ready		
			○	○	○	Flash	
E03	—	—	◎	●	●	Indoor-remote control periodic communication trouble	
E04	—	—	●	●	◎	Indoor-outdoor periodic communication trouble	
E08	E08	Duplicated indoor address	◎	●	●	Duplicated indoor address	
E10	—	—	◎	●	●	Indoor inter-MCU communication trouble	
E18	—	—	◎	●	●	Trouble in periodic communication between indoor header and follower unit	
F01	—	—	◎	◎	●	ALT	Indoor heat exchanger temperature sensor (TCJ) trouble
F02	—	—	◎	◎	●	ALT	Indoor heat exchanger temperature sensor (TC2) trouble
F03	—	—	◎	◎	●	ALT	Indoor heat exchanger temperature sensor (TC1) trouble
F10	—	—	◎	◎	●	ALT	Room air temperature sensor (TA/TSA) trouble
F11	—	—	◎	◎	●	ALT	Discharge air temperature sensor (TF/TFA) trouble
F17	—	—	◎	◎	○	ALT	Outside air suction temperature sensor (TOA) trouble
F18	—	—	◎	◎	○	ALT	Indoor air suction temperature sensor (TRA) trouble
F29	—	—	◎	◎	●	SIM	P.C. board or other indoor trouble
L03	—	—	◎	●	◎	SIM	Duplicated indoor group header unit
L07	—	—	◎	●	◎	SIM	Connection of group control cable to stand-alone indoor unit
L08	L08	—	◎	●	◎	SIM	Indoor group address not set
L09	—	—	◎	●	◎	SIM	Indoor capacity not set
L20	—	—	◎	○	○	SIM	Duplicated central control address
L30	L30	Detected indoor unit No.	◎	○	○	SIM	Indoor external trouble input (interlock)
P01	—	—	●	◎	◎	ALT	Indoor AC fan trouble
P10	P10	Detected indoor unit No.	●	◎	◎	ALT	Indoor overflow trouble
P12	—	—	●	◎	◎	ALT	Indoor DC fan trouble (e.g. over current or lock-up) is detected.
P31	—	—	◎	●	◎	ALT	Other indoor unit trouble
							Follower unit cannot be operated due to header unit alarm (E03/L03/L07/L08).

(Trouble detected by main remote control)

Check code			Display of receiving unit				Typical fault site	Description of trouble		
Main remote control	Outdoor 7-segment display		Indicator light block							
	Sub-code	Operation	Timer	Ready	Flash					
E01	–	–	◎	●	●		No master remote control, faulty remote control communication (reception)	Signals cannot be received from indoor unit; master remote control has not been set (including two remote control).		
E02	–	–	◎	●	●		Faulty remote control communication (transmission)	Signals cannot be transmitted to indoor unit.		
E09	–	–	◎	●	●		Duplicated master remote control	Both remote controls have been set as master remote control in two remote control (alarm and shutdown for header unit and continued operation for follower unit)		

(Trouble detected by central control device)

Check code			Display of receiving unit				Typical fault site	Description of trouble		
TCC-LINK central control	Outdoor 7-segment display		Indicator light block							
	Sub-code	Operation	Timer	Ready	Flash					
C05	–	–	No indication (when main remote control also in use)			Faulty central control communication (transmission)	Faulty central control communication (transmission)	Central control device is unable to transmit signal due to duplication of central control device		
C06	–	–				Faulty central control communication (reception)	Faulty central control communication (reception)	Central control device is unable to receive signal.		
–	–	–				Multiple network adapters	Multiple network adapters	Multiple network adapters are connected to remote control communication line.		
C12	–	–	–	–	–	Blanket alarm for general-purpose device control interface	Blanket alarm for general-purpose device control interface	Device connected to general-purpose device control interface for TCC-LINK is faulty.		
P30	–	–	As per alarm unit (see above)	–	–	Group control follower unit trouble	Group control follower unit trouble	Group follower unit is faulty (unit No. and above detail [] displayed on main remote control)		

Note: The same trouble, e.g. a communication trouble, may result in the display of different check codes depending on the device that detects it.

Moreover, check codes detected by the main remote control/central control device do not necessarily have a direct impact on air conditioner operation.

List of Check Codes (Outdoor Unit)

(Check code detected by SMMS-e outdoor interface - typical examples)

If "HELLO" is displayed on the outdoor 7-segment for 1 minute or more, turn off the power supply once and then turn on the power supply again after passage of 30 seconds or more. When the same symptom appears, it is considered there is a possibility of I/F board trouble.

IPDU: Intelligent Power Drive Unit (Inverter P.C. board)
 ○: Lighting, ◎: Flashing, ●: Goes off
 ALT.: Flashing is alternately when there are two flashing LED
 SIM: Simultaneous flashing when there are two flashing LED

Check code			Display of receiving unit				Typical problem site	Description of problem																																																																															
Outdoor 7-segment display			TCC-LINK central control or main remote control display	Indicator light block																																																																																			
	Sub-code			Operation	Timer	Ready	Flash																																																																																
E06	Number of indoor units from which signal is received normally		E06	●	●	◎		Signal lack of indoor unit Indoor unit initially communicating normally fails to return signal (reduction in number of indoor units connected).																																																																															
E07	-		(E04)	●	●	◎		Indoor-outdoor communication circuit trouble Signal cannot be transmitted to indoor units (→ indoor units left without communication from outdoor unit).																																																																															
E08	Duplicated indoor address		(E08)	◎	●	●		Duplicated indoor address More than one indoor unit are assigned same address (also detected at indoor unit end).																																																																															
E12	01: Indoor-outdoor communication 02: Outdoor-outdoor communication		E12	◎	●	●	Automatic address starting trouble	Indoor automatic address setting is started while automatic address setting for equipment in other refrigerant line is in progress. Outdoor automatic address setting is started while automatic address setting for indoor units is in progress.																																																																															
E15	-		E15	●	●	◎	Indoor unit not found during automatic address setting	Indoor unit fails to communicate while automatic address setting for indoor units is in progress.																																																																															
E16	00: Overloading 01: Number of units connected		E16	●	●	◎	Too many indoor units connected/overloading	Combined capacity of indoor units is too large (more than 135% of combined capacity of outdoor units).																																																																															
E19	00: No header unit 02: Two or more header units		E19	●	●	◎	Trouble in number of outdoor header units	There is no or more than one outdoor header unit in one refrigerant line.																																																																															
E20	01: Connection of outdoor unit from other refrigerant line 02: Connection of indoor unit from other refrigerant line		E20	●	●	◎	Connection to other refrigerant line found during automatic address setting	Indoor unit from other refrigerant line is detected while indoor automatic address setting is in progress.																																																																															
E23	-		E23	●	●	◎	Outdoor-outdoor communication transmission trouble	Signal cannot be transmitted to other outdoor units.																																																																															
E25	-		E25	●	●	◎	Duplicated follower outdoor address	There is duplication in outdoor addresses set manually.																																																																															
E26	Address of outdoor unit from which signal is not received normally		E26	●	●	◎	Signal lack of outdoor unit	Follower outdoor unit initially communicating normally fails to do so (reduction in number of follower outdoor units connected).																																																																															
E28	Detected outdoor unit No.		E28	●	●	◎	Outdoor follower unit trouble	Outdoor header unit detects fault relating to follower outdoor unit (detail displayed on follower outdoor unit).																																																																															
E31	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <th colspan="2">A3-IPDU</th> <th colspan="2">Fan-IPDU</th> <th colspan="2">A3-IPDU</th> <th colspan="2">Fan-IPDU</th> </tr> <tr> <td>1</td><td>2</td> <td>1</td><td>2</td> <td>1</td><td>2</td> <td>1</td><td>2</td> </tr> <tr> <td>01</td><td>○</td> <td></td><td></td> <td>10</td><td></td> <td></td><td>○</td> </tr> <tr> <td>02</td><td>○</td> <td></td><td></td> <td>11</td><td>○</td> <td></td><td>○</td> </tr> <tr> <td>03</td><td>○</td> <td>○</td> <td></td> <td>12</td><td>○</td> <td>○</td> <td>○</td> </tr> <tr> <td>08</td><td>○</td> <td></td> <td></td> <td>13</td><td>○</td> <td>○</td> <td>○</td> </tr> <tr> <td>09</td><td>○</td> <td>○</td> <td></td> <td>18</td><td></td> <td>○</td> <td>○</td> </tr> <tr> <td>0A</td><td>○</td> <td>○</td> <td>○</td> <td>19</td><td>○</td> <td>○</td> <td>○</td> </tr> <tr> <td>0B</td><td>○</td> <td>○</td> <td>○</td> <td>1A</td><td>○</td> <td>○</td> <td>○</td> </tr> <tr> <td></td><td></td> <td></td> <td></td> <td>1B</td><td>○</td> <td>○</td> <td>○</td> </tr> </table> <small>Circle (○): IPDU trouble 80 : Communication trouble between MCU and Sub MCU</small>		A3-IPDU		Fan-IPDU		A3-IPDU		Fan-IPDU		1	2	1	2	1	2	1	2	01	○			10			○	02	○			11	○		○	03	○	○		12	○	○	○	08	○			13	○	○	○	09	○	○		18		○	○	0A	○	○	○	19	○	○	○	0B	○	○	○	1A	○	○	○					1B	○	○	○	●	●	◎	IPDU communication trouble Sub MCU communication trouble	There is no communication between IPDUs (P.C. boards) in inverter box.
A3-IPDU		Fan-IPDU		A3-IPDU		Fan-IPDU																																																																																	
1	2	1	2	1	2	1	2																																																																																
01	○			10			○																																																																																
02	○			11	○		○																																																																																
03	○	○		12	○	○	○																																																																																
08	○			13	○	○	○																																																																																
09	○	○		18		○	○																																																																																
0A	○	○	○	19	○	○	○																																																																																
0B	○	○	○	1A	○	○	○																																																																																
				1B	○	○	○																																																																																
F04	-		F04	◎	◎	○	ALT	Outdoor discharge temperature sensor (TD1) trouble Outdoor discharge temperature sensor (TD1) has been open/short-circuited.																																																																															
F05	-		F05	◎	◎	○	ALT	Outdoor discharge temperature sensor (TD2) trouble Outdoor discharge temperature sensor (TD2) has been open/short-circuited.																																																																															
F06	01: TE1 02: TE2		F06	◎	◎	○	ALT	Outdoor heat exchanger liquid side temperature sensor (TE1, TE2) trouble Outdoor heat exchanger liquid side temperature sensors (TE1, TE2) have been open/short-circuited.																																																																															
F07	01: TL1 02: TL2 03: TL3		F07	◎	◎	○	ALT	Outdoor liquid temperature sensor (TL1, TL2, TL3) trouble Outdoor liquid temperature sensor (TL1, TL2, TL3) has been open/short-circuited.																																																																															
F08	-		F08	◎	◎	○	ALT	Outdoor outside air temperature sensor (TO) trouble Outdoor outside air temperature sensor (TO) has been open/short-circuited.																																																																															

Check code		Display of receiving unit				Typical problem site	Description of problem		
Outdoor 7-segment display		Indicator light block							
	Sub-code	Operation	Timer	Ready	Flash				
F09	01: TG1 02: TG2					Outdoor heat exchanger gas side temperature sensor (TG1, TG2) trouble	Outdoor heat exchanger gas side temperature sensors (TG1, TG2) have been open/short circuited.		
F12	01: TS1 03: TS3	F12	◎	◎	○	ALT	Outdoor suction temperature sensor (TS1, TS3) trouble	Outdoor suction temperature sensor (TS1, TS3) has been open/short-circuited.	
F15	–	F15	◎	◎	○	ALT	Outdoor temperature sensor (TE1, TL1) wiring trouble	Wiring trouble in outdoor temperature sensors (TE1, TL1) has been detected.	
F16	–	F16	◎	◎	○	ALT	Outdoor pressure sensor (Pd, Ps) wiring trouble	Wiring trouble in outdoor pressure sensors (Pd, Ps) has been detected.	
F23	–	F23	◎	◎	○	ALT	Low pressure sensor (Ps) trouble	Output voltage of low pressure sensor (Ps) is zero.	
F24	–	F24	◎	◎	○	ALT	High pressure sensor (Pd) trouble	Output voltage of high pressure sensor (Pd) is zero or provides abnormal readings when compressors have been turned off.	
F31	–	F31	◎	◎	○	SIM	Outdoor EEPROM trouble	Outdoor EEPROM is faulty (alarm and shutdown for header unit and continued operation for follower unit)	
H05	–	H05	●	◎	●		Outdoor discharge temperature sensor (TD1) wiring trouble	Wiring/installation trouble or detachment of outdoor discharge temperature sensor (TD1) has been detected	
H06	–	H06	●	◎	●		Activation of low-pressure protection	Low pressure (Ps) sensor detects abnormally low operating pressure.	
H07	–	H07	●	◎	●		Low oil level protection	Temperature sensor for oil level detection (TK1, TK2, TK4, TK5) detects abnormally low oil level.	
H08	01: TK1 sensor trouble 02: TK2 sensor trouble 04: TK4 sensor trouble 05: TK5 sensor trouble	H08	●	◎	●		Trouble in temperature sensor for oil level detection (TK1, TK2, TK4, TK5)	Temperature sensor for oil level detection (TK1, TK2, TK4, TK5) has been open/short-circuited.	
H15	–	H15	●	◎	●		Outdoor discharge temperature sensor (TD2) wiring trouble	Wiring/installation trouble or detachment of outdoor discharge temperature sensor (TD2) has been detected.	
H16	01: TK1 oil circuit trouble 02: TK2 oil circuit trouble 04: TK4 oil circuit trouble 05: TK5 oil circuit trouble	H16	●	◎	●		Oil level detection circuit trouble	No temperature change is detected by temperature sensor for oil level detection (TK1, TK2, TK4, TK5) despite compressor having been started.	
L04	–	L04	◎	○	○	SIM	Duplicated outdoor refrigerant line address	Identical refrigerant line address has been assigned to outdoor units belonging to different refrigerant piping systems.	
L06	Number of priority indoor units (check code L05 or L06 depending on individual unit)	L05	◎	●	○	SIM	Duplicated priority indoor unit (as displayed on priority indoor unit)	More than one indoor unit have been set up as priority indoor unit.	
		L06	◎	●	○	SIM	Duplicated priority indoor unit (as displayed on indoor unit other than priority indoor unit)	More than one indoor unit have been set up as priority indoor unit.	
L08	–	(L08)	◎	●	○	SIM	Indoor group address not set	Address setting have not been performed for one or more indoor units (also detected at indoor end).	
L10	–	L10	◎	○	○	SIM	Outdoor capacity not set	Outdoor unit capacity has not been set (after P.C. board replacement).	
L17	–	L17	◎	○	○	SIM	Outdoor model incompatibility trouble	Old model outdoor unit (prior to 6 series) has been connected.	
L23	–	L23	◎	○	○	SIM	SW setting mistake	Bit 3 and 4 of SW17 are turning on.	
L28	–	L28	◎	○	○	SIM	Too many outdoor units connected	More than three outdoor units have been connected.	

Check code						TCC-LINK central control or main remote control display	Display of receiving unit			Typical problem site	Description of problem																																																																																																																						
Outdoor 7-segment display							Indicator light block																																																																																																																										
	Sub-code						Operation	Timer	Ready	Flash																																																																																																																							
L29		<table border="1"> <tr> <th></th><th colspan="2">A3-IPDU</th><th colspan="2">Fan-IPDU</th><th></th><th colspan="2">A3-IPDU</th><th colspan="2">Fan-IPDU</th><th></th><th></th></tr> <tr> <th></th><th>1</th><th>2</th><th>1</th><th>2</th><th></th><th>1</th><th>2</th><th>1</th><th>2</th><th></th><th></th></tr> <tr> <td>01</td><td>O</td><td></td><td></td><td></td><td></td><td>10</td><td></td><td></td><td></td><td>O</td><td></td></tr> <tr> <td>02</td><td></td><td>O</td><td></td><td></td><td></td><td>11</td><td>O</td><td></td><td></td><td>O</td><td></td></tr> <tr> <td>03</td><td>O</td><td>O</td><td></td><td></td><td></td><td>12</td><td></td><td>O</td><td></td><td>O</td><td></td></tr> <tr> <td>08</td><td></td><td></td><td>O</td><td></td><td></td><td>13</td><td>O</td><td>O</td><td></td><td>O</td><td></td></tr> <tr> <td>09</td><td>O</td><td>O</td><td>O</td><td></td><td></td><td>18</td><td></td><td></td><td>O</td><td>O</td><td></td></tr> <tr> <td>0A</td><td>O</td><td>O</td><td>O</td><td></td><td></td><td>19</td><td>O</td><td></td><td>O</td><td>O</td><td></td></tr> <tr> <td>0B</td><td>O</td><td>O</td><td>O</td><td></td><td></td><td>1A</td><td></td><td>O</td><td>O</td><td>O</td><td></td></tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td>1B</td><td>O</td><td>O</td><td>O</td><td>O</td><td></td></tr> </table> <p>Circle (O): IPDU trouble</p>		A3-IPDU		Fan-IPDU			A3-IPDU		Fan-IPDU					1	2	1	2		1	2	1	2			01	O					10				O		02		O				11	O			O		03	O	O				12		O		O		08			O			13	O	O		O		09	O	O	O			18			O	O		0A	O	O	O			19	O		O	O		0B	O	O	O			1A		O	O	O								1B	O	O	O	O		L29	◎	○	◎	SIM	Trouble in number IPDUs	There are insufficient number of IPDUs (P.C. boards) in inverter box.
	A3-IPDU		Fan-IPDU			A3-IPDU		Fan-IPDU																																																																																																																									
	1	2	1	2		1	2	1	2																																																																																																																								
01	O					10				O																																																																																																																							
02		O				11	O			O																																																																																																																							
03	O	O				12		O		O																																																																																																																							
08			O			13	O	O		O																																																																																																																							
09	O	O	O			18			O	O																																																																																																																							
0A	O	O	O			19	O		O	O																																																																																																																							
0B	O	O	O			1A		O	O	O																																																																																																																							
						1B	O	O	O	O																																																																																																																							
L30	Detected indoor unit No.	(L30)	◎	○	◎	SIM	Indoor external trouble input (interlock)	Indoor unit has been shut down for external trouble input in one refrigerant line (detected by indoor unit).																																																																																																																									
P03	–	P03	◎	●	◎	ALT	Outdoor discharge (TD1) temperature trouble	Outdoor discharge temperature sensor (TD1) has detected abnormally high temperature.																																																																																																																									
P05	00: Open phase detected	P05	◎	●	◎	ALT	Open phase/power failure	Open phase is detected when power is turned on. Inverter DC voltage is too high (overvoltage) or too low (undervoltage).																																																																																																																									
	01: Compressor 1 02: Compressor 2						Inverter DC voltage (Vdc) trouble MG-CTT trouble																																																																																																																										
P07	01: Compressor 1 02: Compressor 2	P07	◎	●	◎	ALT	Heat sink overheating trouble	Temperature sensor built into IPM (TH) detects overheating.																																																																																																																									
P10	Indoor unit No. detected	(P10)	●	◎	◎	ALT	Indoor unit overflow	Indoor unit has been shutdown in one refrigerant line due to detection of overflow (detected by indoor unit).																																																																																																																									
P13	–	P13	●	◎	◎	ALT	Outdoor liquid backflow detection trouble	State of refrigerant cycle circuit indicates liquid backflow operation.																																																																																																																									
P15	01: TS condition 02: TD condition	P15	◎	●	◎	ALT	Gas leak detection	Outdoor suction temperature sensor (TS1) detects sustained and repeated high temperatures that exceed standard value.																																																																																																																									
P17	–	P17	◎	●	◎	ALT	Outdoor discharge (TD2) temperature trouble	Outdoor discharge temperature sensor (TD2) detects abnormally high temperature.																																																																																																																									
P19	Outdoor unit No. detected	P19	◎	●	◎	ALT	4-way valve reversing trouble	Abnormality in refrigerating cycle is detected during heating operation.																																																																																																																									
P20	–	P20	◎	●	◎	ALT	Activation of high-pressure protection	High pressure (Pd) sensor detects high pressure that exceeds standard value.																																																																																																																									

MG-CTT: Magnet contactor

(Check code detected by IPDU featuring in SMMS-e standard outdoor unit - typical examples)

Check code		Display of receiving unit				Typical problem site	Description of problem
Outdoor 7-segment display		TCC-LINK central control or main remote control display	Indicator light block				
	Sub-code		Operation	Timer	Ready	Flash	
F13	01: Compressor 1 02: Compressor 2	F13	○	○	○	ALT	Trouble in temperature sensor built into indoor IPM (TH) has been open/short-circuited.
H01	01: Compressor 1 02: Compressor 2	H01	●	○	●		Compressor breakdown Inverter current (Idc) detection circuit detects overcurrent.
H02	01: Compressor 1 02: Compressor 2	H02	●	○	●		Compressor trouble (lockup) Compressor lockup is detected
H03	01: Compressor 1 02: Compressor 2	H03	●	○	●		Current detection circuit trouble Abnormal current is detected while inverter compressor is turned off.
P04	01: Compressor 1 02: Compressor 2	P04	○	●	○	ALT	Activation of high-pressure SW High-pressure SW is activated.
P07	01: Compressor 1 02: Compressor 2	P07	○	●	○	ALT	Heat sink overheating trouble Temperature sensor built into IPM (TH) detects overheating or has been short-circuited.
P22	#0:Element short circuit #1:Position detection circuit trouble #3:Motor lock trouble #4:Motor current trouble #C:TH Sensor temperature trouble #D:TH Sensor short circuit/release trouble #E:Vdc voltage trouble *Put in Fan IPDU No. in [#] mark	P22	○	●	○	ALT	Outdoor fan IPDU trouble Outdoor fan IPDU detects trouble.
P26	01: Compressor 1 02: Compressor 2	P26	○	●	○	ALT	Activation of IPM short-circuit protection Short-circuit protection for compressor motor driver circuit components is activated (momentary overcurrent).
P29	01: Compressor 1 02: Compressor 2	P29	○	●	○	ALT	Compressor position detection circuit trouble Compressor motor position detection trouble is detected.

Note: The above check codes are examples only, and different check codes may be displayed depending on the outdoor unit configuration

8-3. Troubleshooting Based on Information Displayed on Remote Control

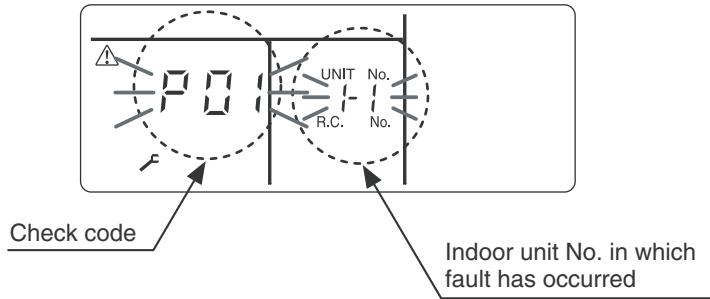
Using main remote control (RBC-AMT32UL)

(1) Checking and testing

When a fault occurs to an air conditioner, a check code and indoor unit No. are displayed on the display window of the remote control.

Check codes are only displayed while the air conditioner is in operation.

If the display has already disappeared, access trouble history by following the procedure described below.



(2) Trouble history

The trouble history access procedure is described below (up to four troubles stored in memory).

Trouble history can be accessed regardless of whether the air conditioner is in operation or shut down.

<Procedure> To be performed when system at rest

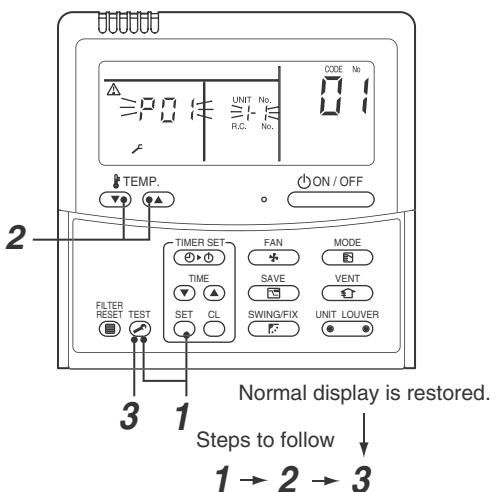
1 **Invoke the SERVICE CHECK mode by pushing the + buttons simultaneously and holding for at least 4 seconds.**

The letters “ SERVICE CHECK” light up, and the check code “01” is displayed, indicating the trouble history. This is accompanied by the indoor unit No. to which the trouble history is related and a check code.

2 **To check other trouble history items, push the bu another check code.**

Check code “ 1” Check code “ 4” (oldest)
Note: Err i ntains four items.

3 **When the button is pushed, normal display is restored.**



REQUIREMENT

Do not pu button as it would erase the whole trouble history of the indoor unit.

How to read displayed information

<7-segment display symbols>

0 1 2 3 4 5 6 7 8 9 A b C d E F H J L P

<Corresponding alphanumerical letters>

0 1 2 3 4 5 6 7 8 9 A b C d E F H J L P

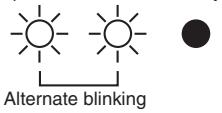
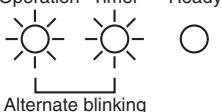
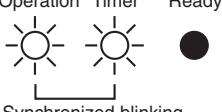
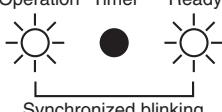
Using indoor unit indicators (receiving unit light block) (wireless type)

To identify the check code, check the 7-segment display on the header unit. To check for check codes not displayed on the 7-segment display, consult the "List of Check Codes (Indoor Unit)" in "8-2. Troubleshooting Method".

●: Goes off ○: Lighting ☼: Blinking (0.5 seconds)

Light block	Check code	Cause of fault	
Operation Timer Ready All lights out	–	Power turned off or trouble in wiring between receiving and indoor units	
Operation Timer Ready Blinking	E01	Faulty reception	Receiving unit
	E02	Faulty transmission	
	E03	Loss of communication	Trouble or poor contact in wiring between receiving and indoor units
	E08	Duplicated indoor unit No. (address)	Setting trouble
	E09	Duplicated master remote control	
	E10	Indoor unit inter-MCU communication trouble	
	E12	Automatic address starting trouble	
	E18	Trouble or poor contact in wiring between indoor units, indoor power turned off	
Operation Timer Ready Blinking	E04	Trouble or poor contact in wiring between indoor and outdoor units (loss of indoor-outdoor communication)	
	E06	Faulty reception in indoor-outdoor communication (Signal lack of indoor unit)	
	E07	Faulty transmission in indoor-outdoor communication	
	E15	Indoor unit not found during automatic address setting	
	E16	Too many indoor units connected/overloading	
	E19	Trouble in number of outdoor header units	
	E20	Detection of refrigerant piping communication trouble during automatic address setting	
	E23	Faulty transmission in outdoor-outdoor communication	
	E25	Duplicated follower outdoor address	
	E26	Faulty reception in outdoor-outdoor communication, Signal lack of outdoor unit	
	E28	Outdoor follower unit trouble	
	E31	IPDU communication trouble, sub MCU communication trouble	
Operation Timer Ready Alternate blinking	P01	Indoor AC fan trouble	
	P10	Indoor overflow trouble	
	P12	Indoor DC fan trouble	
	P13	Outdoor liquid backflow detection trouble	
Operation Timer Ready Alternate blinking	P03	Outdoor discharge (TD1) temperature trouble	
	P04	Activation of outdoor high-pressure SW	
	P05	Open phase/power failure Inverter DC voltage (Vdc) trouble MG-CTT trouble	
	P07	Outdoor heat sink overheating trouble - Poor cooling of electrical component (IPM) of outdoor unit	
	P15	Gas leak detection - insufficient refrigerant charging	
	P17	Outdoor discharge (TD2) temperature trouble	
	P19	Outdoor 4-way valve reversing trouble	
	P20	Activation of high-pressure protection	
	P22	Outdoor fan IPDU trouble	
	P26	Outdoor IPM short-circuit trouble	
	P29	Compressor position detection circuit trouble	
	P31	Shutdown of other indoor unit in group due to fault (group follower unit trouble)	

MG-CTT: Magnet contactor

Light block	Check code	Cause of fault	
	F01	Heat exchanger temperature sensor (TCJ) trouble	Indoor unit temperature sensor troubles
	F02	Heat exchanger temperature sensor (TC2) trouble	
	F03	Heat exchanger temperature sensor (TC1) trouble	
	F10	Ambient temperature sensor (TA/TSA) trouble	
	F11	Discharge temperature sensor (TF) trouble	
	F04	Discharge temperature sensor (TD1) trouble	Outdoor unit temperature sensor troubles
	F05	Discharge temperature sensor (TD2) trouble	
	F06	Heat exchanger temperature sensor (TE1, TE2) trouble	
	F07	Liquid temperature sensor (TL1, TL2, TL3) trouble	
	F08	Outside air temperature sensor (TO) trouble	
	F12	Suction temperature sensor (TS1, TS3) trouble	
	F13	Heat sink sensor (TH) trouble	
	F15	Wiring trouble in heat exchanger sensor (TE1) and liquid temperature sensor (TL1) Outdoor unit temperature sensor wiring/installation trouble	
	F16	Wiring trouble in outdoor high pressure sensor (Pd) and low pressure sensor (Ps) Outdoor pressure sensor wiring trouble	
	F17	Outside air suction temperature sensor (TOA) trouble	
	F18	Indoor air suction temperature sensor (TRA) trouble	
	F23	Low pressure sensor (Ps) trouble	Outdoor unit pressure sensor troubles
	F24	High pressure sensor (Pd) trouble	
	F29	Fault in indoor EEPROM	
	H01	Compressor breakdown	Outdoor unit compressor or A-3-IPDU related troubles
	H02	Compressor lockup	
	H03	Current detection circuit trouble	
	H05	Wiring/installation trouble or detachment of outdoor discharge temperature sensor (TD1)	
	H06	Abnormal drop in low-pressure sensor (Ps) reading	Protective shutdown of outdoor unit
	H07	Abnormal drop in oil level	
	H08	Trouble in temperature sensor for oil level detection circuit (TK1, TK2, TK4 or TK5)	
	H15	Wiring/installation trouble or detachment of outdoor discharge temperature sensor (TD2)	
	H16	Oil level detection circuit trouble - Trouble in outdoor unit TK1, TK2, TK4 or TK5 circuit	
	L02	Outdoor unit model unmatched trouble	
	L03	Duplicated indoor group header unit	
	L05	Duplicated priority indoor unit (as displayed on priority indoor unit)	
	L06	Duplicated priority indoor unit (as displayed on indoor unit other than priority indoor unit)	
	L07	Connection of group control cable to stand-alone indoor unit	
	L08	Indoor group address not set	
	L09	Indoor capacity not set	
	L04	Duplicated outdoor refrigerant line address	
	L10	Outdoor capacity not set	
	L20	Duplicated central control address	
	L23	SW setting mistake	
	L24	Flow selector unit(s) setting trouble	
	L28	Too many outdoor units connected	
	L29	Trouble in number of IPDUs	
	L30	Indoor external interlock trouble	

Light block	Check code	Cause of fault
Operation  Timer  Ready  Synchronized blinking	F31	Outdoor EEPROM trouble

Other (indications not involving check code)

Light block	Check code	Cause of fault
Operation  Timer  Ready  Synchronized blinking	–	Test run in progress
Operation  Timer  Ready  Alternate blinking	–	Setting incompatibility (automatic cooling/heating setting for model incapable of it and heating setting for cooling-only model)

8-4. Check Codes Displayed on Remote Control and SMMS-e Outdoor Unit (7-Segment Display on I/F Board) and Locations to Be Checked

For other types of outdoor units, refer to their own service manuals.

Main remote control	Check code		Location of detection	Description	System status	Trouble detection condition(s)	Check items (locations)
	Check code	Outdoor 7-segment display					
E01	—	—	Remote control	Indoor-remote control communication trouble (detected at remote control end)	Stop of corresponding unit	Communication between indoor P.C. board and remote control is disrupted.	<ul style="list-style-type: none"> Check remote control inter-unit tie cable (A/B). Check for broken wire or connector bad contact. Check indoor power supply. Check for defect in indoor P.C. board. Check remote control address settings (when two remote controls are in use). Check remote control P.C. board.
E02	—	—	Remote control	Remote control transmission trouble	Stop of corresponding unit	Signal cannot be transmitted from remote control to indoor unit.	<ul style="list-style-type: none"> Check internal transmission circuit of remote control. Replace remote control as necessary.
E03	—	—	Indoor unit	Indoor-remote control communication trouble (detected at indoor end)	Stop of corresponding unit	There is no communication from remote control (including wireless) or network adaptor.	<ul style="list-style-type: none"> Check remote control and network adaptor wiring.
E04	—	—	Indoor unit	Indoor-outdoor communication circuit trouble (detected at indoor end)	Stop of corresponding unit	Indoor unit is not receiving signal from outdoor unit.	<ul style="list-style-type: none"> Check order in which power was turned on for indoor and outdoor units. Check indoor address setting. Check indoor-outdoor tie cable. Check outdoor terminator resistor setting (SW30, Bit 2).
E06	E06	No. of indoor units from which signal is received normally	I/F	Signal lack of indoor unit	All stop	Indoor unit initially communicating normally fails to return signal for specified length of time.	<ul style="list-style-type: none"> Check power supply to indoor unit. (Is power turned on?) Check connection of indoor-outdoor communication cable. Check connection of communication connectors on indoor P.C. board. Check connection of communication connectors on outdoor P.C. board. Check for defect in indoor P.C. board. Check for defect in outdoor P.C. board (I/F).
—	E07	—	I/F	Indoor-outdoor communication circuit trouble (detected at outdoor end)	All stop	Signal cannot be transmitted from outdoor to indoor units for 30 seconds continuously.	<ul style="list-style-type: none"> Check outdoor terminator resistor setting (SW30, Bit 2). Check connection of indoor-outdoor communication circuit.
E08	E08	Duplicated indoor address	Indoor unit I/F	Duplicated indoor address	All stop	More than one indoor unit are assigned same address.	<ul style="list-style-type: none"> Check indoor addresses. Check for any change made to remote control connection (group/individual) since indoor address setting.
E09	—	—	Remote control	Duplicated master remote control	Stop of corresponding unit	In two remote control configuration (including wireless), both controls are set up as master. (Header indoor unit is shut down with alarm, while follower indoor units continue operating.)	<ul style="list-style-type: none"> Check remote control settings. Check remote control P.C. boards.
E10	—	—	Indoor unit	Indoor inter-MCU communication trouble	Stop of corresponding unit	Communication cannot be established/maintained upon turning on of power or during communication.	<ul style="list-style-type: none"> Check for defect in indoor P.C. board
E12	E12	01: Indoor-outdoor communication 02: Outdoor-outdoor communication	I/F	Automatic address starting trouble	All stop	<ul style="list-style-type: none"> Indoor automatic address setting is started while automatic address setting for equipment in other refrigerant line is in progress. Outdoor automatic address setting is started while automatic address setting for indoor units is in progress. 	<ul style="list-style-type: none"> Perform automatic address setting again after disconnecting communication cable to that refrigerant line.
E15	E15	—	I/F	Indoor unit not found during automatic address setting	All stop	Indoor unit cannot be detected after indoor automatic address setting is started.	<ul style="list-style-type: none"> Check connection of indoor-outdoor communication line. Check for trouble in indoor power supply system. Check for noise from other devices. Check for power failure. Check for defect in indoor P.C. board.

Check code		Location of detection	Description	System status	Trouble detection condition(s)	Check items (locations)
Main remote control	Outdoor 7-segment display					
		Check code	Sub-code			
E16	E16	00: Overloading 01:- No. of units connected	I/F	Too many indoor units connected	All stop	<ul style="list-style-type: none"> Combined capacity of indoor units exceeds 135% of combined capacity of outdoor units. <p>Note: If this code comes up after backup setting for outdoor unit failure is performed, perform "No overloading detected" setting. <"No overloading detected" setting method> Turn on SW09/Bit 2 on I/F P.C. board of outdoor header unit. • More than 64 indoor units are connected.</p>
E18	—	—	Indoor unit	Trouble in communication between indoor header and follower units	Stop of corresponding unit	<p>Periodic communication between indoor header and follower units cannot be maintained.</p> <ul style="list-style-type: none"> Check remote control wiring. Check indoor power supply wiring. Check P.C. boards of indoor units.
E19	E19	00: No header unit 02: Two or more header units	I/F	Trouble in number of outdoor header units	All stop	<ul style="list-style-type: none"> There are more than one outdoor header units in one line. There is no outdoor header unit in one line. <p>Outdoor header unit is outdoor unit to which indooroutdoor tie cable (U1,U2) is connected.</p> <ul style="list-style-type: none"> Check connection of indoor-outdoor communication line. Check for defect in outdoor P.C. board (I/F).
E20	E20	01: Connection of outdoor unit from other line 02: Connection of indoor unit from other line	I/F	Connection to other line found during automatic address setting	All stop	<p>Equipment from other line is found to have been connected when indoor automatic address setting is in progress.</p> <p>Disconnect inter-line tie cable in accordance with automatic address setting method explained in "Address setting" section.</p>
E23	E23	—	I/F	Outdooroutdoor communication transmission trouble	All stop	<p>Signal cannot be transmitted to other outdoor units for at least 30 seconds continuously.</p> <ul style="list-style-type: none"> Check power supply to outdoor units. (Is power turned on?) Check connection of tie cables between outdoor units for bad contact or broken wire. Check communication connectors on outdoor P.C. boards. Check for defect in outdoor P.C. board (I/F). Check termination resistance setting for communication between outdoor units.
E25	E25	—	I/F	Duplicated follower outdoor address	All stop	<p>There is duplication in outdoor addresses set manually.</p> <p>Note: Do not set outdoor addresses manually.</p>
E26	E26	Address of outdoor unit from which signal is not received normally	I/F	Signal lack of outdoor unit	All stop	<p>Outdoor unit initially communicating normally fails to return signal for specified length of time.</p> <ul style="list-style-type: none"> Backup setting is being used for outdoor units. Check power supply to outdoor unit. (Is power turned on?) Check connection of tie cables between outdoor units for bad contact or broken wire. Check communication connectors on outdoor P.C. boards. Check for defect in outdoor P.C. board (I/F).
E28	E28	Detected outdoor unit No.	I/F	Outdoor follower unit trouble	All stop	<p>Outdoor header unit receives trouble code from outdoor follower unit.</p> <ul style="list-style-type: none"> Check check code displayed on outdoor follower unit. <Convenient functions> If SW04 is pressed and held for at least 1 second while [E28] is displayed on the 7-segment display of outdoor header unit, the fan of the outdoor unit that has been shut down due to a trouble comes on. If SW04 and SW05 are pressed simultaneously, the fans of normal outdoor units come on. To stop the fan or fans, press SW05 on its own.

Check code				Location of detection	Description	System status	Trouble detection condition(s)	Check items (locations)					
Main remote control	Outdoor 7-segment display												
	Check code	Sub-code		E31	IPDU communication trouble	All stop	Communication is disrupted between IPDUs (P.C. boards) in inverter box.	<ul style="list-style-type: none"> Check wiring and connectors involved in communication between IPDU-I/F P.C. board for bad contact or broken wire. Check for defect in outdoor P.C. board (I/F, A3-IPDU or Fan IPDU). Check for external noise. 					
E31	E31	01	O										
		02	O										
		03	O O O										
		08	O										
		09	O O										
		0A	O O										
		0B	O O										
		10	O										
		11	O O										
		12	O O										
		13	O O O O										
		18	O O										
		19	O O O										
		1A	O O O										
		1B	O O O										
		Circle (O): IPDU trouble											
		80											
		Communication trouble between MCU and Sub MCU											
F01	—	—	Indoor unit	Indoor TCJ sensor trouble	Stop of corresponding unit	Sensor resistance is infinity or zero (open/short circuit).	<ul style="list-style-type: none"> Operation of power supply reset (OFF for 60 seconds or more) Outdoor I/F PC board trouble check. 						
F02	—	—	Indoor unit	Indoor TC2 sensor trouble	Stop of corresponding unit	Sensor resistance is infinity or zero (open/short circuit).							
F03	—	—	Indoor unit	Indoor TC1 sensor trouble	Stop of corresponding unit	Sensor resistance is infinity or zero (open/short circuit).							
F04	F04	—	I/F	TD1 sensor trouble	All stop	Sensor resistance is infinity or zero (open/short circuit).							
F05	F05	—	I/F	TD2 sensor trouble	All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul style="list-style-type: none"> Check connection of TD2 sensor connector. Check resistance characteristics of TD2 sensor. Check for defect in outdoor P.C. board (I/F). 						
F06	F06	01: TE1 sensor trouble 02: TE2 sensor trouble	I/F	TE1/TE2 sensor trouble	All stop	Sensor resistance is infinity or zero (open/short circuit).							
F07	F07	01: TL1 sensor trouble	I/F	TL1 sensor trouble	All stop	Sensor resistance is infinity or zero (open/short circuit).							
F08	F08	—	I/F	TO sensor trouble	All stop	Sensor resistance is infinity or zero (open/short circuit).							
F09	F09	01: TG1 sensor trouble 02: TG2 sensor trouble	I/F	TG1/TG2	All stop	Sensor resistance is infinity or zero (open/short circuit).							
F10	—	—	Indoor unit	Indoor TA sensor trouble	Stop of corresponding unit	Sensor resistance is infinity or zero (open/short circuit).							
F11	—	—	Indoor unit	Indoor TF sensor trouble	Stop of corresponding unit	Sensor resistance is infinity or zero (open/short circuit).							

Check code		Location of detection	Description	System status	Trouble detection condition(s)	Check items (locations)	
Main remote control	Outdoor 7-segment display						
		Check code	Sub-code				
F12	F12	01: TS1 sensor trouble 03: TS2 sensor trouble	I/F	TS1/TS2 sensor trouble	All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul style="list-style-type: none"> Check connection of TS1/TS3 sensor connector. Check resistance characteristics of TS1/TS3 sensor. Check for defect.
F13	F13	01: Compressor 1 side 02: Compressor 2 side	IPDU	TH sensor trouble	All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul style="list-style-type: none"> Defect in IPM built-in temperature sensor → Replace A3-IPDU P.C. board.
F15	F15	—	I/F	Outdoor temperature sensor wiring trouble (TE1, TL1)	All stop	During compressor operation in HEAT mode, TL1 continuously provides temperature reading higher than indicated by TL1 by at least specified margin for 3 minutes or more.	<ul style="list-style-type: none"> Check installation of TE1 and TL1 sensors. Check resistance characteristics of TE1 and TL1 sensors. Check for outdoor P.C. board (I/F) trouble.
F16	F16	—	I/F	Outdoor pressure sensor and lowpressure Ps sensor are switched. Output voltages of both sensors are zero.	All stop	Readings of high-pressure Pd sensor and lowpressure Ps sensor are switched. Output voltages of both sensors are zero.	<ul style="list-style-type: none"> Check connection of highpressure Pd sensor connector. Check connection of lowpressure Ps sensor connector. Check for defect in pressure sensors Pd and Ps. Check for trouble in outdoor P.C. board (I/F). Check for deficiency in compressive output of compressor.
F23	F23	—	I/F	Ps sensor trouble	All stop	Output voltage of Ps sensor is zero.	<ul style="list-style-type: none"> Check for connection trouble involving Ps sensor and Pd sensor connectors. Check connection of Ps sensor connector. Check for defect in Ps sensor. Check for deficiency in compressive output of compressor. Check for defect in 4-way valve. Check for defect in outdoor P.C. board (I/F). Check for defect in SV4 circuit.
F24	F24	—	I/F	Pd sensor trouble	All stop	Output voltage of Pd sensor is zero (sensor open-circuited). Pd > 4.15MPa despite compressor having been turned off.	<ul style="list-style-type: none"> Check connection of Pd sensor connector. Check for defect in Pd sensor. Check for defect in outdoor P.C. board (I/F).
F29	—	—	Indoor unit	Other indoor trouble	Stop of corresponding unit	Indoor P.C. board does not operate normally.	<ul style="list-style-type: none"> Check for defect in indoor P.C. board (faulty EEPROM)
F31	F31	—	I/F	Outdoor EEPROM trouble	All stop *1	Outdoor P.C. board (I/F) does not operate normally.	<ul style="list-style-type: none"> Check power supply voltage. Check power supply noise. Check for defect in outdoor P.C. board (I/F).
H01	H01	01: Compressor 1 side 02: Compressor 2 side	IPDU	Compressor breakdown	All stop	Inverter current detection circuit detects overcurrent and shuts system down.	<ul style="list-style-type: none"> Check power supply voltage. (AC460V ± 10%). Check for defect in compressor. Check for possible cause of abnormal overloading. Check for defect in outdoor P.C. board (A3-IPDU).
H02	H02	01: Compressor 1 side 02: Compressor 2 side	IPDU	Compressor trouble (lockup) MG-CTT trouble	All stop	Overcurrent is detected several seconds after startup of inverter compressor.	<ul style="list-style-type: none"> Check for defect in compressor. Check power supply voltage. (AC460V ± 10%). Check compressor system wiring, particularly for open phase. Check connection of connectors/terminals on A3-IPDU P.C. board. Check conductivity of case heater. (Check for refrigerant problem inside compressor.) Check for defect in outdoor P.C. board (A3-IPDU). Check outdoor MG-CTT.
H03	H03	01: Compressor 1 side 02: Compressor 2 side	IPDU	Current detection circuit trouble	All stop	Current flow of at least specified magnitude is detected despite inverter compressor having been shut turned off.	<ul style="list-style-type: none"> Check current detection circuit wiring. Check defect in outdoor P.C. board (A3-IPDU).
H05	H05	—	I/F	TD1 sensor miswiring (incomplete insertion)	All stop	Discharge temperature of compressor 1 (TD1) does not increase despite compressor being in operation.	<ul style="list-style-type: none"> Check installation of TD1 sensor. Check connection of TD1 sensor connector and wiring. Check resistance characteristics of TD1 sensor. Check for defect in outdoor P.C. board (I/F).

*1 Total shutdown in case of header unit
Continued operation in case of follower unit

MG-CTT: Magnet contactor

Check code		Location of detection	Description	System status	Trouble detection condition(s)	Check items (locations)	
Main remote control	Outdoor 7-segment display						
Check code	Sub-code						
H06	H06	—	I/F	Activation of low-pressure protection	All stop	Low-pressure Ps sensor detects operating pressure lower than 0.02MPa.	<ul style="list-style-type: none"> Check service valves to confirm full opening (both gas and liquid sides). Check outdoor PMVs for clogging (PMV1). Check for defect in SV2 or SV4 circuits. Check for defect in lowpressure Ps sensor. Check indoor filter for clogging. Check valve opening status of indoor PMV. Check refrigerant piping for clogging. Check operation of outdoor fan (during heating). Check for insufficiency in refrigerant quantity.
H07	H07	—	I/F	Low oil level protection	All stop	Operating compressor detects continuous state of low oil level for about 2 hours.	<All outdoor units in corresponding line to be checked> <ul style="list-style-type: none"> Check balance pipe service valve to confirm full opening. Check connection and installation of TK1, TK2, TK4, and TK5 sensors. Check resistance characteristics of TK1, TK2, TK4, and TK5 sensors. Check for gas or oil leak in same line. Check for refrigerant problem inside compressor casing. Check SV3A, SV3B, SV3C, SV3D valves for defect. Check oil return circuit of oil separator for clogging. Check oil equalizing circuit for clogging.
H08	H08	01: TK1 sensor trouble 02: TK2 sensor trouble 04: TK4 sensor trouble 05: TK5 sensor trouble	I/F	Trouble in temperature sensor for oil level detection	All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul style="list-style-type: none"> Check connection of TK1 sensor connector. Check resistance characteristics of TK1 sensor. Check for defect in outdoor P.C. board (I/F).
					All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul style="list-style-type: none"> Check connection of TK2 sensor connector. Check resistance characteristics of TK2 sensor. Check for defect in outdoor P.C. board (I/F).
					All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul style="list-style-type: none"> Check connection of TK4 sensor connector. Check resistance characteristics of TK4 sensor. Check for defect in outdoor P.C. board (I/F).
					All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul style="list-style-type: none"> Check connection of TK5 sensor connector. Check resistance characteristics of TK5 sensor. Check for defect in outdoor P.C. board (I/F).
H15	H15	—	I/F	TD2 sensor miswiring (incomplete insertion)	All stop	Discharge temperature of (TD2) does not increase despite compressor 2 being in operation.	<ul style="list-style-type: none"> Check installation of TD2 sensor. Check connection of TD2 sensor connector and wiring. Check resistance characteristics of TD2 sensor. Check for defect in outdoor P.C. board (I/F).

Check code		Location of detection	Description	System status	Trouble detection condition(s)	Check items (locations)			
Main remote control	Outdoor 7-segment display								
Check code	Sub-code	H16	I/F	All stop	No temperature change is detected by TK1 despite compressor 1 having been started.	<ul style="list-style-type: none"> Check for disconnection of TK1 sensor. Check resistance characteristics of TK1 sensor. Check for connection trouble involving TK1, TK2, , TK4, and TK5 sensors Check for clogging in oil equalizing circuit capillary and faulty operation in check valve. Check for refrigerant entrapment inside compressor. 			
H16	H16				No temperature change is detected by TK2 despite compressor 2 having been started.	<ul style="list-style-type: none"> Check for disconnection of TK2 sensor. Check resistance characteristics of TK2 sensor. Check for connection trouble involving TK1, TK2, , TK4, and TK5 sensors Check for clogging in oil equalizing circuit capillary and faulty operation in check valve. Check for refrigerant entrapment inside compressor. 			
					No temperature change is detected by TK4 despite compressor having been started.	<ul style="list-style-type: none"> Check for disconnection of TK4 sensor. Check resistance characteristics of TK4 sensor. Check for connection trouble involving TK1, TK2, , TK4, and TK5 sensors Check for clogging in oil equalizing circuit capillary and faulty operation in check valve. Check for refrigerant entrapment inside compressor. 			
					No temperature change is detected by TK4 despite compressor having been started.	<ul style="list-style-type: none"> Check for disconnection of TK5 sensor. Check resistance characteristics of TK5 sensor. Check for connection trouble involving TK1, TK2, , TK4, and TK5 sensors Check for clogging in oil equalizing circuit capillary and faulty operation in check valve. Check for refrigerant entrapment inside compressor. 			
L02	L02	—	Indoor unit	Outdoor units model disagreement trouble	Stop of corresponding unit	In case of different outdoor unit (Not corresponded to Air to Air Heat Exchanger type)	<ul style="list-style-type: none"> Check outdoor unit model. (Check whether the outdoor unit corresponds to Air to Air Heat Exchanger type or not.) 		
L03	—	—	Indoor unit	Duplicated indoor header unit	Stop of corresponding unit	There are more than one header units in group.	<ul style="list-style-type: none"> Check indoor addresses. Check for any change made to remote control connection (group/individual) since indoor address setting. 		
L04	L04	—	I/F	Duplicated outdoor line address	All stop	There is duplication in line address setting for outdoor units belonging to different refrigerant piping systems.	<ul style="list-style-type: none"> Check line addresses. 		
L05	—	—	I/F	Duplicated priority indoor unit (as displayed on priority indoor unit)	All stop	More than one indoor units have been set up as priority indoor unit.	<ul style="list-style-type: none"> Check display on priority indoor unit. 		
L06	L06	No. of priority indoor units	I/F	Duplicated priority indoor unit (as displayed on indoor unit other than priority indoor unit)	All stop	More than one indoor units have been set up as priority indoor unit.	<ul style="list-style-type: none"> Check displays on priority indoor unit and outdoor unit. 		
L07	—	—	Indoor unit	Connection of group control cable to standalone indoor unit	Stop of corresponding unit	There is at least one standalone indoor unit to which group control cable is connected.	<ul style="list-style-type: none"> Check indoor addresses. 		
L08	L08	—	Indoor unit	Indoor group / addresses not set	Stop of corresponding unit	Address setting has not been performed for indoor units.	<ul style="list-style-type: none"> Check indoor addresses. <p>Note: This code is displayed when power is turned on for the first time after installation.</p>		

Check code			Location of detection	Description	System status	Trouble detection condition(s)	Check items (locations)																																																																																					
Main remote control	Outdoor 7-segment display		Check code	Sub-code																																																																																								
L09	—	—	Indoor unit	Indoor capacity not set	Stop of corresponding unit	Capacity setting has not been performed for indoor unit.	Set indoor capacity. (DN = 11)																																																																																					
L10	L10	—	I/F	Outdoor capacity not set	All stop	Jumper wire provided on P.C. board for servicing I/F P.C. board has not been removed as required for given model.	Check model setting of P.C. board for servicing outdoor I/F P.C. board.																																																																																					
L20	—	—	Network adaptor Indoor unit	Duplicated central control address	All stop	There is duplication in central control address setting.	<ul style="list-style-type: none"> Check central control addresses. Check network adaptor P.C. board. 																																																																																					
L23	—	—	I/F	SW setting mistake	All stop	Outdoor P.C. board (I/F) does not operate normally.	<ul style="list-style-type: none"> Check switch setting of Bit 3 and 4 of SW17 in outdoor P.C. board (I/F). 																																																																																					
L28	L28	—	I/F	Too many outdoor units connected	All stop	There are more than three outdoor units.	<ul style="list-style-type: none"> Check No. of outdoor units connected (Only up to 3 units per system allowed). Check communication lines between outdoor units. Check for defect in outdoor P.C. board (I/F). 																																																																																					
L29	L29	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <th></th><th colspan="2">A3-IPDU</th><th colspan="2">Fan-IPDU</th></tr> <tr> <th></th><th>1</th><th>2</th><th>1</th><th>2</th></tr> <tr> <td>01</td><td>O</td><td></td><td></td><td></td></tr> <tr> <td>02</td><td></td><td>O</td><td></td><td></td></tr> <tr> <td>03</td><td>O</td><td>O</td><td></td><td></td></tr> <tr> <td>08</td><td></td><td></td><td>O</td><td></td></tr> <tr> <td>09</td><td>O</td><td></td><td>O</td><td></td></tr> <tr> <td>0A</td><td></td><td>O</td><td>O</td><td></td></tr> <tr> <td>0B</td><td>O</td><td>O</td><td>O</td><td></td></tr> <tr> <td>10</td><td></td><td></td><td></td><td>O</td></tr> <tr> <td>11</td><td>O</td><td></td><td></td><td>O</td></tr> <tr> <td>12</td><td></td><td>O</td><td></td><td>O</td></tr> <tr> <td>13</td><td>O</td><td>O</td><td></td><td>O</td></tr> <tr> <td>18</td><td></td><td></td><td>O</td><td>O</td></tr> <tr> <td>19</td><td>O</td><td></td><td>O</td><td>O</td></tr> <tr> <td>1A</td><td></td><td>O</td><td>O</td><td>O</td></tr> <tr> <td>1B</td><td>O</td><td>O</td><td>O</td><td>O</td></tr> </table> <p>Circle (O): IPDU trouble</p>		A3-IPDU		Fan-IPDU			1	2	1	2	01	O				02		O			03	O	O			08			O		09	O		O		0A		O	O		0B	O	O	O		10				O	11	O			O	12		O		O	13	O	O		O	18			O	O	19	O		O	O	1A		O	O	O	1B	O	O	O	O	I/F	Trouble in No. of IPDUs	All stop	Insufficient number of IPDUs are detected when power is turned on.	<ul style="list-style-type: none"> Check model setting of P.C. board for servicing outdoor I/F P.C. board. Check connection of UART communication connector. Check A3-IPDU, fan IPDU, and I/F P.C. board for defect.
	A3-IPDU		Fan-IPDU																																																																																									
	1	2	1	2																																																																																								
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L30	L30	Detected indoor address	Indoor unit	External interlock of indoor unit	Stop of corresponding unit	<ul style="list-style-type: none"> Signal is present at external trouble input terminal (CN80) for 1 minute. 	<p>When external device is connected to CN80 connector:</p> <ol style="list-style-type: none"> Check for defect in external device. Check for defect in indoor P.C. board. <p>When external device is not connected to CN80 connector:</p> <ol style="list-style-type: none"> Check for defect in indoor P.C. board. 																																																																																					
—	L31	—	I/F	Extended IC trouble	Continued operation	There is part failure in P.C. board (I/F).	Check outdoor P.C. board (I/F).																																																																																					
P01	—	—	Indoor unit	Indoor fan motor trouble	Stop of corresponding unit		<ul style="list-style-type: none"> Check the lock of fan motor (AC fan). Check wiring. 																																																																																					
P03	P03	—	I/F	Discharge temperature TD1 trouble	All stop	Discharge temperature (TD1) exceeds 239°F (115°C).	<ul style="list-style-type: none"> Check outdoor service valves (gas side, liquid side) to confirm full opening. Check outdoor PMVs (PMV1, 3) for clogging. Check resistance characteristics of TD1 sensor. Check for insufficiency in refrigerant quantity. Check for defect in 4-way valve. Check for leakage of SV4 circuit. Check SV4 circuit (wiring or installation trouble in SV41 or SV42). 																																																																																					

Check code		Location of detection	Description	System status	Trouble detection condition(s)	Check items (locations)	
Main remote control	Outdoor 7-segment display						
Check code	Sub-code						
P04	P04	01: Compressor 1 side 02: Compressor 2 side	IPDU	Activation of high-pressure SW	All stop	High-pressure SW is activated.	<ul style="list-style-type: none"> Check connection of highpressure SW connector. Check for defect in Pd pressure sensor. Check outdoor service valves (gas side, liquid side) to confirm full opening. Check for defect in outdoor fan. Check for defect in outdoor fan motor. Check outdoor PMVs (PMV1, 4) for clogging. Check indoor/outdoor heat exchangers for clogging. Check for short-circuiting of outdoor suction/discharge air flows. Check SV2 circuit for clogging. Check for defect in outdoor P.C. board (I/F). Check for trouble in indoor fan system (possible cause of air flow reduction). Check opening status of indoor PMV. Check indoor-outdoor communication line for wiring trouble. Check for faulty operation of check valve in discharge pipe convergent section. Check gas balancing SV4 valve circuit. Check SV5 valve circuit. Check for refrigerant overcharging.
P05	P05	00: 01: Compressor 1 side 02: Compressor 2 side	I/F	Detection of open phase/phase sequence Inverter DC voltage (Vdc) trouble (compressor) MG-CTT trouble	All stop	<ul style="list-style-type: none"> Open phase is detected when power is turned on. Inverter DC voltage is too high (overvoltage) or too low (undervoltage). 	<ul style="list-style-type: none"> Check for defect in outdoor P.C. board (I/F). Check wiring of outdoor power supply.
P07	P07	01: Compressor 1 side 02: Compressor 2 side	IPDU I/F	Heat sink overheating trouble	All stop	Temperature sensor built into IPM (TH) is overheated.	<ul style="list-style-type: none"> Check power supply voltage. Check outdoor fan system trouble. Check heat sink cooling duct for clogging. Check IPM and heat sink for thermal performance for faulty installation. (e.g. mounting screws and thermal conductivity) Check for defect in A3-IPDU. (faulty IPM built-in temperature sensor (TH))
P10	P10	Detected indoor address	Indoor unit	Indoor overflow trouble	All stop	<ul style="list-style-type: none"> Float switch operates. Float switch circuit is open-circuited or disconnected at connector 	<ul style="list-style-type: none"> Check float switch connector. Check operation of drain pump. Check drain pump circuit. Check drain pipe for clogging. Check for defect in indoor P.C. board.
P12	—	—	Indoor unit	Indoor DC fan trouble	Stop of corresponding unit	<ul style="list-style-type: none"> Motor speed measurements continuously deviate from target value. Over current protection is activated. 	<ul style="list-style-type: none"> Check connection of fan connector and wiring. Check for defect in fan motor. Check for defect in indoor P.C. board. Check impact of outside air treatment (OA).
P13	P13	—	I/F	Outdoor liquid backflow detection trouble	All stop	<During cooling operation> When system is in cooling operation, high pressure is detected in follower unit that has been turned off. <During heating operation> When system is in heating operation, outdoor PMV 1 or 3 continuously registers opening of 300p or less while under superheat control.	<ul style="list-style-type: none"> Check full-close operation of outdoor PMV (1, 3, 4). Check for defect in Pd or Ps sensor. Check gas balancing circuit (SV2) for clogging. Check balance pipe. Check SV3B circuit for clogging. Check defect in outdoor P.C. board (I/F). Check capillary of oil separator oil return circuit for clogging. Check for leakage of check valve in discharge pipe convergent section.

MG-CTT: Magnet contactor

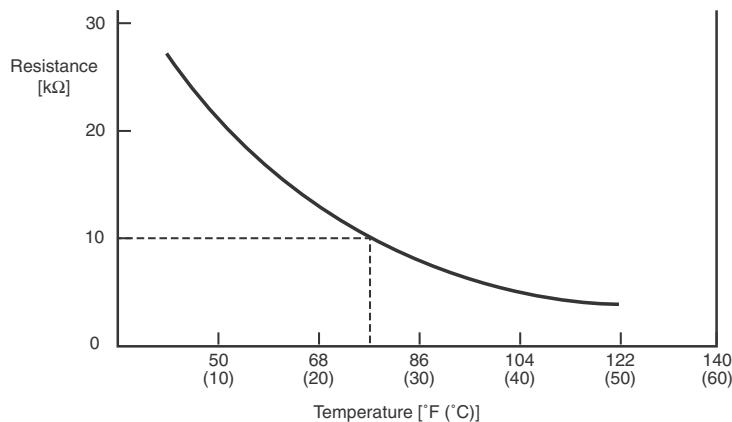
Check code		Location of detection	Description	System status	Trouble detection condition(s)	Check items (locations)	
Main remote control	Outdoor 7-segment display						
Check code	Sub-code						
P15	P15	01: TS condition	I/F	Gas leakdetection (TS1 condition)	All stop	Protective shutdown due to sustained suction temperature at or above judgment criterion for at least 10 minutes is repeated four times or more. <TS trouble judgment criterion> In cooling operation: 140°F (60°C) In heating operation: 104°F (40°C)	<ul style="list-style-type: none"> Check for insufficiency in refrigerant quantity. Check outdoor service valves (gas side, liquid side) to confirm full opening. Check PMVs (PMV1, 3) for clogging. Check resistance characteristics of TS1 sensor. Check for defect in 4-way valve. Check SV4 circuit for leakage
		02: TD condition	I/F	Gas leak detection (TD condition)	All stop	Protective shutdown due to sustained discharge temperature (TD1 or TD2) at or above 226.4°F (108°C) for at least 10 minutes is repeated four times or more.	<ul style="list-style-type: none"> Check for insufficiency in refrigerant quantity. Check PMVs (PMV 1, 3) for clogging. Check resistance characteristics of TD1 and TD2 sensors. Check indoor filter for clogging. Check piping for clogging. Check SV4 circuit (for leakage or coil installation trouble).
P17	P17	—	I/F	Discharge temperature TD2 trouble	All stop	Discharge temperature (TD2) exceeds 239°F (115°C).	<ul style="list-style-type: none"> Check outdoor service valves (gas side, liquid side) to confirm full opening. Check outdoor PMVs (PMV1, 3, 4) for clogging. Check resistance characteristics of TD2 sensor. Check for defect in 4-way valve. Check SV4 circuit for leakage. Check SV4 circuit (for wiring or installation trouble involving SV41 and SV42).
P19	P19	Detected outdoor unit No.	I/F	4-way valve reversing trouble	All stop	Abnormal refrigerating cycle data is collected during heating operation.	<ul style="list-style-type: none"> Check for defect in main body of 4-way valve. Check for coil defect in 4-way valve and loose connection of its connector. Check resistance characteristics of TS1 and TE1,TE2 sensors. Check output voltage characteristics of Pd and Ps pressure sensors. Check for wiring trouble involving TE1 and TL1 sensors.
P20	P20	—	I/F	Activation of high-pressure protection	All stop	<During cooling operation> Pd sensor detects pressure equal to or greater than 558.25 psi (3.85 MPa). <During heating operation> Pd sensor detects pressure equal to or greater than 522 psi (3.6 MPa).	<ul style="list-style-type: none"> Check for defect in Pd pressure sensor. Check service valves (gas side, liquid side) to confirm full opening. Check for defect in outdoor fan. Check for defect in outdoor fan motor. Check outdoor PMV (PMV1, 3, 4) for clogging. Check indoor/outdoor heat exchangers for clogging. Check for short-circuiting of outdoor suction/ discharge air flows. Check SV2 circuit for clogging. Check for defect in outdoor P.C. board (I/F). Check for defect in indoor fan system (possible cause of air flow reduction). Check opening status of indoor PMV. Check indoor-outdoor communication line for wiring trouble. Check for faulty operation of check valve in discharge pipe convergent section. Check gas balancing SV4 valve circuit. Check SV5 valve circuit. Check for refrigerant overcharging.

Check code		Location of detection	Description	System status	Trouble detection condition(s)	Check items (locations)
Main remote control	Outdoor 7-segment display					
		P22	IPDU	All stop	(Sub code: #0) Fan IPDU over current protection circuit. Flow of current equal to or greater than the specified value is detected during startup of the fan.	• Check fan motor. • Check for defect in fan IPDU P.C. board.
	#0:Element short circuit				(Sub code: #1) Fan IPDU position detection circuit. Position detection is not going on normally.	• Check fan motor. • Check connection of fan motor connector. • Check for defect in fan IPDU P.C. board.
	#1:Position detection circuit trouble				(Sub code: #3) Gusty wind, an obstruction, or another external factor. Speed estimation is not going on normally.	• Check fan motor. • Check for defect in fan IPDU P.C. board.
	#3:Motor lock trouble				(Sub code: #4) Fan IPDU over current protection circuit. Flow of current equal to or greater than the specified value is detected during operation of the fan.	• Check fan motor. • Check connection of fan motor connector. • Check for defect in fan IPDU P.C. board.
	#4:Motor current trouble				(Sub code: #C) Higher temperature than the specified value is detected during operation of the fan.	• Check fan motor. • Check for defect in fan IPDU P.C. board.
	#C:TH sensor temperature trouble				(Sub code: #D) The resistance value of the sensor is infinite or zero (open or short circuit).	• Check for defect in fan IPDU P.C. board.
	#D:TH sensor short circuit/release trouble				(Sub code: #E) Fan IPDU DC voltage protection circuit. The DC voltage higher or lower than the specified value is detected.	• Check power voltage of the main power supply. • Check for defect in fan IPDU P.C. board. • Check connection of fan IPDU P.C. board.
P26	P26	01: Compressor 1 side 02: Compressor 2 side	IPDU	IPM shortcircuit protection trouble	All stop Overcurrent is momentarily detected during startup of compressor.	• Check connector connection and wiring on A3-IPDU P.C. board. • Check for defect in compressor (layer shortcircuit). • Check for defect in outdoor P.C. board (A3-IPDU).
P29	P29	01: Compressor 1 side 02: Compressor 2 side	IPDU	Compressor position detection circuit trouble	All stop Position detection is not going on normally.	• Check wiring and connector connection. • Check for compressor layer short-circuit. • Check for defect in A3-IPDU P.C. board.
P31	—	—	Indoor unit	Other indoor trouble (group follower unit trouble)	Stop of corresponding unit There is trouble in other indoor unit in group, resulting in detection of E07/L07/L03/L08.	• Check indoor P.C. board.
C05	—	—	TCC-LINK	TCC-LINK central control device transmission trouble	Continued operation Central control device is unable to transmit signal.	• Check for defect in central control device. • Check for defect in central control communication line. • Check termination resistance setting.
C06	—	—	TCC-LINK	TCC-LINK central control device reception trouble	Continued operation Central control device is unable to transmit signal.	• Check for defect in central control device. • Check for defect in central control communication line. • Check terminator resistor setting. • Check power supply for devices at other end of central control communication line. • Check defect in P.C. boards of devices at other end of central control communication line.
C12	—	—	General-purpose device I/F	Batch alarm for general-purpose device control interface	Continued operation Trouble signal is input to control interface for general-purpose devices.	• Check trouble input.
P30	Differs according to nature of alarm-causing trouble (L20 displayed.)		TCC-LINK	Group control follower unit trouble Duplicated central control address	Continued operation Trouble occurs in follower unit under group control. (IP30 is displayed on central remote control.) There is duplication in central control addresses.	• Check check code of unit that has generated alarm. • Check address settings.

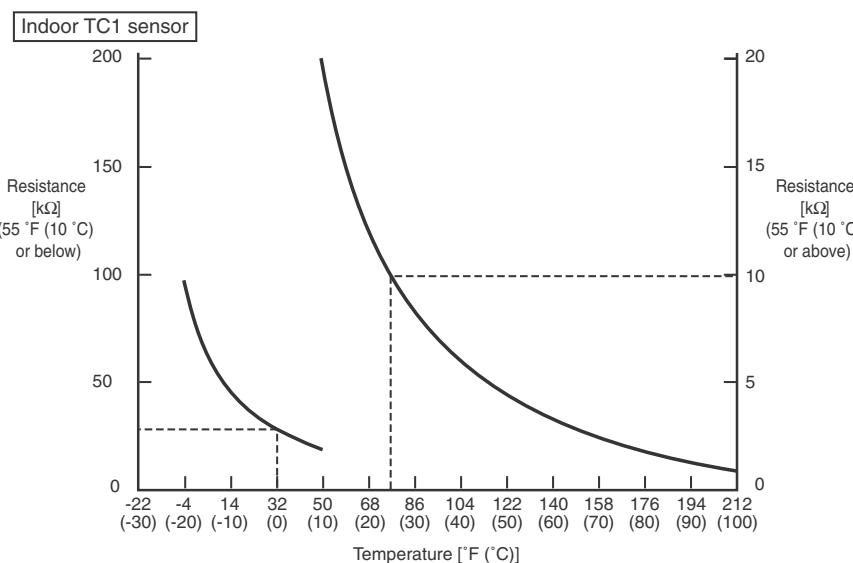
8-5. Sensor Characteristics

Indoor Unit

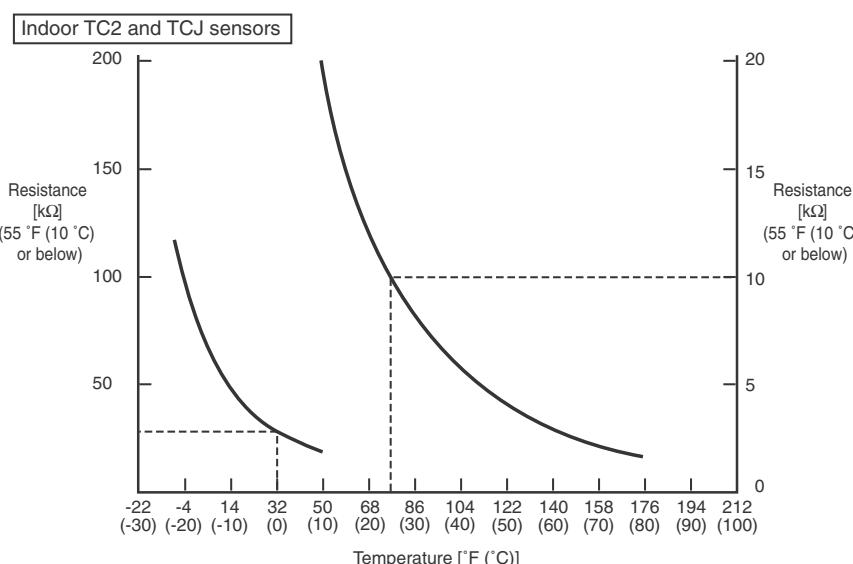
■ Temperature sensor characteristics



Temperature [°F (°C)]	Resistance [kΩ]
32 (0)	33.9
41 (5)	26.1
50 (10)	20.3
59 (15)	15.9
68 (20)	12.6
77 (25)	10.0
86 (30)	8.0
95 (35)	6.4
104 (40)	5.2
113 (45)	4.2
122 (50)	3.5
131 (55)	2.8
140 (60)	2.4



Temperature [°F (°C)]	Resistance [kΩ]
-4 (-20)	99.9
5 (-15)	74.1
14 (-10)	55.6
23 (-5)	42.2
32 (0)	32.8
41 (5)	25.4
50 (10)	19.8
59 (15)	15.6
68 (20)	12.4
77 (25)	10.0
86 (30)	8.1
95 (35)	6.5
104 (40)	5.3
113 (45)	4.4
122 (50)	3.6
131 (55)	3.0
140 (60)	2.5
149 (65)	2.1
158 (70)	1.8
167 (75)	1.5
176 (80)	1.3
185 (85)	1.1
194 (90)	1.0
203 (95)	0.8
212 (100)	0.7



Temperature [°F (°C)]	Resistance [kΩ]
-4 (-20)	115.2
5 (-15)	84.2
14 (-10)	62.3
23 (-5)	46.6
32 (0)	35.2
41 (5)	26.9
50 (10)	20.7
59 (15)	16.1
68 (20)	12.6
77 (25)	10.0
86 (30)	8.0
95 (35)	6.4
104 (40)	5.2
113 (45)	4.2
122 (50)	3.5
131 (55)	2.8
140 (60)	2.4
149 (65)	2.0
158 (70)	1.6
167 (75)	1.4
176 (80)	1.2

9. DETACHMENTS

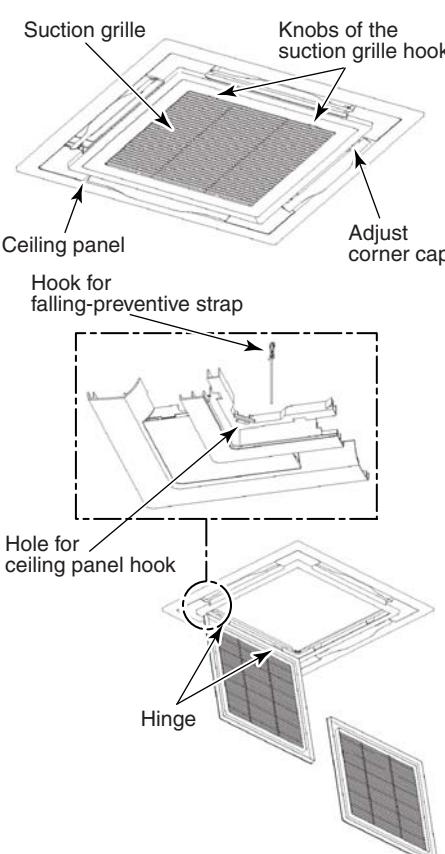
9-1. 4-Way Cassette Type

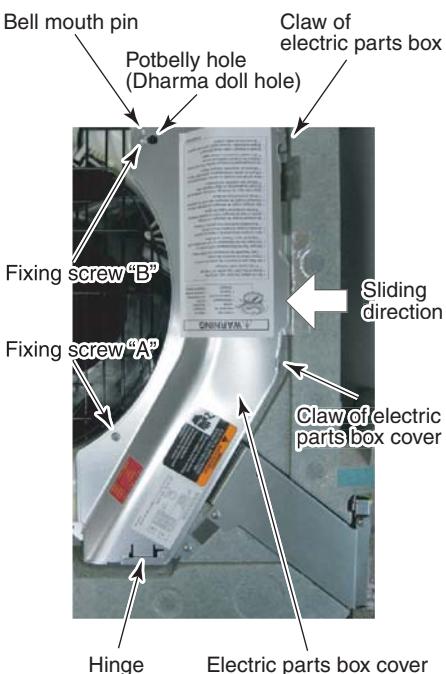
WARNING

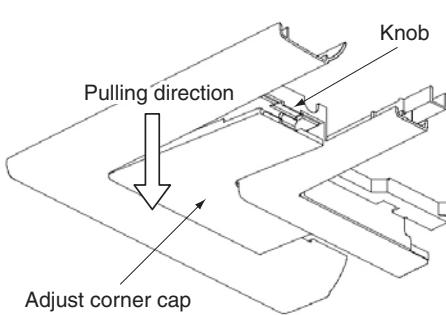
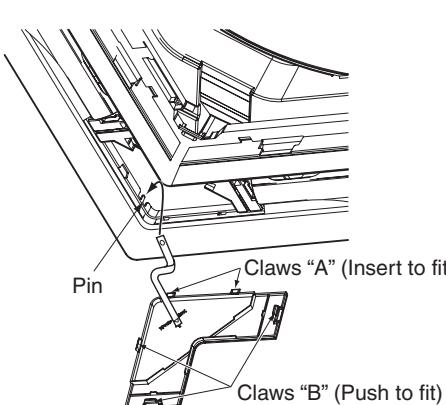
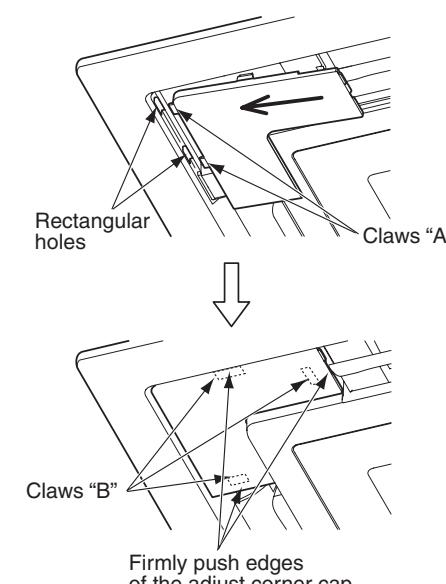
Be sure to turn off the power supply and the breaker and then start a work.

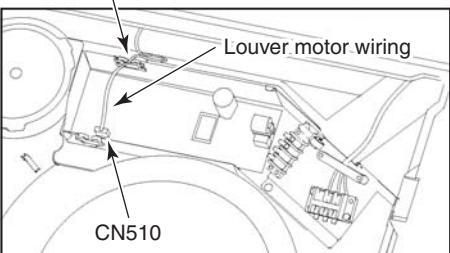
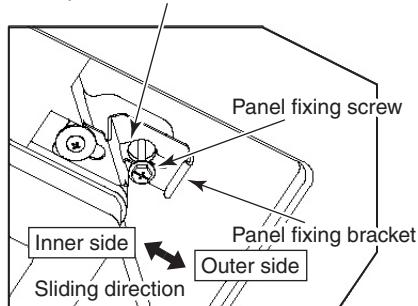
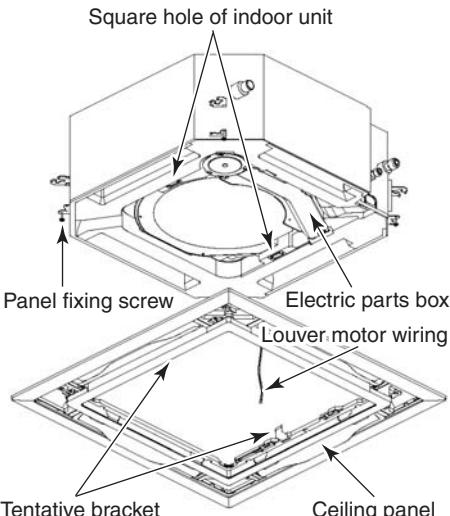
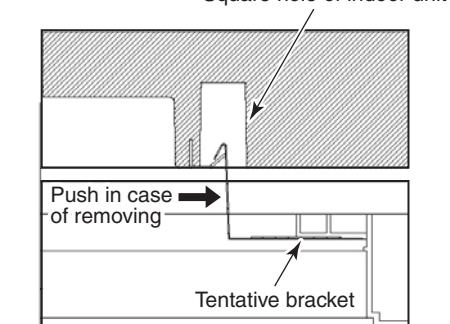
CAUTION

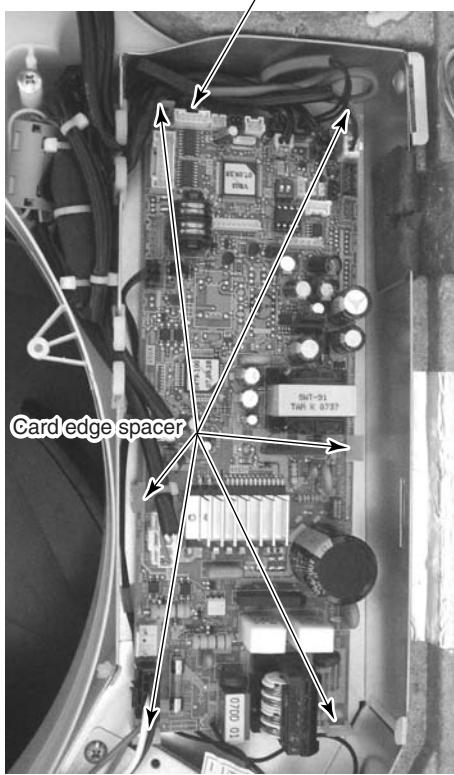
Be sure to put on the gloves at disassembling work; otherwise an injury will be caused by a part, etc.

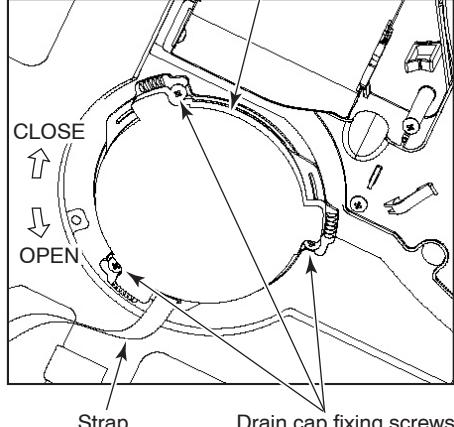
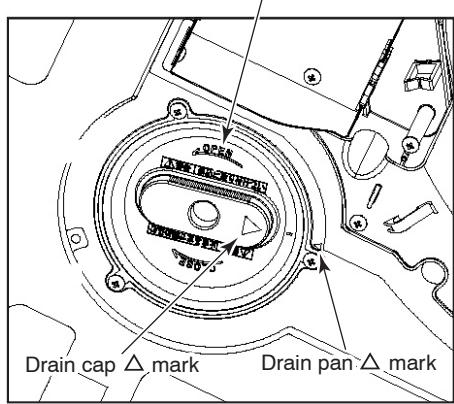
No.	Part name	Procedure	Remarks
①	Suction grille	<p>1. Detachment</p> <ol style="list-style-type: none">1) Slide the 2 knobs of the suction grille inward and then hang down the suction grille.2) Remove hook of the strap connecting the panel and the suction grille and then remove the suction grille. <p>2. Attachment</p> <ol style="list-style-type: none">1) Hook the suction grille to the panel.2) Attach hook of the suction grille strap to the panel as before.3) Close the suction grille, slide the knobs outward and then fix the panel.	

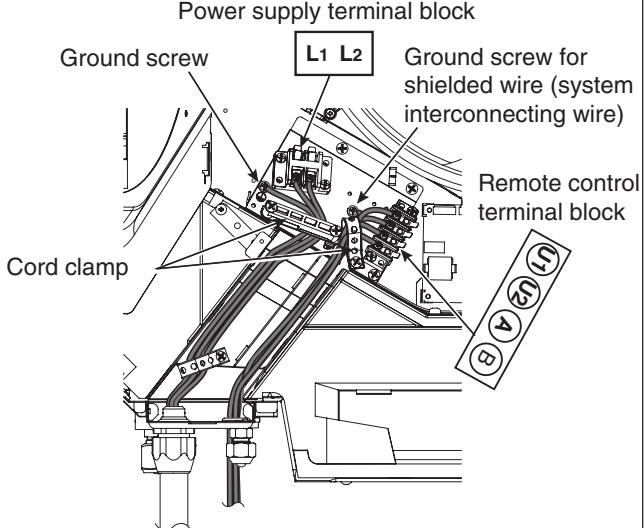
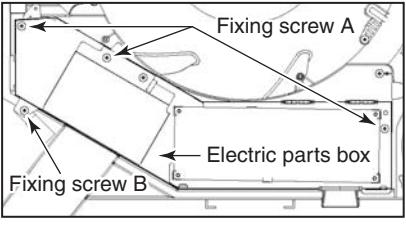
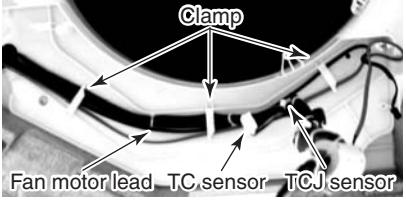
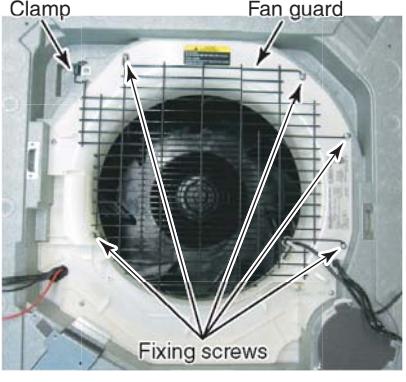
No.	Part name	Procedure	Remarks
②	Electric parts cover	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out work of Detachment of ① . 2) Remove the fixing screw "A" which fixes the electric parts cover and loosen the fixing screw "B". 3) Pull down the electric parts cover, remove pin of the bell mouth and then slide it to the arrow direction in order to open the claws and the electric parts box cover. 4) Remove the hinge unit and then remove the electric parts box cover. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Attach the hinge unit of the electric parts box cover. 2) Close the electric parts cover and slide it, hook claw of the electric parts box, claw of the electric parts box cover and the Dharma doll hole, and then insert pin of the bell mouth into hole of the electric parts box cover. 3) Tighten the fixing screws "A and B" and then fix the electric parts box cover. 4) Following to work of Attachment of ① , mount the suction grille as before. 	 

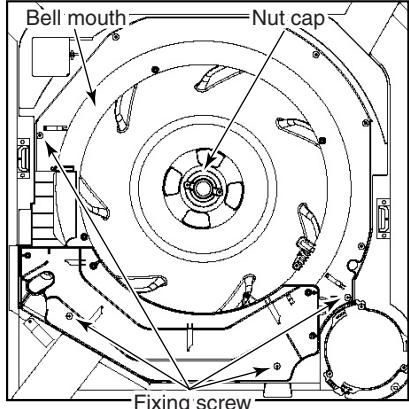
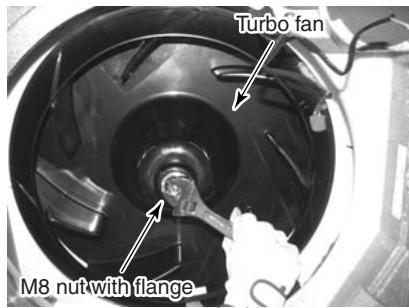
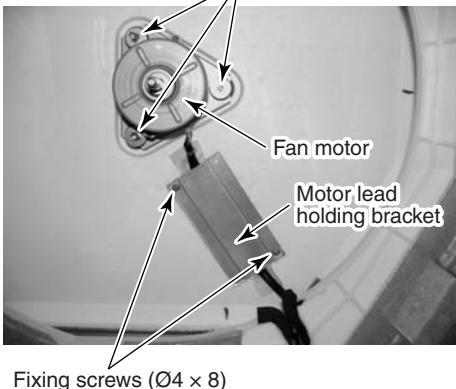
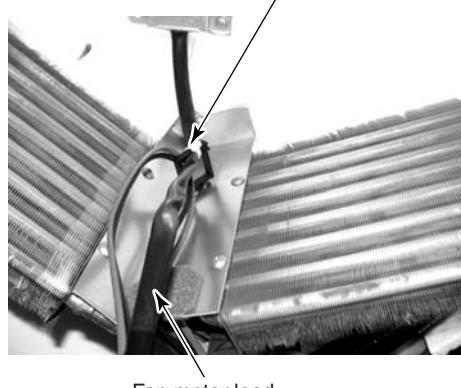
No.	Part name	Procedure	Remarks
③	Adjust corner cap	<p>1. Detachment</p> <p>1) Pull knob of the adjust corner cap to the arrow direction, remove strap of the adjust corner cap from pin of the panel and then remove all the 4 corners of the cap.</p> <p>NOTE :</p> <p>The knob is provided to only one side. Be sure to remove the cap of the knob side at first.</p> <p>2. Attachment</p> <p>1) Hook the strap of the adjust corner cap securely to the pin of the ceiling panel.</p> <p>2) Insert the 2 claws "A" of the adjust corner cap into rectangular holes of the ceiling panel in the direction of the arrow.</p> <p>3) Press the adjust corner cap so that the 3 claws "B" on the back of the cap are fitted.</p>	  

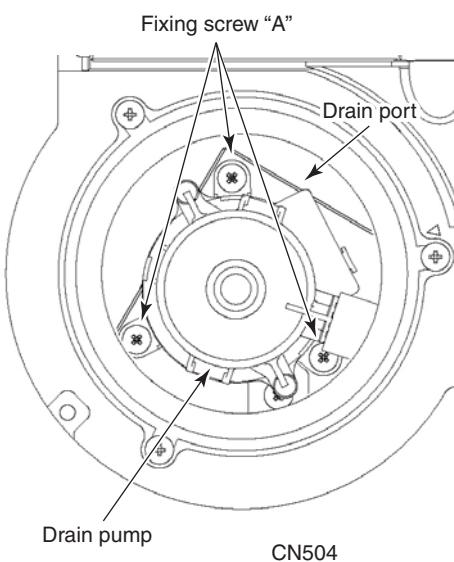
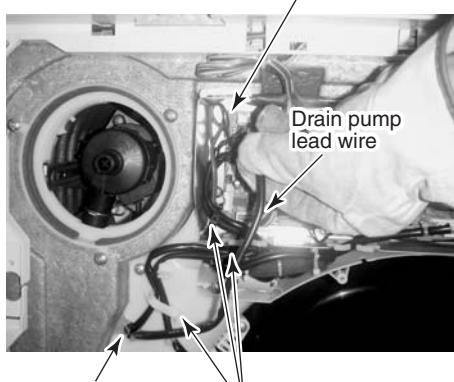
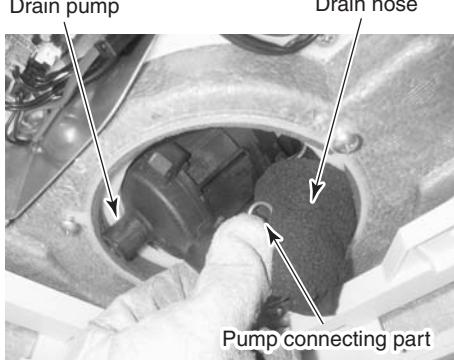
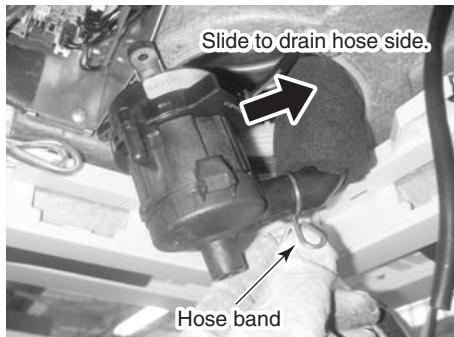
No.	Part name	Procedure	Remarks
④	Ceiling panel	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out works of Detachment of ② and ③ . 2) Remove the louver connector (CN510, White, 20P) connected to the control P.C. board and then remove the lead wire from the clamp. <p>NOTE :</p> <hr/> <p>Unlock the lock of the housing part and then remove the connector.</p> <hr/> <ol style="list-style-type: none"> 3) Loosen the panel fixing 4 screws. 4) Slide the panel fixing brackets (4 positions) outward. 5) Push the tentative bracket outward and then remove the ceiling panel. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Insert the tentative brackets (2 positions) of the ceiling panel into square holes of the indoor unit and then hook the panel tentatively. <p>NOTE :</p> <hr/> <p>The ceiling panel has the directional properties against the indoor unit. Direct the louver motor wire to the electric parts box side of the indoor unit.</p> <hr/> <ol style="list-style-type: none"> 2) Pass the head of the panel fixing screw through hole of the panel fixing bracket and then slide the panel fixing bracket inward. 3) Tighten in the panel fixing screw to fix the ceiling panel. 4) Following to work of Attachment of ③ , attach the adjust corner cap as before. 5) Connect the louver connector (CN510, White, 20P) as before and then fix the lead wire with clamp. 6) Following to work of Attachment of ② , mount the electric parts box cover and the suction grille as before. 	   

No.	Part name	Procedure	Remarks
⑤	Control P.C. board	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out work of Detachment of ② . 2) Remove connectors which are connected from the control P.C. board to the other parts and then remove wiring from the clamp. <p>CN510 : Louver motor (20P, White) CN34 : Float switch (3P, Red) CN504 : Drain pump (2P, White) CN100 : TC1 sensor (3P, Brown) CN101 : TC2 sensor (2P, Black) CN102 : TCJ sensor (2P, Red) CN104 : Room temp. Sensor (2P, Orange) CN333 : Fan motor power supply (5P, White) CN334 : Fan motor position detection (3P, White) CN82 : PMV (6P, Blue)</p> <p>NOTE :</p> <hr/> <p>Unlock the lock of the housing part and then remove the connector.</p> <hr/> <p>3) Unlock the locks of the card edge spacer (6 positions) and then remove the control P.C. board.</p> <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Fix the control P.C. board to the card edge spacer (6 positions) 2) Connect the connector removed in the above Detachment as before and then fix the wiring with the clamp. 3) Following to work of Attachment of ② , mount the electric parts box cover and the suction grille as before. 	

No.	Part name	Procedure	Remarks
⑥	Drain cap	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out work of Detachment of ① . 2) Loosen screws (3 positions) fixing the drain cap (outside) and then turn the drain cap to the arrow mark → (OPEN) direction to remove it. <p>NOTE :</p> <p>The drain cap is hung down because a strap is attached to it (outside).</p> <ol style="list-style-type: none"> 3) Loosen the cap by turn the drain cap (inside) for approx. 1 turn to OPEN → direction and then drain the drain water accumulated in the drain pan. <p>NOTE :</p> <p>Be sure to catch drain water using a bucket, etc. when loosening the drain cap.</p> <p>The insulating materials are adhered to the drain cap (outside) and opening part of the drain pan; be careful that they are not come off. If they are come off, stick them as before using double-faces tape, etc.</p> <ol style="list-style-type: none"> 4) Turn the drain cap once again to OPEN → direction to remove it. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Insert the drain cap (inside), turn it to the arrow mark → (CLOSE) direction until the position where "Clashed sound" is heard and it cannot be turned more over (Position where Δ mark of the drain pan matches with Δ mark of the drain cap (inside)) and then fix it. <p>NOTE :</p> <p>When attaching the drain cap (inside), remove dirt attached to the packing. And tighten in it noting so that the cap is not slantingly set. If attaching the drain cap as dust or dirt is attached or the cap is set slantingly, water leakage is caused.</p> <ol style="list-style-type: none"> 2) Turn the drain cap (outside) to the arrow mark → (CLOSE) direction and then attach it using the fixing screw as before. 3) Following to work of Attachment of ① , mount the suction grille as before. 	 

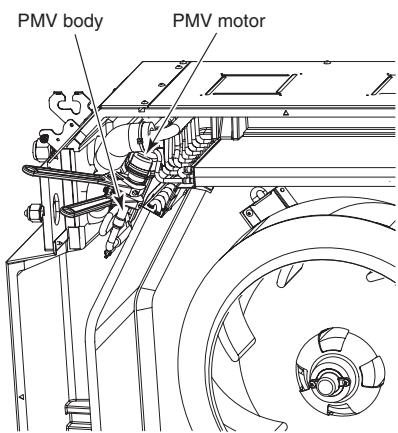
No.	Part name	Procedure	Remarks
⑦	Fan motor	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out work of Detachment of ② . 2) Remove the power supply wire and the remote control wire from the power supply terminal block and the remote control terminal block each. After then remove the cord clamps (2 positions) and a screw. 3) Remove connectors which are connected from the control P.C. board to the other parts and then remove each wiring from the clamp. <p>CN510 : Louver motor (20P, White) CN34 : Float switch (3P, Red) CN504 : Drain pump (2P, White) CN100 : TC1 sensor (3P, Blown) CN101 : TC2 sensor (2P, Black) CN102 : TCJ sensor (2P, Red) CN104 : Room temp. Sensor (2P, Orange) CN333 : Fan motor power supply (5P, White) CN334 : Fan motor position detection (3P, White) CN82 : PMV (6P, Blue)</p>  <p>NOTE :</p> <p>Unlock the lock of the housing part and then remove the connector.</p> <ol style="list-style-type: none"> 4) Remove the fixing screws "A and B", and then remove the electric parts box. (Fixing screw "A": M4, 0.39"(10 mm), 3 pcs, Fixing screw "B": M4, 0.31"(8 mm), 1 pc.)) 5) Remove the fan motor lead, TC sensor and TCJ sensor from clamp of the bell mouth. 6) Remove the fixing screws for the fan guard and then hang down it from the clamps. (M4, 0.39"(10 mm), 5 pcs.)) 	  

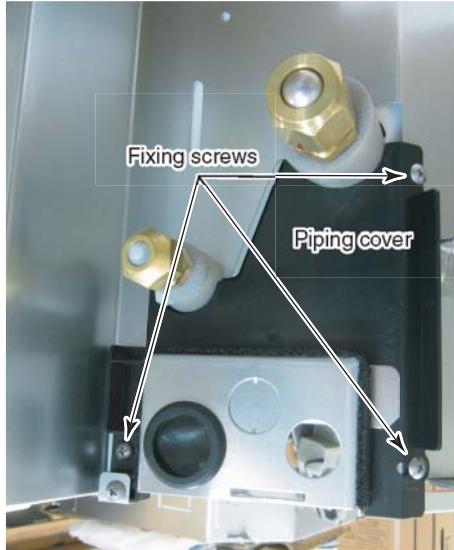
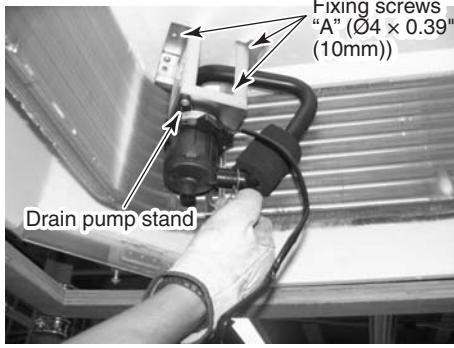
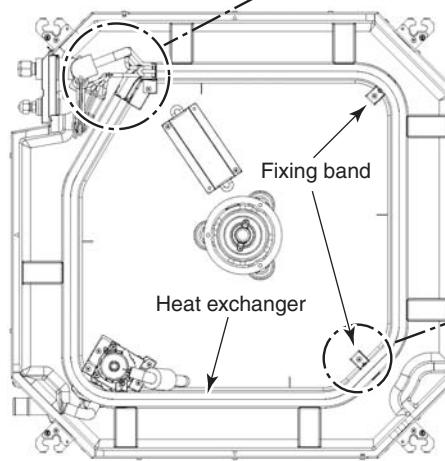
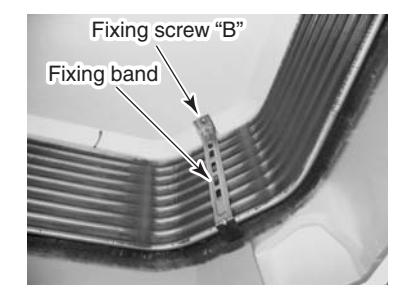
No.	Part name	Procedure	Remarks
⑦	Fan motor (Continued)	<p>7) Remove the fixing screws and then remove the bell mouth. (M4, 0.39"(10 mm), 8 pcs.)</p> <p>8) Remove the fixing screws and then remove the nut cap. (M4, 0.39"(10 mm), 2 pcs.)</p> <p>9) Remove the fixing nut and then remove the turbo fan. (M8 nut with flange, 1 pc.)</p> <p>10) Remove the fixing screws and then remove the motor lead holding bracket. (M4, 0.31"(8 mm), 2 pcs.)</p> <p>11) Cut the bundling band and then remove it from the clamp.</p> <p>12) Remove the fixing nut and then remove the fan motor. (M6 nut, 3 pcs.)</p> <p>2. Attachment</p> <p>1) Fix the parts as before in order of fan motor → motor lead holding bracket → turbo fan → nut cap → bell mouth, fan guard.</p> <p>NOTE :</p> <p>Fix the motor lead to the clamp without slack as before using bundling band. When fixing the turbo fan, be sure to match the D-cut of the fan boss with D-cut of the motor shaft. Using a torque wrench, fix the turbo fan and tighten it to $4.0^{+0.4}_{-0.1}$ ft·lbs($5.4^{+0.5}_{-0.2}$ Nm). Using torque wrench, fix the fan motor (at 3 positions) and tighten it to $3.6^{+0.4}_{-0.2}$ ft·lbs($4.9^{+0.5}_{-0.2}$ Nm).</p> <p>2) Fix the fan motor lead, TC sensor and TCJ sensor with the clamp of the bell mouth.</p> <p>3) Mount the electric parts box with the fixing screws "A and B". (M4, 0.39"(10 mm), 3 pcs. M4, 0.31"(8 mm), 1 pc.)</p> <p>4) Connect the connector, the power supply wire and the remote control wire as before, which were removed in Detachment work 2) and 3) in previous page, and then fix wiring with clamp.</p> <p>5) Following to work of Attachment of ②, mount the electric parts box cover and the suction grille as before.</p>	   

No.	Part name	Procedure	Remarks
⑧	Drain pump	<p>1. Detachment</p> <ol style="list-style-type: none"> Carry out works of Detachment of ② and ⑥. Remove the drain pump connector (CN504, White, 2P) connected to the control P.C. board and then remove the lead wire from the clamp. Remove the fixing screws "A" and then remove the drain pump. (M4,0.39"(10 mm), 3 pcs.) As shown in the right figure, first pull out the connecting part of the drain pump and the drain hose from the drain port and then take out the drain pump. Set direction of the knob of the hose band downward, slide it from the pump connecting part to the hose side and then remove the drain hose from the drain pump. Pass the connector of the drain pump lead wire through the wiring taking-out port and then take out the drain pump. <p>2. Attachment</p> <ol style="list-style-type: none"> Enter your hand into the drain port and pass the connector of the drain pump lead wire through the wiring taking-out port. Connect the drain hose to the drain pump as before. <p>NOTE :</p> <p>Insert the drain hose up to the end of the drain pump connecting part, apply band to the white mark position of the hose and then set the band knob upward.</p> <ol style="list-style-type: none"> Return the drain pump to the indoor unit and then mount it as before using the fixing screws "A". (M4,0.39"(10 mm), 3 pcs.) Connect the drain pump connector (CN504, White, 2P) to the control P.C. board and then fix it as before with the clamp. Following to words of Attachment of ⑥ and ②, mount the drain cap, the electric parts box cover and the suction grille as before. 	   

No.	Part name	Procedure	Remarks
⑨	Float switch assembly	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out works of Detachment of ⑦ and works from 1) to 7). 2) Remove the fixing screw and then remove the float switch assembly. (M4, 0.98" (25 mm), 1 pc.)) <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Mount the float switch assembly as before with the fixing screw. <p>NOTE :</p> <hr/> <p>When mounting, match hole of the float switch assembly with projection of the drain pan.</p> <hr/> <ol style="list-style-type: none"> 2) Mount the bell mouth and fan guard as before. (M4, 0.39" (10 mm), 8 pcs.)) 3) Following to works of Attachment of ⑦ and works from 2) to 5), attach the parts as before. 	
⑩	Drain pan	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out works of Detachment of ④ , ⑥ , ⑦ and works from 2) to 7). 2) Remove the wiring cover by removing the fixing screws. (M4, 0.31" (8 mm), 2 pcs.)) 3) Remove the wiring box by removing the fixing screw. (M4, 0.39" (10 mm), 1pc.)) 4) Remove the fixing screws to remove the drain pan. (M4, 0.39" (10 mm), 4 pcs.)) <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Fix parts as before in order of drain cap → drain pan → bell mouth → wiring box. 2) Following to works of Attachment of ⑦ and works from 2) to 4), attach parts as before. 3) Attach the wiring cover and then attach the electric parts box cover as before. 4) Following to works of Attachment of ④ , attach the parts as before. 	

No.	Part name	Procedure
⑪	PMV motor	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out work of 1.Detachment of ⑩ . 2) Remove the relay connector of PMV motor. 3) Peel the butyl rubber adhered to the main unit of the pulse motor valve (PMV) until PMV can be seen and then loosen the nuts fixing PMV motor with double spanner to remove PMV motor. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Mount PMV motor and relay connector as before. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE :</p> <p>Control the tightening torque for the PMV body and PMV motor to $5.8 \pm 0.7\text{ft-lbs}(7.84 \pm 0.98\text{Nm})$.</p> </div>

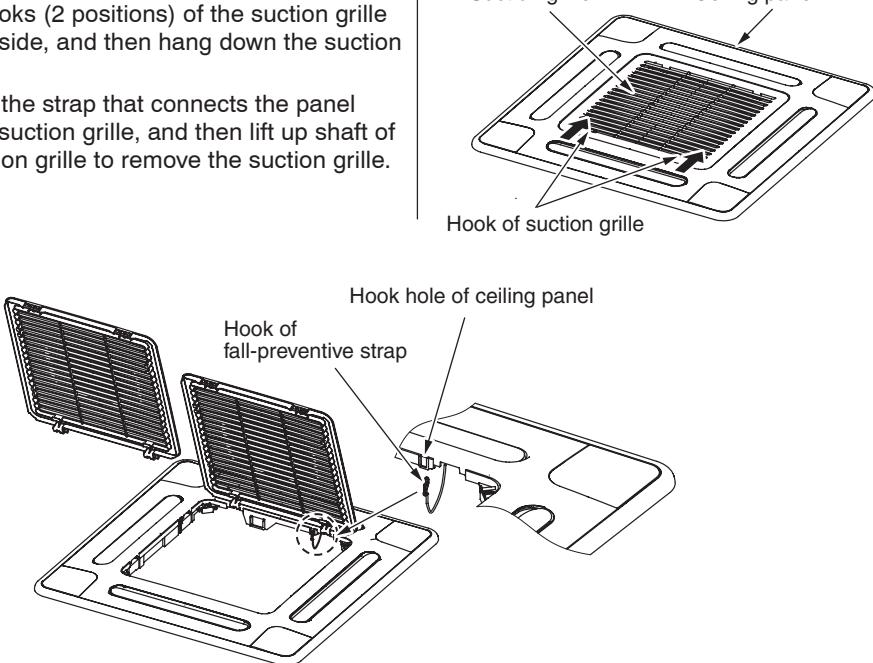
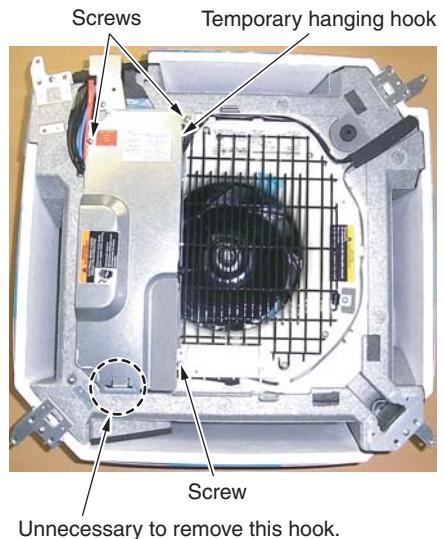


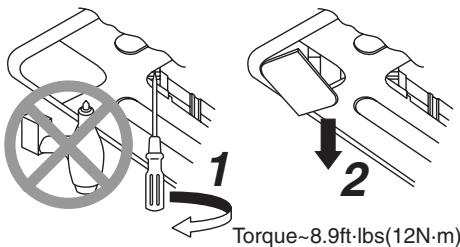
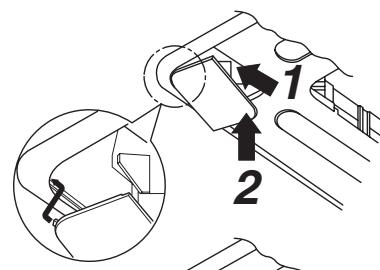
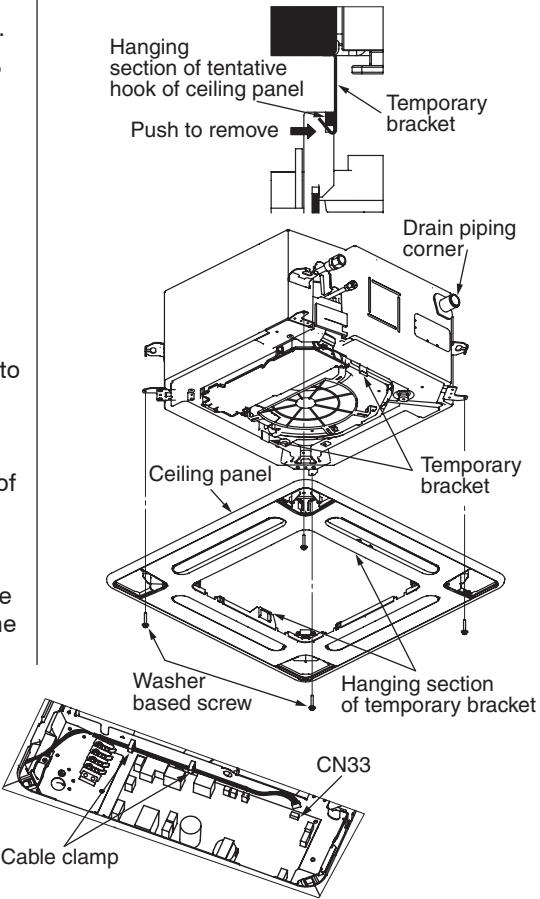
No.	Part name	Procedure	Remarks
⑫	Heat exchanger	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Recover the refrigerant gas. 2) Carry out work of Detachment of ⑩. 3) Remove refrigerant pipe at indoor unit side. 4) Remove the fixing screws and then remove the piping cover. (M4, 0.39" (10 mm), 3 pcs.) 5) Remove the drain hose from the drain pump and remove the fixing screws "A" to remove the drain pump stand. (M4, 0.31"(8 mm), 3 pcs.) 6) While pushing the heat exchanger, remove the fixing band, fixing screws "B" and the heat exchanger. (M4, 0.31"(8 mm), 3 pcs.) <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Mount the heat exchanger with the fixing band and the fixing screws "B". (M4, 0.31"(8 mm), 3 pcs.) 2) Fix the parts as before in order of drain pump stand → piping cover. 3) Connect the refrigerant pipe as before and then apply vacuuming. 4) Following to work of Attachment of ⑩ , attach the parts as before. 	   

9-2. Compact 4-Way Cassette Type

Preparing work:

1. Before work, be sure to stop the power supply of the air conditioner and turn off switch of the power supply breaker. (Otherwise an electric shock may be caused.)
2. Be sure to put on the gloves when working; otherwise an injury may be caused with parts sharp edges etc.

No.	Part name	Procedure	Remarks
①	Suction grille	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Slide hooks (2 positions) of the suction grille to inner side, and then hang down the suction grille. 2) Take off the strap that connects the panel and the suction grille, and then lift up shaft of the suction grille to remove the suction grille.  <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Hook shaft of the suction grille to the panel. 2) Hook strap of the suction grille to the original position of the panel. 3) Close the suction grille and slide the hooks outward to fix it. 	
②	Electric parts cover	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Perform work of procedure ① -1. 2) Take off screws ($\varnothing 4 \times 0.39"$(10mm, 3 pcs.)) fixing the electric parts cover. 3) Remove the electric parts cover from the temporary hanging hook of the electric parts cover, and then open the cover. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Close the electric parts cover and hook the cover hole to the temporary hanging hook. 2) Tighten the fixing screws. ($\varnothing 4 \times 0.39"$(10mm, 3 pcs.)) 	

No.	Part name	Procedure	Remarks
③	Adjust corner cover	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Perform work of procedure of ① -1. 2) Turn clockwise screws (4 positions) at the suction port corner until adjust corner cover rises up. <p>NOTE) When you work, keep the torque at below 8.9ft-lbs(12Nm). Do not use an electric screwdriver; otherwise the mechanism of adjust corner cover may be damaged and not be removed.</p> <ol style="list-style-type: none"> 3) Pull downward the risen-up part of adjust corner cover and remove it. 4) Remove the strap of adjust corner cover. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Attach the strap of adjust corner cover to the panel, hook claws of adjust corner cover to the panel corner, and then push the opposite side into the panel. 2) Turn screws (4 positions) of the suction port corner counterclockwise until bump between adjust corner cover and panel disappears. <p>NOTE) When you work, keep the torque at below 8.9ft-lbs(12Nm). Do not use an electric screwdriver; otherwise the mechanism of adjust corner cover may be damaged and not be removed.</p>	 <p>Torque~8.9ft-lbs(12N·m)</p>  <p>Torque~ 8.9ft-lbs (12Nm)</p>
④	Ceiling panel	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Perform works of procedure ② -1, and ③ -1. 2) Remove the flap connector (CN33, White, 5P) connected to the control P.C. board and then take off the lead wire from the clamp. <p>NOTE) Remove the connectors after unlocking the lock of the housing.</p> <ol style="list-style-type: none"> 3) Take off screws (M5, 4 pcs.) fixing the ceiling panel. 4) Push the temporary bracket to inner side to remove the ceiling panel. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Hook the panel to the temporary bracket of the drain pan of the main body. <p>NOTE) The panel has directionality. Therefore mount the panel according to the temporary bracket and the bracket mounting position.</p> <ol style="list-style-type: none"> 2) Tighten the fixing screws. (M5, 4 pcs.) 3) Connect flap connector of the ceiling panel to the connector (CN33, White, 5P) of the control P.C. board. 	

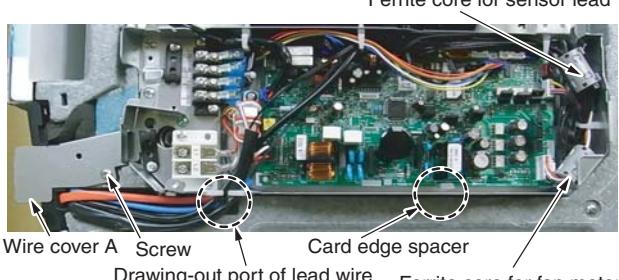
No.	Part name	Procedure	Remarks
⑤	Control P.C. board	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Perform works of procedure ② -1. 2) Remove the connectors connected from the control P.C. board to other parts. <ul style="list-style-type: none"> CN33 : Flap motor (5P, White) CN34 : Float switch (3P, Red) CN41 : Terminal block of remote control (3P, Blue) CN40 : Terminal block of crossover between inside and outside (2P, Blue) CN68 : Drain pump (3P, Blue) CN67 : Terminal block of power supply (3P, Black) CN100: TC1 sensor (3P, Brown) CN101: TC2 sensor (2P, Black) CN102: TCJ sensor (2P, Red) CN104: Room temp sensor (2P, Yellow) CN82 : PMV (6P, Blue) CN333: Fan motor power supply (5P, White) CN334: Fan motor position detection (5P, White) <p>NOTE) Remove the connectors after unlocking the lock of the housing.</p> <p>3) Unlock the lock of the card edge spacer (6 positions) and then remove the control P.C. board.</p>	

2. Attachment

- 1) Fix the control P.C. board to the card edge spacer. (6 positions)
- 2) Connect the connectors as original before being removed in item 1.

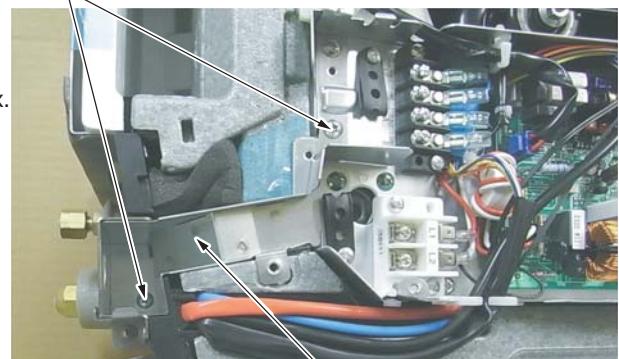
NOTE)

For drawing of each wire and position of ferrite core, perform wiring same as those before removing. If there is incomplete drawing of wire, short or water leakage of the parts may be caused.

No.	Part name	Procedure	Remarks
⑥	Electric parts box	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Perform works of procedure ④ -1. 2) Remove connectors of the lead wire connected to the following connectors of the control P.C. board. <p>CN33 : Flap motor (5P, White) CN34 : Float switch (3P, Red) CN68 : Drain pump (3P, Blue) CN100: TC1 sensor (3P, Brown) CN101: TC2 sensor (2P, Black) CN102: TCJ sensor (2P, Red) CN82 : PMV (6P, Blue) CN333: Fan motor power supply (5P, White) CN334: Fan motor position detection (5P, White)</p> <p>NOTE) Remove the connectors after unlocking the lock of the housing.</p> <ol style="list-style-type: none"> 3) Remove each lead wire from cord clamps in the electric parts box. 4) Remove the power supply wiring, remote control wiring, and control wiring. 5) Attach the wire cover A and wire cover B. ($\varnothing 4 \times 0.31"$(8mm, 3 pcs.)) 6) Take off 2 screws which fix the electric parts box and then remove the electric parts box. 	

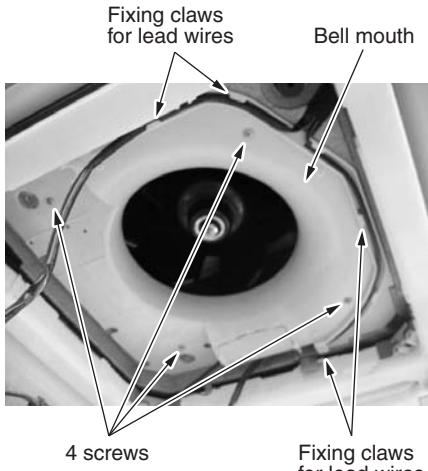
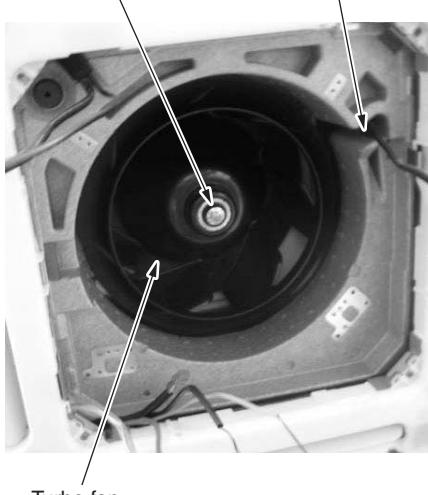
2. Attachment

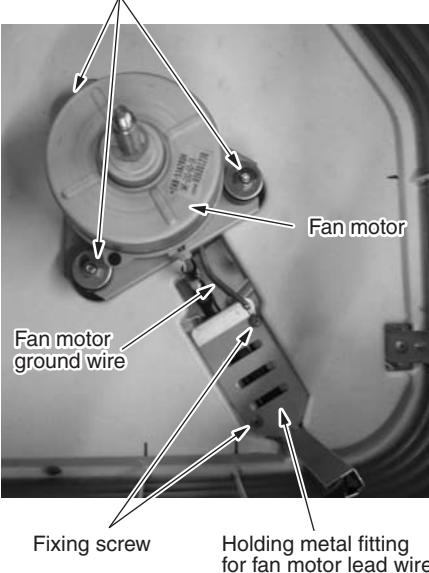
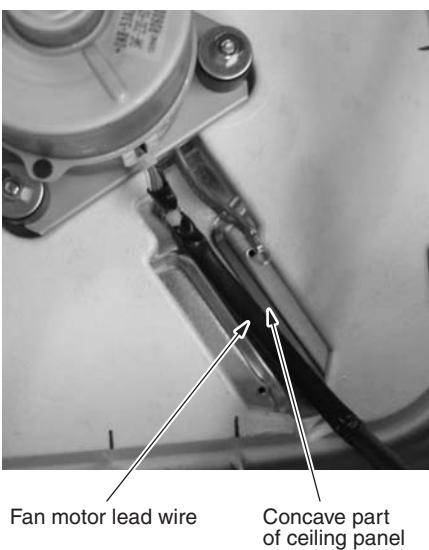
- 1) Tighten screws ($\varnothing 4 \times 0.31"$ (8mm, 2 pcs.)) fixing the electric parts box.
- 2) Connect the connectors as original before being removed in item 1.
- 3) Attach the wire cover B.
- 4) Connect the power supply wiring, remote control wiring, and control wiring as before.
- 5) Attach the wire cover A.

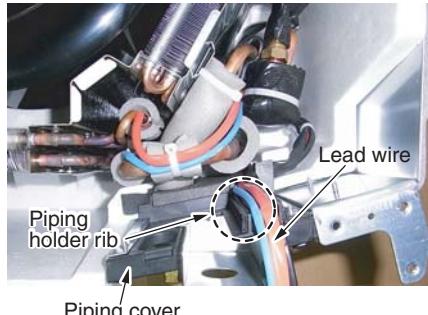
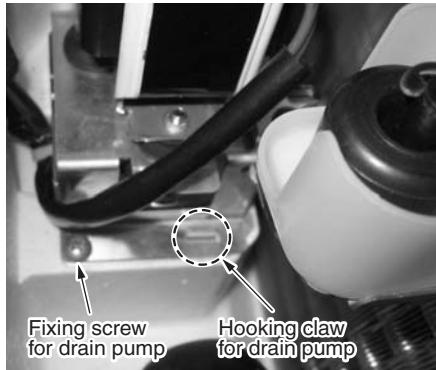


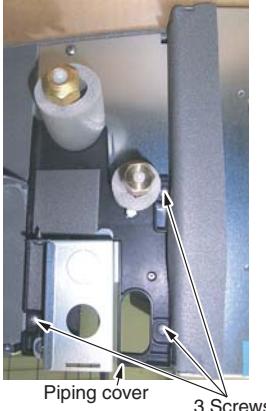
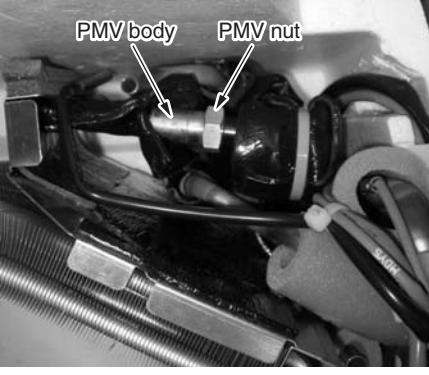
NOTE)

Referring to **NOTE** (5) in the previous page, connect wires as same as before wiring.

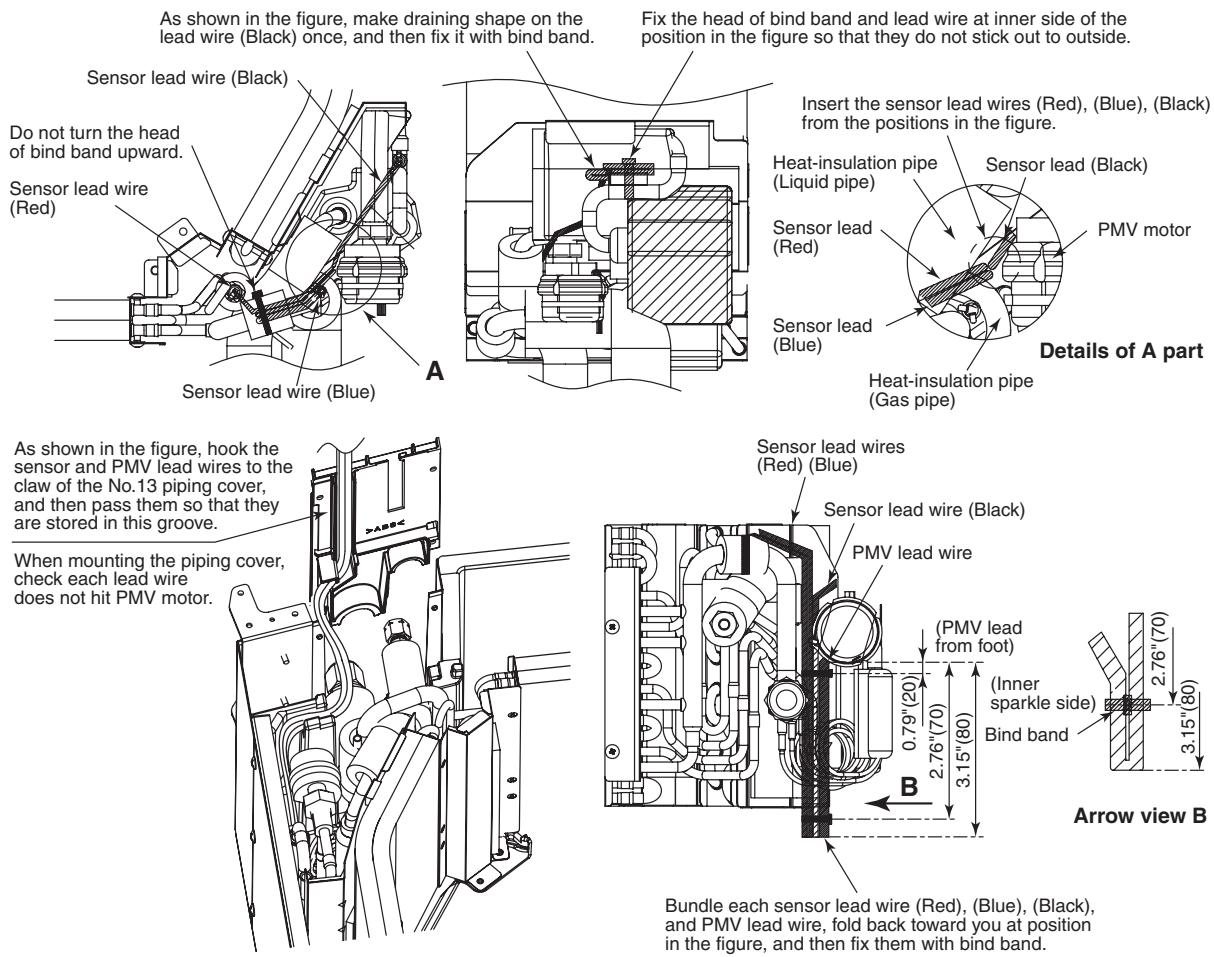
No.	Part name	Procedure	Remarks
⑦	Fan guard	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Perform work of procedure ① -1. 2) Take off screws and clamp fixing the fan guard. ($\varnothing 4 \times 0.39"$(10mm), [Screws for plastic molding] 3 pcs.) <p>NOTE) The specification of fixing screws for the fan guard differs from those of other fixing screws. Therefore keep them separately from other screws.</p> <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Attach screws and clamp for fixing the fan guard. ($\varnothing 4 \times 0.39"$(10mm), [Screws for plastic molding] 4 pcs.) 	
⑧	Bell mouth	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Perform work of procedure ⑥ -1. 2) Take off the lead wires of the drain pump, float switch, and fan motor from the bell mouth. 3) Take off fixing screws of the bell mouth. ($\varnothing 4 \times 0.31"$(8mm), 4 pcs.) <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Mount the bell mouth with screws. ($\varnothing 4 \times 0.31"$(8mm), 4 pcs.) 2) Perform wiring as original before being removed. <p>NOTE) Pinch lead wire of the drain pump and float switch with lead wire fixing claws of the bell mouth and perform wiring along the guide.</p>	
⑨	Turbo fan	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Perform work of procedure ⑧ -1. 2) Take off the nut (M6 nut 1 pc.) of the turbo fan. <p>NOTE) Use a box wrench for attachment and detachment of the turbo fan. If using a monkey wrench etc, the other parts may be damaged in work.</p> <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Insert the turbo fan into the fan motor so that boss of the turbo fan matches with cut surface of the fan motor, and then tighten it with nut. <p>NOTE) Tightening torque of turbo fan: $4.4 \pm 0.6\text{Nm}$ Apply looseness-preventing agent to the nut after tightening.</p>	

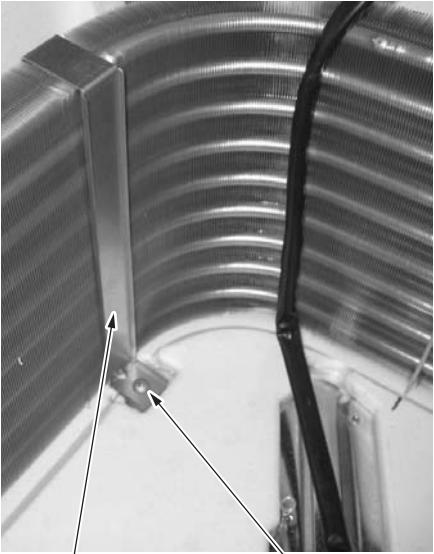
No.	Part name	Procedure	Remarks
⑩	Fan motor	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Perform work of procedure ⑨. 2) Take off screws fixed with lead holding bracket of the fan motor. (Ø4 × 0.31"(8mm), 2 pcs.) 3) Open wiring holding part of the fan motor lead holding bracket and then take off the fan motor lead wire from the bracket. 4) Take off fixing nuts for the fan motor to remove the fan motor.(M 3 pcs.) <p>NOTE) Use a box wrench for attachment and detachment of the fan motor fixing nuts; otherwise contact or damage for other parts may be caused.</p> <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Mount the fan motor with the fixing nuts. <p>NOTE) Tightening torque of turbo fan: $4.4 \pm 0.4 \text{ ft-lbs}(5.9 \pm 0.6\text{Nm})$ Apply looseness-preventing agent (as paints) to the nut after tightening.</p> <ol style="list-style-type: none"> 2) Attach the fan motor lead wire holder. <p>NOTE)</p> <ul style="list-style-type: none"> • For the fan motor lead wire, fix the lead wire holding bracket along concave part of the ceiling panel. (There is no catch-in of lead wire and ceiling panel.) • When fixing the lead wire bracket, tighten fan motor ground together with the lead wire. • For this work, do not use an electric screwdriver. • Take note the damage of ground terminal. <ol style="list-style-type: none"> 3) Bend the lead wire holding part and fix the fan motor lead wire. <p>NOTE) Be sure that the lead wire does not come to contact with the heat exchanger.</p>	  

No.	Part name	Procedure	Remarks
⑪	Drain pan	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Perform works of procedure ④ -1 and ⑧ -1. 2) Remove the drain cap and extract drain water accumulated in the drain pan. <p>NOTE) When removing the drain cap, be sure to receive drain water with a bucket, etc.</p> <ol style="list-style-type: none"> 3) Take off screws fixing the drain pan to remove the drain pan. ($\varnothing 4 \times 0.31$"(8mm), 4 pcs.) <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Insert the drain cap into the drain pan. <p>NOTE) Put a stick or others into hole at center of the drain cap, and then insert the drain cap until it strikes on the socket of the drain pan.</p> <ol style="list-style-type: none"> 2) Draw each lead wire to the correct positions, and then insert the drain pan into the main unit. <p>NOTE) Draw lead wires of the drain pump and the float switch along the guide of the cabinet. Insert the drain pan along the guides of sensors (TC1, TC2, TCJ) and PMV lead wire. The drain pan and each lead wire are not caught in; otherwise water leakage may be caused.</p> <ol style="list-style-type: none"> 3) Fix the drain pan with screws. ($\varnothing 4 \times 0.31$"(8mm), 4 pcs.) 	 
⑫	Drain pump assembly	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Perform work of procedure ⑪ -1. 2) Pick up the hose band and slide it from the pump connecting part to remove the drain hose. 3) Take off screws ($\varnothing 4 \times 0.31$"(8mm), 3 pcs.) fixing the drain pump assembly, and then move hooking claw (1 position) of the main body from the drain pump assembly to remove the drain pump assembly. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Fix the drain pump assembly as original. <p>NOTE) For fixing, use a hooking claw (1 position) and screws (3 positions). When screwing, be sure not to run on the hooking claw at main body side.</p> <ol style="list-style-type: none"> 2) Mount the drain hose and the hose band as original. <p>NOTE) Insert the drain hose up to the end of pump connecting part, and then put the band at white marked position of the hose.</p>	 

No.	Part name	Procedure	Remarks
(13)	PMV (Pulse Motor Valve)	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Perform work of procedure ⑪ -1. 2) Take off screws ($\varnothing 4 \times 0.31$"(8mm), 3 pcs.) fixing the piping cover to remove the piping cover. 3) Cut off binding band that binds the PMV lead wires. 4) Peel butyl rubber of PMV a little and remove PMV motor with a spanner wrench. <p>NOTE) For attachment and detachment of PMV motor, use a 0.55"(14mm) or 0.75"(19mm) spanner wrench.</p> <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Mount PMV motor with a spanner wrench. 2) Perform wiring of PMV and sensor lead as original. 3) Fix the piping cover with screws. 	 

<Details of sensor lead wire drawing>



No.	Part name	Procedure	Remarks
(14)	Heat exchanger	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Recover refrigerant gas. 2) Remove the refrigerant pipe at indoor unit side. 3) Perform work of procedure (11) -1. 4) Take off screws ($\varnothing 4 \times 0.31''$(8mm), 3 pcs.) fixing the piping cover to remove the piping cover. 5) While holding the heat exchanger, remove fixing band and fixing screws ($\varnothing 4 \times 0.31''$(8mm), 3 pcs.) and then remove the heat exchanger. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Mount parts in order, heat exchanger → fixing band → piping cover → drain pan → bell mouth → electric parts box as original. <p>NOTE) Arrange wires as original.</p> <ol style="list-style-type: none"> 2) Attach the removed connectors and wires as original. 3) Connect the refrigerant pipe as original, and then perform vacuuming. 	 <p>Fixing band</p> <p>Fixing band for heat exchanger</p>  <p>2 fixing screws for heat exchanger</p>

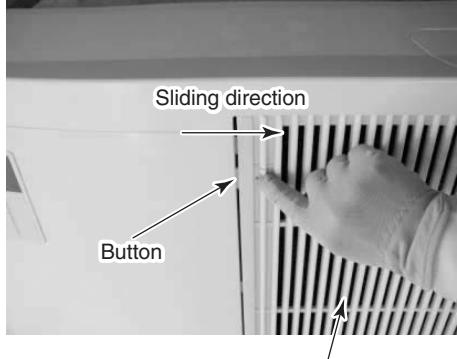
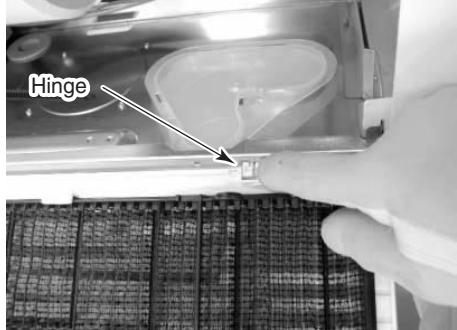
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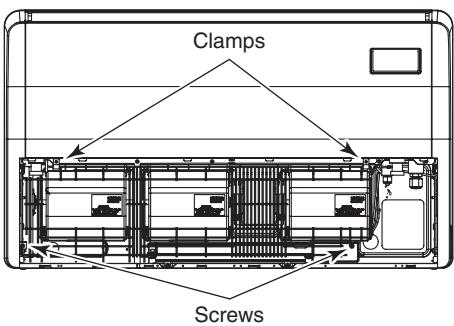
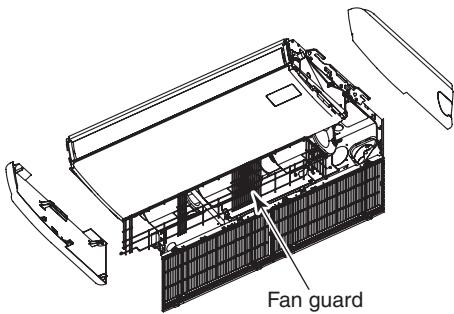
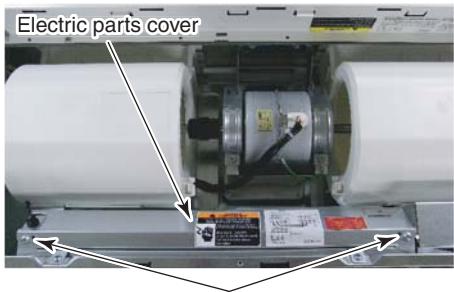
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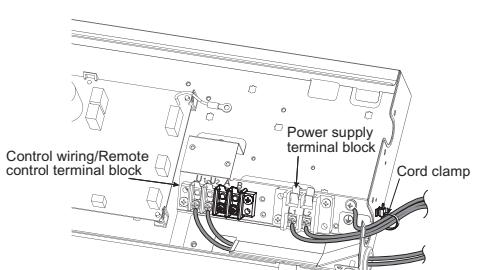
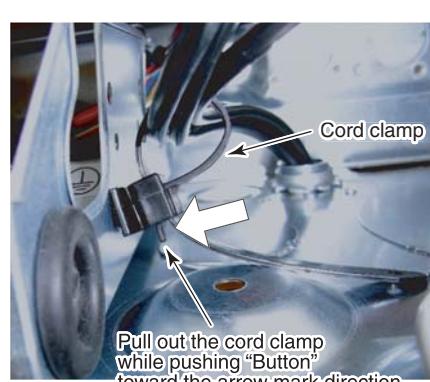
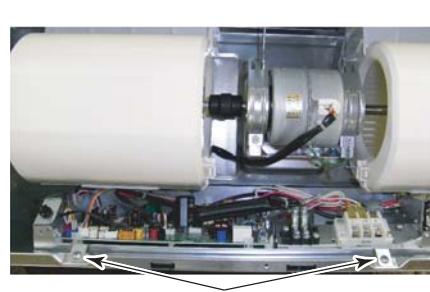
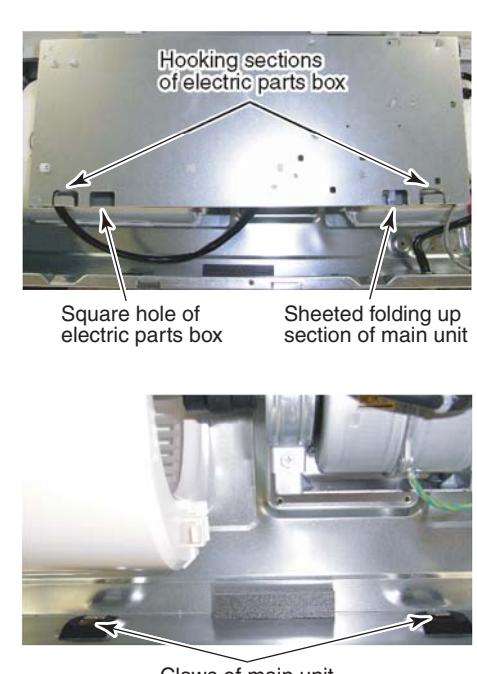
Stop the operation of the air conditioner and then turn off switch of the breaker.

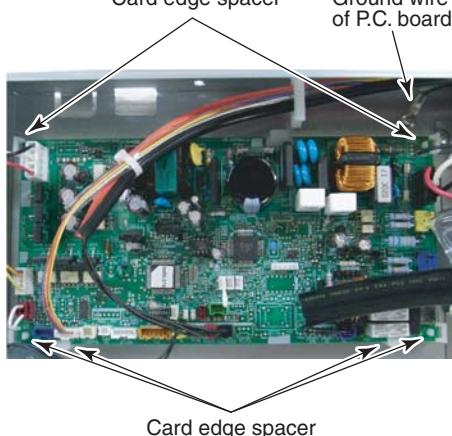
CAUTION

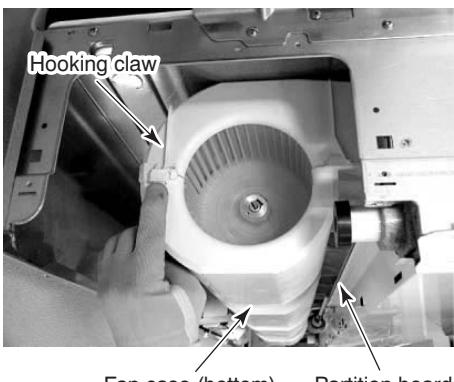
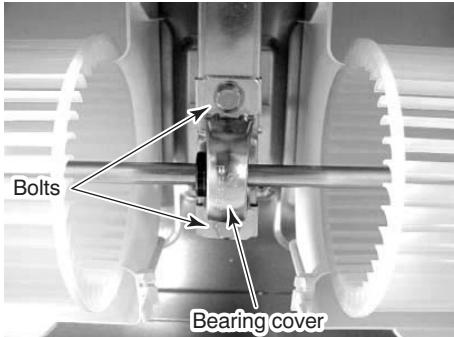
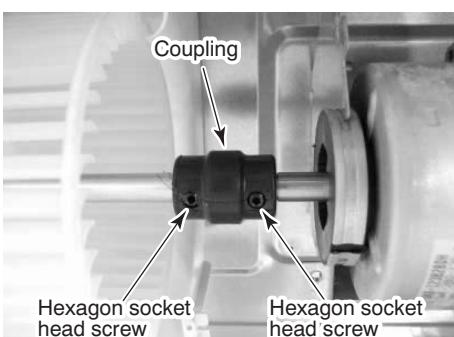
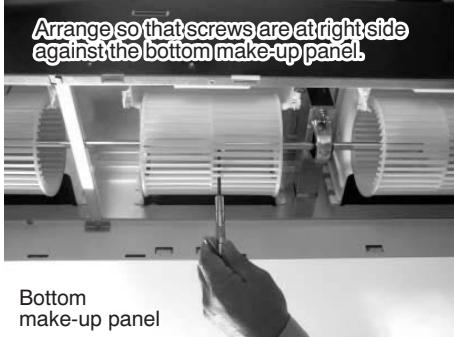
Be sure to put on the gloves at disassembling/assembling work; otherwise an injury will be caused by a part, etc.

No.	Part name	Procedure	Remarks
①	Suction grille	<p>1. Detachment</p> <p>1) Slide button of the suction grille toward the suction grille side and then hang down the suction grille.</p> <p>2) Remove hinge of the suction grille from the main unit to remove the suction grille.</p> <p>Remove the hinge while pushing the claw at the center part with a minus driver, etc.</p> <p>2. Attachment</p> <p>1) Attach hinge of the suction grille to the square hole of the main unit.</p> <p>Check that the claw is surely hooked on.</p> <p>2) Close the suction grille and then slide the button to the panel side to fix the suction grille.</p>	 

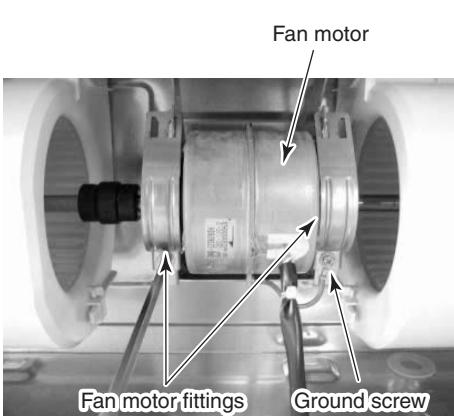
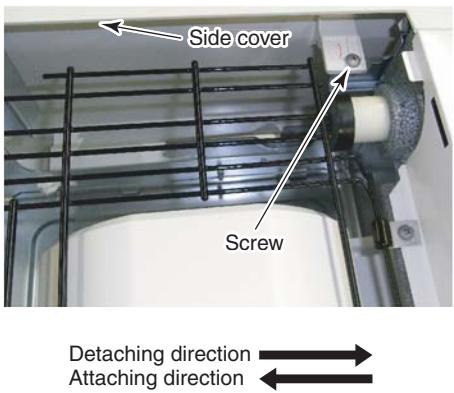
No.	Part name	Procedure	Remarks
②	Electric parts cover	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out work of Detachment of ① . 2) Remove the screws (2 pcs.) which are fixing the fan guard. <hr/> <p>CAUTION</p> <p>Remove the 2 screws fixing the fan guard and hang the fan guard with the clamps during a service.</p> <hr/> <ol style="list-style-type: none"> 3) Remove the electric parts cover by removing screws (2 positions) which fix the cover. (M4, 0.39"(10 mm), 2 pcs.) <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Insert the electric parts cover into back side of the electric parts box and then fix it with screws (2 positions). (M4, 0.39"(10 mm), 2 pcs.) <p>NOTE:</p> <p>Be careful that wires are not caught in the electric parts cover.</p> <hr/> <ol style="list-style-type: none"> 2) Attach the fan guard as before and then fix it with screws (2 positions). 3) Carry out work of Attachment of ① . 	  

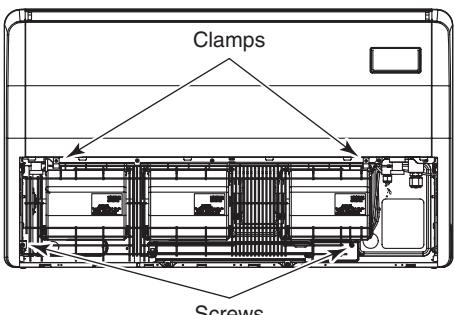
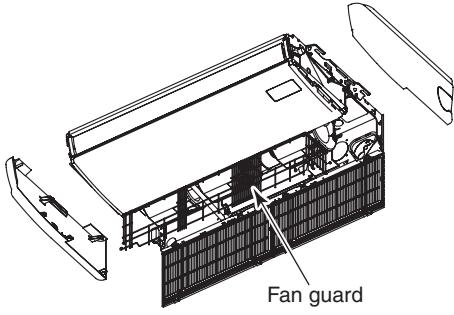
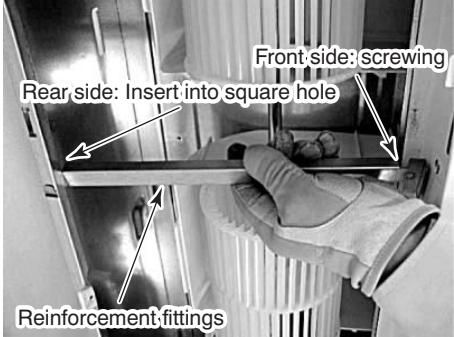
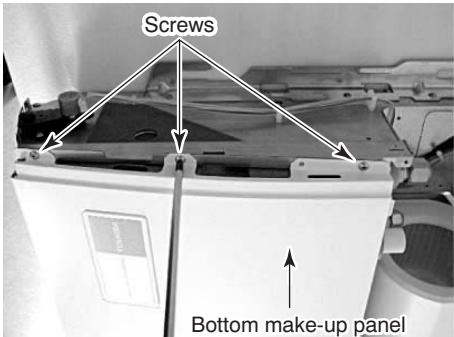
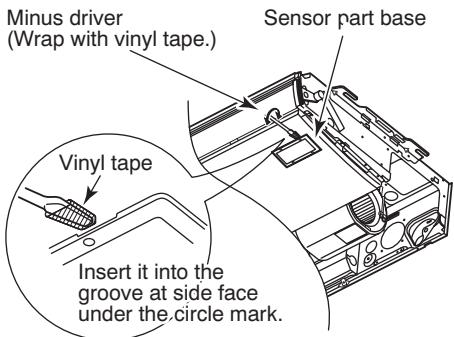
No.	Part name	Procedure	Remarks
③	Electric parts box	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out works of Detachment of ① and ② . 2) Remove the power supply wire and the remote control wire and control wires from the terminal blocks. 3) Remove the power supply wire from cord clamp at side of the electric parts box. 4) Remove screws (M4, 0.39"(10 mm), 2 pcs.) of the electric parts box and pull out downward. 5) Hook the hooking section temporarily at the rear side of the electric parts box to the sheet fittings part of the main unit. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Insert the square hole of the electric parts box into the claw of the main unit. 2) Attach screws (M4, 0.39"(10 mm), 2 pcs.) to the electric parts box. 3) Connect the power supply wire and the remote control wire and control wires as before. 4) Carry out works of Attachment of ① and ② . 	   

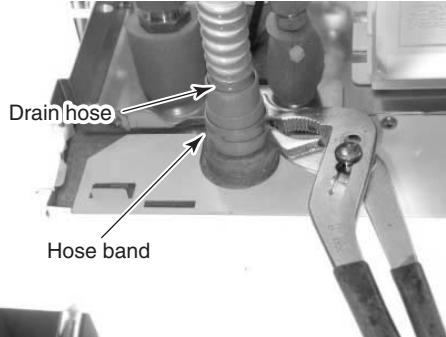
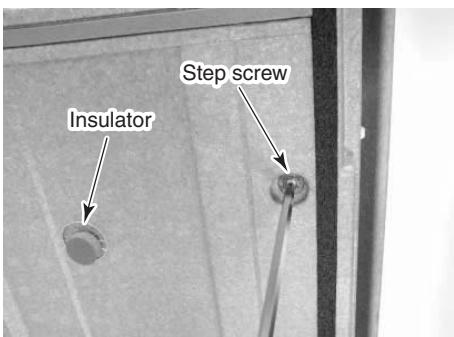
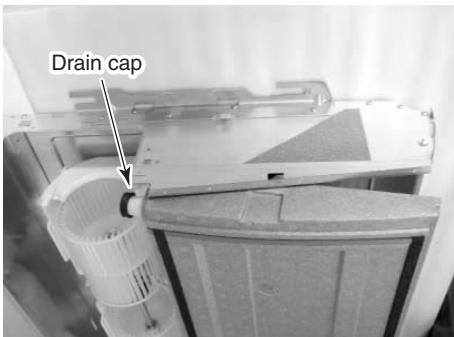
No.	Part name	Procedure	Remarks
④	Control P.C. board	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out works of Detachment of ①, ② and ③. 2) Remove connectors and ground wire which are connected from the control P.C. board to other parts. <p>NOTE :</p> <hr/> <p>Remove the connectors after releasing lock of the housing part.</p> <hr/> <p>CN33 : Louver motor (5P: White) CN41 : Remote control terminal (3P: Blue) (Remote control terminal block: 2P) CN67 : Power supply terminal (3P: Black) (Power supply terminal block: 3P) CN100 : TC1 sensor (3P: Brown) CN101 : TC2 sensor (2P: Black) CN102 : TCJ sensor (2P: Red) CN104 : Room temperature sensor (2P: Orange) CN333 : Fan motor power supply (5P: White) CN334 : Fan motor position detection (5P: White) CN82 : PMV (6P: Blue)</p> <p>3) Release locks of the card edge spacers (6 positions) and then remove the control P.C. board.</p> <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Fix the control P.C. board with the card edge spacers (6 positions). 2) Connect the connectors and ground wires as before, which were removed in Detachment work. <p>NOTE :</p> <hr/> <p>For the connectors, confirm there is no missing or connection failure.</p> <hr/> <p>3) Carry out works of Attachment of ①, ② and ③.</p>	 <p>Card edge spacer</p> <p>Ground wire of P.C. board</p> <p>Card edge spacer</p>

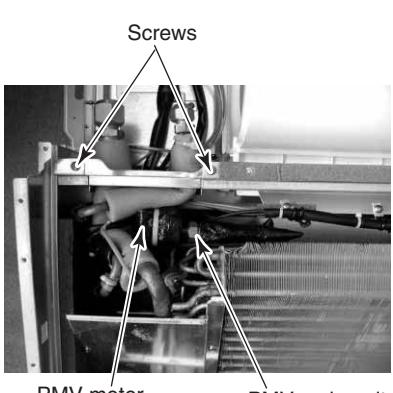
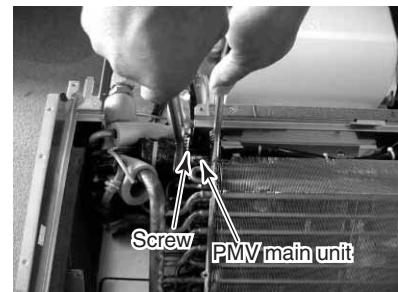
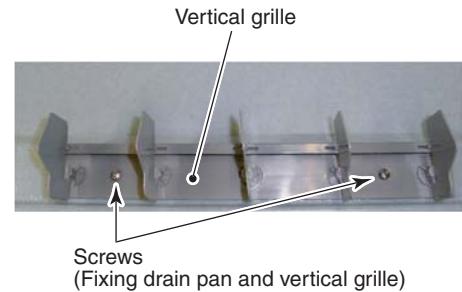
No.	Part name	Procedure	Remarks												
⑤	Fan, Shaft, Bearing, Coupling, Fan case	<p>Fan quantity and mounting construction</p> <table border="1"> <thead> <tr> <th>Model name</th> <th>Quantity</th> <th>Mounting construction</th> </tr> </thead> <tbody> <tr> <td>AP180</td> <td>2 fans</td> <td>Direct mounting to both sides of fan motor</td> </tr> <tr> <td>AP240</td> <td>3 fans</td> <td>Shaft is used and one side of shaft is supported by bearing.</td> </tr> <tr> <td>AP036 to AP042</td> <td>4 fans</td> <td>Shaft is used and the middle part of shaft is supported by bearing.</td> </tr> </tbody> </table> <p>1. Detachment</p> <p>NOTE :</p> <p>The following description is detachment method of AP036 to AP042 class as representative.</p> <hr/> <p>1) Carry out works of Detachment of ② and 1), 2).</p> <p>2) Remove the hooking claws at both sides of the fan case (bottom).</p> <p>3) Pull out and remove the fan case (bottom) from the partition panel.</p> <p>4) Remove the bearing from the main unit by removing the bolts (2 positions) which fix the bearing. (M8, 0.47"(12 mm), 2 pcs.) (SP300 to 420 models only)</p> <p>NOTE :</p> <p>There is a bearing spacer (2 pcs.) between the cover which fixes the bearing and the base. Be careful not to miss the bearing spacer.</p> <hr/> <p>5) Loosen the hexagon socket head screw and then remove the shaft together with the fan.</p> <p>6) Loosen the hexagon socket head screw and then remove the fan from the shaft.</p> <p>Loosen the hexagon socket head screws (2 positions) of bearing and then remove them from the shaft if necessary.</p>	Model name	Quantity	Mounting construction	AP180	2 fans	Direct mounting to both sides of fan motor	AP240	3 fans	Shaft is used and one side of shaft is supported by bearing.	AP036 to AP042	4 fans	Shaft is used and the middle part of shaft is supported by bearing.	   
Model name	Quantity	Mounting construction													
AP180	2 fans	Direct mounting to both sides of fan motor													
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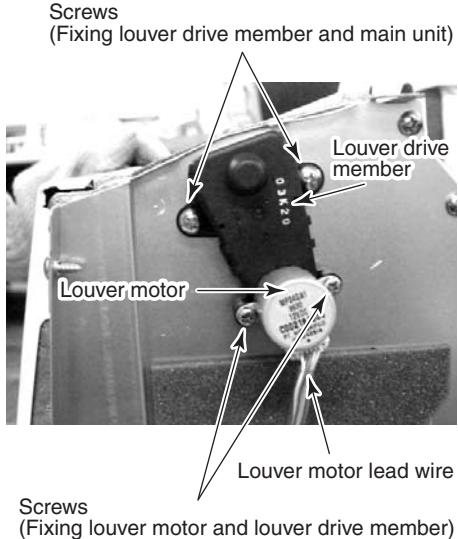
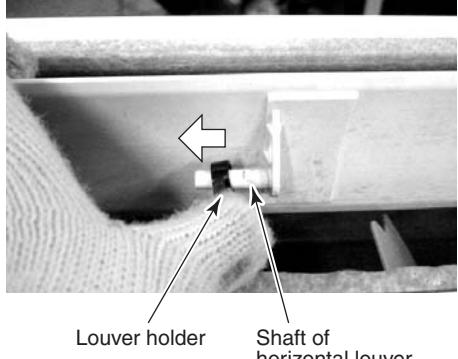
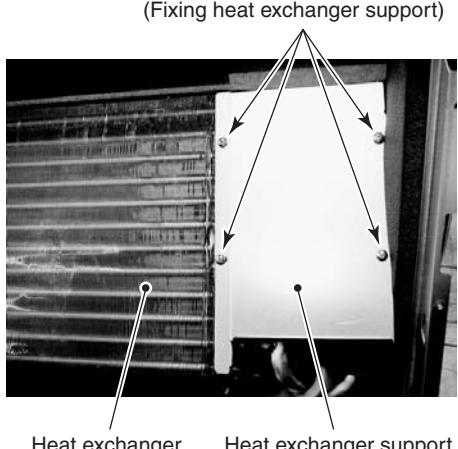
No.	Part name	Procedure	Remarks
⑤	Fan, Shaft, Bearing, Coupling, Fan case (Continued)	<p>2. Attachment</p> <p>1) Mount a fan to the shaft. Referring to the right photo, arrange the tightening screw at the right side of the fan against the make-up panel. On boss of the fan, there is attached a groove to escape a scratch received when mounting the hexagon socket head screw to the shaft. Mount it while aligning scratch of the shaft and groove of the fan. Tightening is carried out in the following work.</p> <p>2) If mounting of bearing to the shaft is required, mount it in the work of 1). (For only AP036 to AP042 only) A groove is provided on the shaft in order to match the mounting position with the bearing. Mount the bearing by aligning the single face of bearing to the groove and then fix it with hexagon socket head screws (2 positions).</p> <p>NOTE :</p> <p>Use a torque wrench for fixing with 1.8 to 2.5 ft·lbs(2.5 to 3.4Nm).</p> <p>3) Put the shaft which was inserted with the fan into the coupling. Tightening is carried out in the following work.</p> <p>4) Mount the bearing in the main unit as before.</p> <p>NOTE :</p> <p>Put into the bearing spacer between base and cover and then fix the bearing spacer with bolts (M8, 0.47"(12 mm), 2 pcs.)</p> <p>5) Fix the coupling with the hexagon socket head screws. A groove is provided on the shaft in order to match the mounting position with the coupling. Mount the coupling by aligning the single face of coupling to the groove and then fix it.</p> <p>NOTE :</p> <p>Use a torque wrench for fixing with 3.6 ft·lbs (4.9Nm) or more.</p> <p>6) Position the fan so that the fan locates at the center against the fan case (top) and then fix it with the hexagon socket head screws.</p> <p>NOTE :</p> <p>Use a torque wrench for fixing with 3.6 ft·lbs (4.9Nm) or more.</p> <p>7) Mount the fan case (top) as before. Finally, check the fan turns surely and smoothly.</p> <p>8) Carry out works 2) and 3) of Attachment of ② .</p>	<p>Arrange so that screws are at right side against the bottom make-up panel.</p> <p>Escape groove of screw</p> <p>Shaft</p> <p>Bearing</p> <p>Shaft</p> <p>Match the shaft groove and the end face of bearing and then fix the shaft with a hexagon socket head bolt.</p> <p>Coupling</p> <p>Shaft groove</p> <p>Shaft groove</p> <p>Fan case (top)</p> <p>Bearing</p> <p>Arrange so that the fan locates at the center of the fan case.</p>

No.	Part name	Procedure	Remarks
⑥	Fan motor	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out works of Detachment of ③ and ⑤ . 2) Remove wires and connectors which are connected from the control P.C. board to the fan motor. <p>NOTE :</p> <hr/> <p>Release the lock of the housing part and then remove the connectors.</p> <hr/> <p>CN333 : Fan motor power supply (5P: White) CN334 : Fan motor position detection (5P: White)</p> <ol style="list-style-type: none"> 3) Remove the screws of the fan motor fixing fittings. Ground screws are tightened together. (M5, 0.39"(10 mm), 2 pcs.) 4) Remove the fan motor while supporting it with hands so that the fan motor does not fall. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Mount the fan motor and the motor fixing fittings, tighten it together with ground wire and then fix them with the screws. 2) Connect the connectors as before, which were removed in works of Detachment. 3) Carry out work of Attachment of ③ and ⑤ . 	
⑦	Side cover	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out work of Detachment of ① . 2) Remove screws of the side cover. (One-side: M4, 0.47"(12 mm), with washer, 1 pc.) 3) Slide the side cover toward discharge direction to remove the side cover. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Slide the side cover toward sucking direction and mount it while inserting hooking claw of the side cover into the square hole at side of the main unit. 2) Attach screws to the side cover. (One-side: M4, 0.47"(12 mm), with washer, 1 pc.) 3) Carry out work of Attachment of ① . 	 

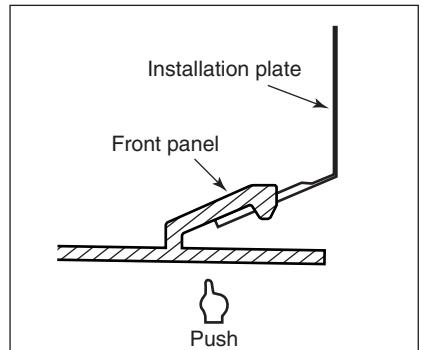
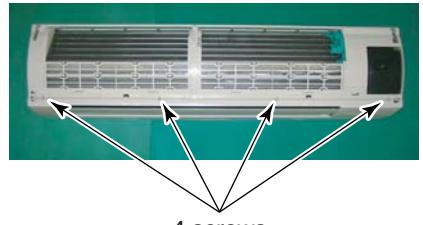
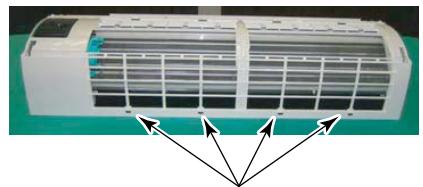
No.	Part name	Procedure	Remarks
⑧	Fan guard	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out work of Detachment of ① . 2) Remove the screws (2 pcs.) which are fixing the fan guard. 3) Remove the fan guard by removing screws which fix the clamp. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Using screws, mount the clamp with the fan guard. 2) Fix the fan guard with screws which were removed in the work of Detachment of ② . 3) Carry out work of Attachment of ① . 	 
⑨	Bottom make-up panel	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out works of Detachment of ⑦ and ⑧ . 2) For models of SP240 to 420 class, remove reinforcement fittings. (M4, 0.39"(10 mm), 1 pc.) Remove screws at the front side and remove them from the square hole at the rear side. The reinforcement bracket is not provided to models of SP180 class. 3) Remove screws at both sides. (One-side: M4, 0.39"(10 mm), 3 pcs.) 4) Remove screws at the fan side. (M4, 0.39"(10 mm), 1 pc.) 5) Float the bottom make-up panel downward while moving it toward the discharge port direction and then remove the panel. <p>NOTE :</p> <hr/> <p>Slide the panel horizontally from the drain pan at discharge side. If you remove the panel forcibly, it may be broken.</p> <hr/> <p>6) When removing base of the sensor part, as shown in the following figure, wrap the tip of minus driver with vinyl tape, insert it into the groove at the side face under the circle mark of the cover and then remove the base by winking out.</p> <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Mount the panel by sliding from discharge side along the drain pan. 2) Attach the screws (Reinforcement fittings (AP024 to AP042 class only)) which were removed in the work of Detachment. 3) Carry out works of Attachment of ⑦ and ⑧ . 	  

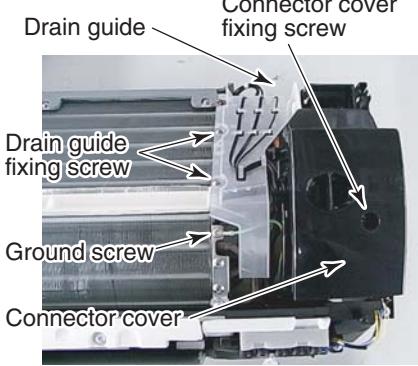
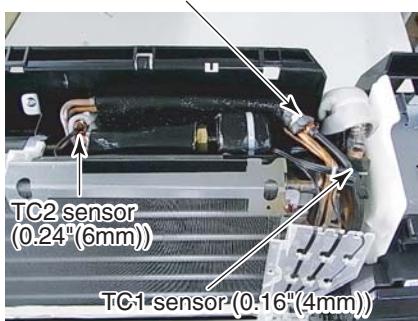
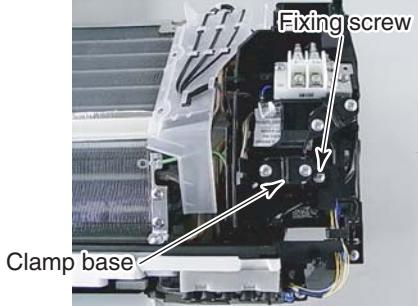
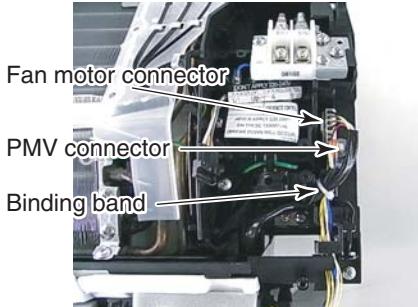
No.	Part name	Procedure	Remarks
⑩	Drain pan	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out work of Detachment of ⑨ . 2) Take off the drain cap and then extract drain water accumulated in the drain pan. <p>NOTE :</p> <hr/> <p>When taking off the drain cap, be sure to receive drain water by a bucket, etc.</p> <hr/> <ol style="list-style-type: none"> 3) Remove the drain hose while picking the hose band and move it out of connecting section of the drain pan. 4) Peel off insulator adhered to discharge side of the drain pan and then remove the sep screw inside. AP018 toAP024: Step screw, 1 pc. AP036 toAP042: Step screw, 2 pcs. The peeled-off insulator is used at attachment work. 5) Remove the drain pan while sliding it to discharge side. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Insert the drain cap surely up to the end of the drain pan. 2) Slide the drain cap from discharge side and then hang it surely to the sheeted hooking section at the fan side. 3) Attach step screw removed in the Detachment work and adhere the insulator over it. 4) Using the hose band, mount the drain hose removed in the Detachment work. 5) Carry out work of Attachment of ⑨ . 	  

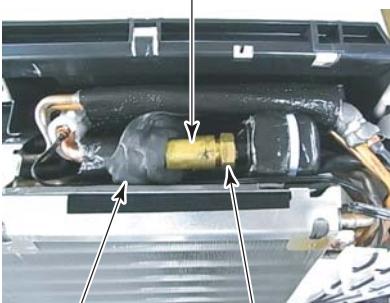
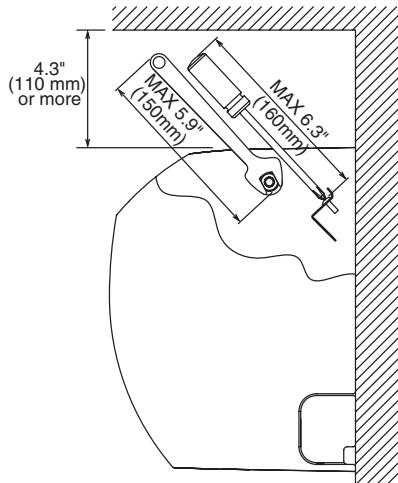
No.	Part name	Procedure	Remarks
⑪	Heat exchanger	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Recover the refrigerating gas. 2) Remove the refrigerant pipe at the indoor unit side. 3) Perform the detachment work in ⑨. Remove also the sensors. 4) Take off screws which fix the piping cover and then remove the piping cover. (Ø4 x 0.31"(8mm), 2 pcs.) 5) When replacing the PMV motor, peel off butyl rubber stuck on the PMV main unit until PMV main unit can become visible, loosen the nuts which fix the PMV motor and then remove the PMV motor. 6) Take off screws of the heat exchanger support while holding the heat exchanger and then remove the heat exchanger support. (Ø4 x 0.31"(8mm), 4 pcs.) side at opposite side of the heat exchanger 7) Take off screws of the heat exchanger at the opposite side of the heat exchanger support while holding the heat exchanger and then remove the heat exchanger. (Ø4 x 0.31"(8mm), 2 pcs.) <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Fix the heat exchanger, sensors and piping cover as before. 2) Perform the work procedure 2)-⑨. 3) Connect wire of the refrigerant as before and then perform vacuuming. 	  
⑫	Vertical grille	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out work of Detachment of ⑩ . 2) Remove the set screws (2 positions) of fixing vertical grille. 3) Remove the vertical grille. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Using screws, mount the vertical grille as before. 2) Carry out work of Attachment of ⑩ . 	

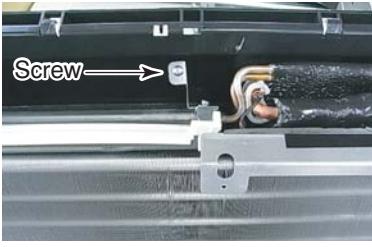
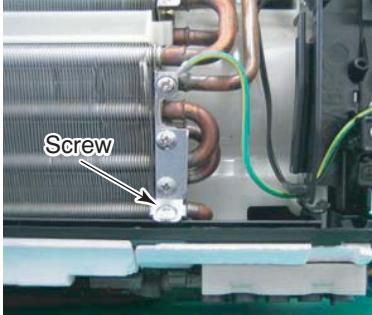
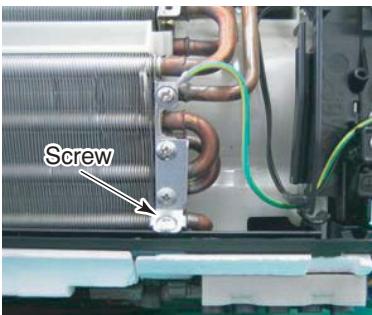
No.	Part name	Procedure	Remarks
(13)	Louver motor, Louver drive member	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out work of Detachment of ⑦ . 2) Remove connectors of the louver motor lead wire. 3) Remove the set screws (2 positions) and louver motor. 4) Remove the set screws (2 positions) and louver drive member. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Using screws, mount the louver drive member and the louver motor. Mount also the connectors of the louver motor lead wire. 2) Carry out work of Attachment of ⑦ . 	
(14)	Horizontal louver	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Push the louver holder toward arrow direction of right figure, and pull out the center shaft (AP036 to AP042: 2 positions) from louver holder. 2) Pull out the left and right shaft of horizontal louver. <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Match the shaft shape at the louver motor side with shape of the shaft hole and then insert the louver. 2) Insert the shaft at opposite side of the above 1) into the shaft hole. 3) Insert the central shaft into the louver holder. 	
(15)	TC1, TC2 TCJ sensor	<p>1. Detachment</p> <ol style="list-style-type: none"> 1) Carry out work of Detachment of ⑩ . 2) Remove the set screws (4 positions) and heat exchanger support. (M4, 0.39"(10 mm), 4 pcs.) 3) Pull out the sensor is inserted into pipe of the heat exchanger. <ul style="list-style-type: none"> • TC1 sensor: Blue (Tube color) • TC2 sensor: Black (Tube color) • TCJ sensor: Red (Tube color) 4) Remove the sensor connectors from P.C. board. (Refer to ④ .) <p>2. Attachment</p> <ol style="list-style-type: none"> 1) Insert the sensor into the sensor holder as before. 2) Mount sensor connectors to P.C. board. 3) Carry out work of Attachment of ⑩ . 	

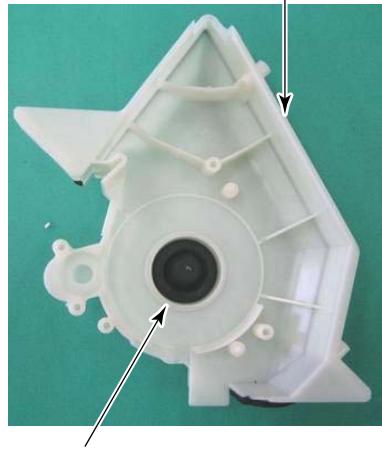
9-4. High Wall Type

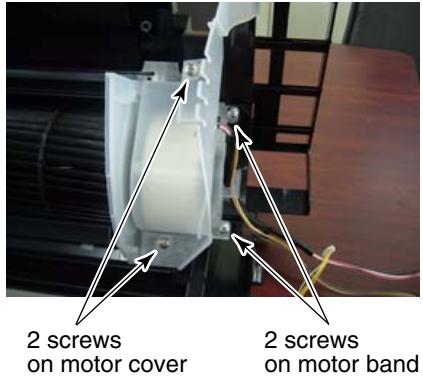
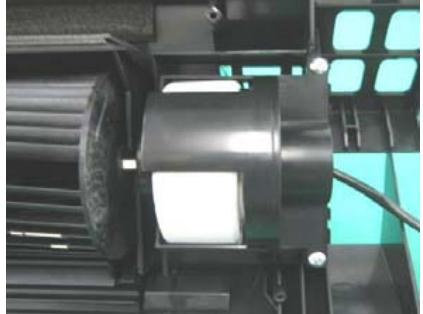
No.	Part name	Procedures	Remarks
①	Front panel	<p>1) Stop operation of the air conditioner and turn off its main power supply.</p> <p>2) Open the air inlet grille, push the arm toward the outside, and remove the grille.</p> <p>3) Push "PUSH" part under the front panel and remove hooks of the front panel from the installation plate.</p> <p>4) Remove the front panel fixing screws. (4 pcs.)</p> <p>5) Take off 4 hooks of panel from rear side.</p> <p><How to assemble the front panel></p> <p>1) Push 3 center positions and 2 lower center positions of the air outlet, and then hang the hanging hooks (4 pcs.) at the top side of the front panel to the rear plate.</p> <p>2) Tighten four screws.</p> <ul style="list-style-type: none"> Incomplete hanging or incomplete pushing may cause a dewdrops or generation of a fluttering sound. 	    

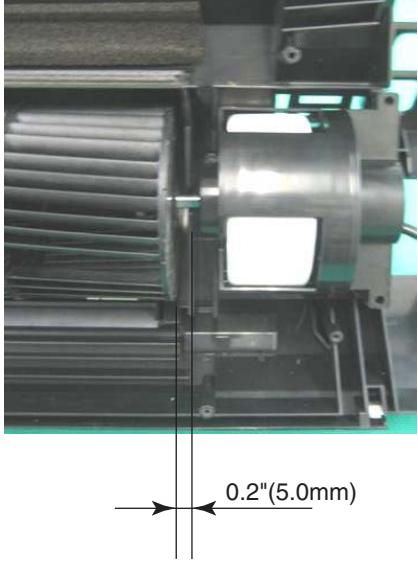
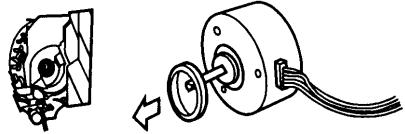
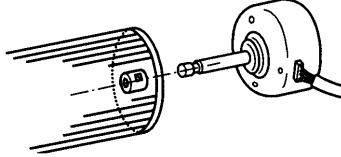
No.	Part name	Procedures	Remarks
②	Electric parts assembly	<p>1) Perform work of item ① .</p> <p>2) Take off PMV cover fixing screws (2 pcs.) and then remove PMV cover.</p> <p>3) Take off drain guide fixing screws (2 pcs.) and then remove the drain guide.</p> <p>4) Take off ground screw (1 pc.) fixed to the end plate.</p> <p>5) Pull out TC1, TC2 and TCJ sensors from the sensor holder of the heat exchanger. (When reassembling the electric parts, be careful to the attaching positions of every sensor. TC2 and TCJ sensors resemble in the shapes, so distinct them by marking, etc. when mounting them.)</p> <p>6) Take off the connector cover mounting screw (1 pc.) and then remove the connector cover.</p> <p>7) Take off the clamp base mounting screw (1 pc.) and then remove the clamp base.</p> <p>8) Remove the bundling band and then remove the fan motor connector (5P), the connector (5P) for louver motor and the connector (6P) for PMV motor from the P.C. board. (When mounting the P.C. board, fix the lead wires again by the bundling band.) Tighten the bundling band at the same position before removing.)</p> <p>9) Disengage the display unit by simply pushing at the top of the display unit.</p> <p>10) Remove the fixing screw that secures the electric parts box assembly, LED assembly and remove the assembly.</p> <p>Same as reassembly pace Addition of the following cautions</p> <p><Cautions in reassembling></p> <p>Mount the electric parts box to the main unit in the reverse order to the removing procedure. Determine the sensor positions and lead wire drawing as same as those before removing according to the figure.</p>	    

No.	Part name	Procedures	Remarks
③	PMV motor	<p><Cautions at work></p> <p>Using spanners by 0.67" (17mm) and 0.75" (19mm), remove the PMV motor. <AP0243 to AP0153></p> <p>Using spanners by 0.63" (16mm) and 0.75" (19mm), remove the PMV motor. <AP0123 to AP0073></p> <p>To avoid deformation of the pipes, do not use a monkey wrench. In case that the clearance to the ceiling is 4.3" (110mm), use a spanner with length by 5.9" (150 mm) or shorter.</p> <ol style="list-style-type: none"> 1) Perform work of item ① . 2) Perform work of item ② . 3) Remove the bundling band of PMV motor lead wire. 4) Pull off butyl of PMV main unit until the position shown in the right photo. 5) Using a spanner, remove PMV. <p><Caution in reassembling></p> <p>Determine PMV motor lead wire drawing-out position as same as that before removing.</p> <p>Return butyl rubber to the original position.</p>	<p><AP0243 to AP0153></p> <p>Spanner push-in part (Main unit side: 0.67"(17 mm))</p>  <p>Butyl rubber Spanner push-in part (Motor side: 0.75"(19 mm))</p> <p><AP0123 to AP0073></p> <p>Spanner push-in part (Main unit side: 0.63"(16 mm))</p>  <p>Butyl rubber Spanner push-in part (Motor side: 0.75"(19 mm))</p> 
④	Horizontal louver	<ol style="list-style-type: none"> 1) Remove shaft of the horizontal louver from the back body. (First remove the left shaft, and then remove other shafts while sliding the horizontal louver leftward.) 	

No.	Part name	Procedures	Remarks
⑤	Evaporator (Heat exchanger)	<p>1) Follow to the procedure in the item , .</p> <p>2) Remove the pipe holder from the rear side of the main unit.</p> <p>3) Remove 2 fixing screws at the left side of the end plate of the heat exchanger.</p>	
		<p>4) Remove 2 fixing screws on the heat exchanger fixing holder to separate the heat exchanger from the back body.</p> <p><AP0243 to AP0153></p>	 <p style="text-align: center;"><AP0243 to AP0153></p> 
		<p>5) Remove 4 fixing screws on the heat exchanger fixing holder to separate the heat exchanger from the back body.</p> <p><AP0123 to AP0073></p>	 <p style="text-align: center;"><AP0123 to AP0073></p> 

No.	Part name	Procedures	Remarks
⑥	Bearing	<p>1) Follow to the procedure in the item ④ .</p> <p>2) Remove the 2 screws used to secure the bearing base.</p> <p>3) Remove the bearing base.</p>	 <p>2 screws</p>  <p>Bearing base</p> <p>Bearing</p> <p><Caution at assembling></p> <ul style="list-style-type: none"> • If the bearing is out from the housing, push it into the specified position and then incorporate it in the main body.

No.	Part name	Procedures	Remarks
⑦	Fan motor	<p>1) Follow to the procedure till item ④ .</p> <p>2) Loosen the set screw of the cross flow fan.</p> <p>3) Remove 2 fixing screws of the motor cover and them remove the motor cover.</p> <p>4) Remove 2 more fixing screws of the motor band and remove the motor band.</p> <p>5) Pull the fan motor outward.</p>	  

No.	Part name	Procedures	Remarks
⑧	Cross flow fan	<p><Caution at reassembling></p> <p>1) To incorporate the fan motor, remove the fan motor rubber (at shaft core side), incorporate the motor into the position in the following figure, and then install the fan motor.</p> <p>• Install the cross flow fan so that the right end of the 1st joint from the right of the cross flow fan is set keeping 5 mm from wall of rear plate of the main unit.</p> <p>• Holding the set screw, install the cross flow fan so that U-groove of the fan motor comes to the mounting hole of the set screw.</p> <p>• Perform positioning of the fan motor as follows:</p> <p>• When assembling the fan motor, the fan motor must be installed in such a way that the fan motor leads will be taken out is positioned at the bottom front.</p> <p>• After assembling the 2 fixing screws of the motor band (right) into the main body, position the fan motor, insert it, and then secure the motor band (right) using the 2 fixing screws.</p>	  

10. P.C. BOARD EXCHANGE PROCEDURES

10-1. 4-Way Cassette type , Compact 4-Way Cassette type, Ceiling type

Part code	Model type	P.C. board type
431-6V-447	MMU-AP*** 2H2UL series	MCC-1570
431-6V-445	MMU-AP ***1MH2UL series MMC-AP *** 1H2UL series	MCC-1402

Points to Note When Replacing Indoor P.C. Board Assembly

The electrically erasable programmable read-only memory (hereinafter EEPROM, IC503, or IC10) mounted on an indoor P.C. board holds important setting data, including the type and capacity codes intrinsic to the model (set at the factory), as well as the line/indoor/group addresses, high ceiling adjustment setting and the like (during installation, either automatically or manually). Proceed with the replacement of an indoor P.C. board assembly in accordance with the procedure described below.

After completion of the work, check the settings again, including the indoor unit No. and group header/follower designation, and confirm the integrity of the refrigerating cycle by conducting a test operation, etc.

<Replacement procedure>

Method 1

If it is possible to turn on the indoor unit and read the setting data from the P.C. board to be replaced via a wired remote control -

Reading EEPROM data: **Procedure 1**



Replacing P.C. board and turning on power: **Procedure 2**



Writing EEPROM data in new EEPROM: **Procedure 3**



Resetting power supply (applicable to all indoor units connected to remote control in case of group operation)

Method 2

If it is not possible to read the setting data due to the failure of the EEPROM itself -

Replacing P.C. board and turning on power: **Procedure 2**



Writing EEPROM data on basis of information supplied by customer (e.g. high ceiling adjustment setting and optional connection setting): **Procedure 3**



Resetting power supply (applicable to all indoor units connected to remote control in case of group operation)

Procedure 1: Reading Setting Data from EEPROM

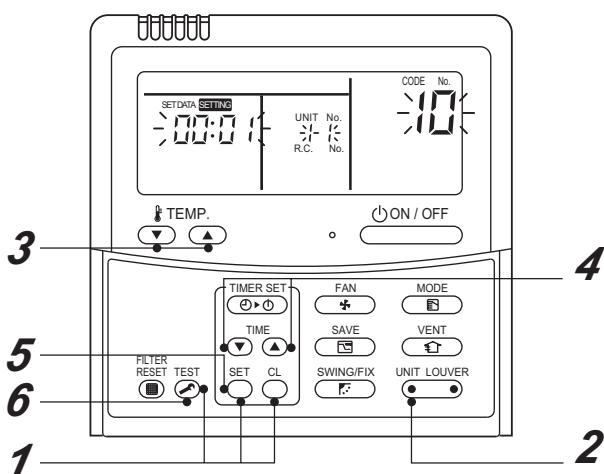
(Read the setting data from EEPROM, including both the factory settings and any modifications made to them on site.)

- 1 Push the  +  +  buttons simultaneously and hold for at least 4 seconds. **1** (This number corresponds to the same number shown on the Remote Control Operation Diagram.)
 * In the case of group control, the unit No. displayed first is the indoor unit No. of the header unit. At the same time, the CODE No. (DN code) 10 is displayed, and the fan of the selected indoor unit comes on, with the louver swinging, depending on the model.
- 2 Each time the  button (button of left side) is pushed, one of the indoor unit No. under group control is displayed in turn. **2**
 * The fan of the selected indoor unit comes on, with the flaps swinging, depending on the model.
- 3 The  button allows you to move the CODE No. (DN code) up/down by one place. **3**
- 4 First, change the CODE No. (DN code) from  to . (To set filter sign lighting time)
 Jot down the setting data displayed.
- 5 Change the CODE No. (DN code) using the  button.
 Again, jot down the setting data displayed.
- 6 Repeat step 5 until all the setting data has been jotted down. (See the CODE No. list.)
 * CODE No. (DN code) go from  to  with a few gaps along the way.
- 7 When finished, push the  button to bring the system back to normal off state. **6**
 (It takes the system about 1 minute to become responsive to remote control operation.)

CODE No. (DN code) necessary at minimum

DN	Contents
10	Type
11	Indoor unit capacity
12	Line address
13	Indoor address
14	Group address

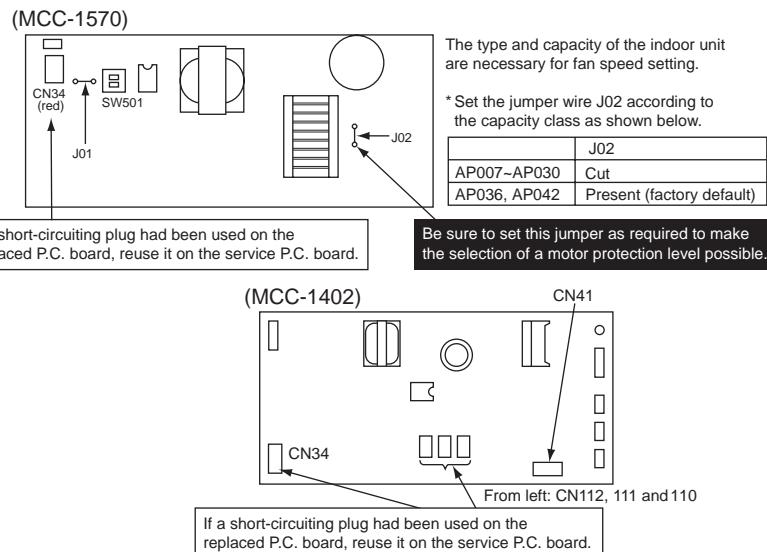
The type and capacity of the indoor unit are necessary for fan speed setting.



Procedure 2: Replacing P.C. Board

1 Replace the faulty P.C. board with a service P.C. board.

Be sure to replicate the old jumper setting (removal), switch setting (SW501), and connector short-circuit setting (e.g. CN34) on the service P.C. board. (See the diagram at below.)



2 It is necessary to establish a one-to-one correspondence between the indoor unit being serviced and the remote control.

Turn on the indoor unit using one of the methods described below according to the system configuration.

(1) Single (stand-alone) operation

Turn on the indoor unit and proceed to **Procedure 3**.

(2) Group operation

A) If it is possible to selectively turn on the indoor unit being serviced

Turn on the indoor unit being serviced and proceed to **Procedure 3**.

B) If it is not possible to selectively turn on the indoor unit being serviced (**Case 1**)

a) Temporarily disconnect the group control wiring from terminals A and B of the indoor unit being serviced.

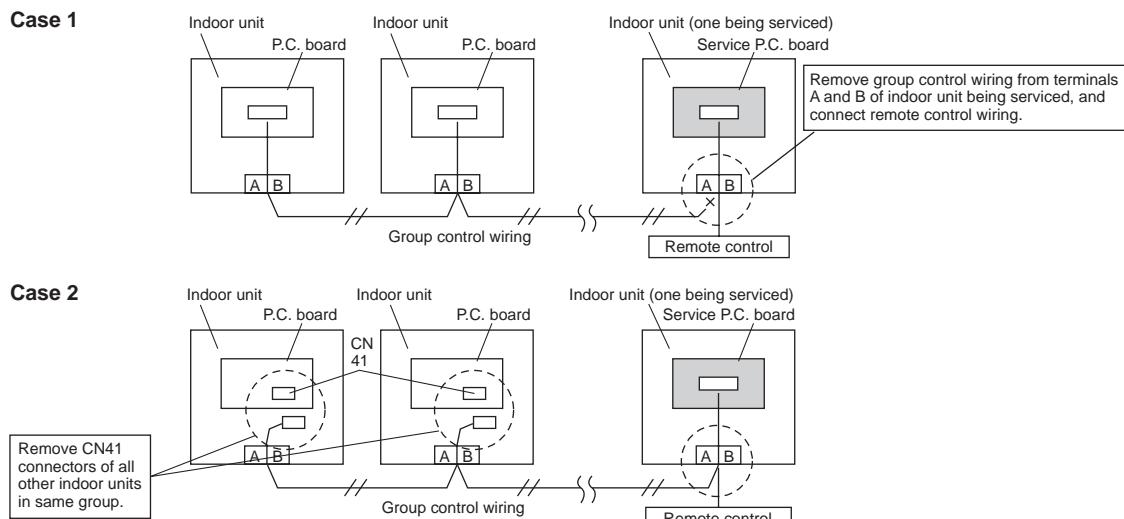
b) Connect the remote control wiring to the terminals, turn on the indoor unit, and proceed to **Procedure 3**.

* If this method cannot be used, proceed to the alternative method described below (**Case 2**).

C) If it is not possible to selectively turn on the indoor unit being serviced (**Case 2**)

a) Remove the CN41 connectors of all other indoor units in the same group.

b) Turn on the indoor unit and proceed to **Procedure 3**.



* Be sure to restore the temporarily removed group control wiring and CN41 connectors to their initial states after Procedure 3 has been completed.

Procedure 3: Writing Setting Data in EEPROM

(The EEPROM of the service P.C. board has been set to the factory default values.)

- 1 Push the  +  +  buttons simultaneously and hold for at least 4 seconds. **1** (This number corresponds to the same number shown on the Remote Control Operation Diagram.)

(Under UNIT No., **ALL** is displayed.)

At the same time, the CODE No. (DN code) **10** is displayed, and the fan of the indoor unit comes on, with the louver swinging, depending on the model.

- 2 The  button allows you to move the CODE No. (DN code) up/down by one place. **3**

- 3 First, set the type and capacity codes of the indoor unit.

(Changing the type and capacity codes in EEPROM overwrites the factory default settings.)

- (1) Set the CODE No. (DN code) to 10 (no change)

- (2) Use the  button to select the type. **4**

(For example, **0001** is for the 4-way air discharge cassette type.) - Refer to the attached table 1.

- (3) Push the  button. (The display should change from flashing to steady.) **5**

- (4) Use the  button to set the CODE No. (DN code) to **11**.

- (5) Use the  button to set the capacity code.

(For example, **0012** is for the 027 type.) - See the CODE No. list.

- (6) Push the  button. (The display should change from flashing to steady.)

Setting for 4-way Cassette model only

- (1) Using the set temperature  /  buttons, set "**EE**" to the CODE No. (DN).

- (2) Using the timer time  /  buttons, set **0000** (initial) to "**0001**".

Setting for MMU-AP0072H2UL-1 only

- (1) Using the set temperature  /  buttons, set "**EF**" to the CODE No. (DN).

- (2) Using the timer time  /  buttons, set **0000** (initial) to "**0001**".

- (7) Push  button (The setting completes if the setting data are displayed.)

- (8) Push the  button to bring the system back to normal off state. **6**

- 4 Next, write any setting changes made on-site after installation, such as address settings, in the EEPROM. Perform the tasks specified in step 1 again.

- 5 Use the  button to set the CODE No. (DN code) to **01** (To set filter sign lighting time)

- 6 Check the value displayed with the value jotted down in Procedure 1 and information proved by the customer.

- (1) If there is a discrepancy, change the setting in accordance with the jotted-down value, and push the  button. (The display should change from flashing to steady.)

- (2) If there is no discrepancy, do nothing.

- 7 Use the  button to change the CODE No. (DN code).

Again, check the value, and change the setting if necessary.

- 8 Repeat steps 6 and 7 until all the settings are checked.

- 9 When finished, push the  button to bring the system back to normal off state. **6**

In the case of group operation, turn the unit off, reconnect the indoor-indoor group control wiring and CN41 connectors, and turn on all the indoor units.

(It takes the system about 1 minute to become responsive to remote control operation.)

* CODE No. (DN code) go from **01** to **FF** with a few gaps along the way.

If you realize you have wrongly corrected a certain setting after pushing the  button, you can recover the initial value by pushing the  button, provided that the CODE No. (DN code) is yet to be changed.

Tabel 1

CODE No. list (Example)

CODE No. (DN)	Item	Setting data	Factory-set value
01	Filter sign lighting time		Depending on Type
02	Filter pollution leve		0000: standard
03	Central control address		0099: Not determined
06	Heating suction temperature shift		0002: + 3.6°F(+ 2°C)
0F	Cooling only		0000: Heat pump
10	Type		Depending on model type
11	Indoor unit capacity		Depending on capacity type
12	System address		0099: Not determined
13	Indoor unit address		0099: Not determined
14	Group address		0099: Not determined
19	Louver type (wind direction adjustment)		Depending on Type.
28	Power failure automatic recovery		0000: None
32	Sensor SW (Selection of static pressure)		0000: Body sensor
5d	High ceiling select		0000: Standard
60	Timer setting (wired remote control)		0000: Available
F0	Swing mode		0001: Standard
F1	Louver fixing position (Flap No. 1)		0000: Not fixed (4-way type only)
F2	Louver fixing position (Flap No. 2)		0000: Not fixed (4-way type only)
F3	Louver fixing position (Flap No. 3)		0000: Not fixed (4-way type only)
F4	Louver fixing position (Flap No. 4)		0000: Not fixed (4-way type only)

Type

Code No. [10]

Setup data	Type	Model abb. name
0001 *1	4-way Air Discharge Cassette	MMU-AP***2H2UL*
0007	Ceiling	MMC-AP***1H2UL
0008	High Wall	MMK-AP***3H2UL
0014	Compact 4-way Cassette	MMU-AP***1MH2UL

*1 The initial setup value of EEPROM installed on the service P.C. board

Indoor unit capacity

CODE No. [11]

Setup data	Model	Setup data	Model
0000*	Invalid	0016	042 type
0001	007 type	0017	048 type
0002	—	0018	056 type
0003	009 type	0019	—
0004	—	0020	—
0005	012 type	0021	072 type
0006	—	0022	—
0007	015 type	0023	096 type
0008	—	0024	—
0009	018 type	0025	—
0010	021 type	0026	—
0011	024 type	0027	—
0012	027 type	0028	—
0013	030 type	~	—
0014	—	0034	—
0015	036 type		

10.2 High Wall type

In the non-volatile memory (Hereinafter said EEPROM, IC10) installed on the indoor P.C. board before

Part code	Model type	P.C. board model
43T69906	MMK-AP***3H2UL series	MCC-1510

replacement, the type and capacity code exclusive to the corresponding model have been stored at shipment from the factory and the important setup data such as refrigerant line /indoor unit /group address in (AUTO/MANUAL) mode have been stored at installation.

Replace the service indoor P.C. board assembly according to the following procedure.

After replacement, make sure that the indoor unit address is set correctly and also the refrigerant cycle is working correctly by test operation.

<Replacement procedure>

Method 1

Before replacement, power of the indoor unit can be turned on and the setup data can be readout by the wired remote control.

Read EEPROM data : **Procedure 1**



Replace service P.C. board & power ON : **Procedure 2**



Write the read data to EEPROM : **Procedure 3**



Power reset

(If in group operation, reset the power for all indoor units which are connected to the remote control.)

Method 2

Before replacement, the setup data can not be read out by the wired remote control.

Replace service P.C. board & power ON : **Procedure 2**



Write the data such as "option input selection" setup to EEPROM : **Procedure 3**

(According to the customers' information)



Power reset

Procedure1: Readout of the setup data from EEPROM

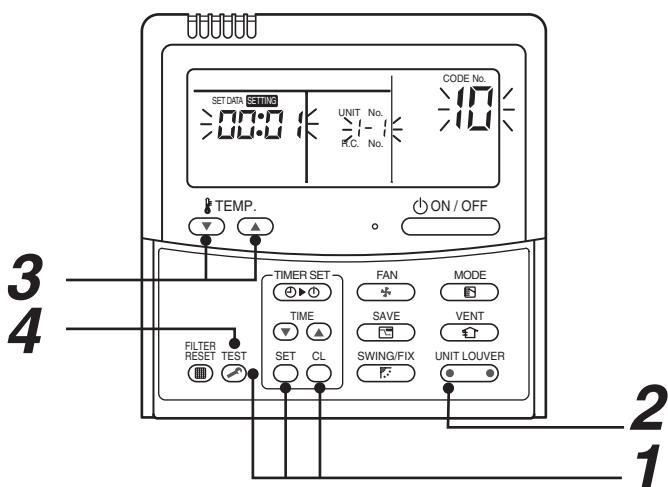
(Data in EEPROM contents, which have been changed at the local site, are read out together with data in EEPROM set at shipment from the factory.)

1. Push and buttons of the remote control at the same time for 4 seconds or more. **1**

(Corresponded with No. in Remote control as shown below picture)

* When group operation, the header indoor unit address is displayed at the first time. In this time, the CODE No. (DN) is displayed. The fan of the second indoor unit operates and the flap starts swinging if any.

2. Every pushing  button (button of left side), the indoor unit address in the group are displayed successively. **2**
Specify the indoor unit No. to be replaced.
3. Using the set temperature  /  buttons, the CODE No. (DN) can be moved up and down one by one. **3**
4. First change the CODE No. (DN) from  to . (Setting of filter sign lighting time)
Make a note of the set data displayed in this time.
5. Next change the CODE No. (DN) using the set temperature  /  buttons.
Also make a note of the set data.
6. Repeat item 5. and made a note of the important set data as shown in the below table.
*  to  are provided in the CODE No. (DN). On the way of operation, DN No. may skip.
7. After finishing making a note, push  button to return to the usual stop status. **4**
(Approx. 1 minute is required to be able to use the remote control.)



Minimum requirements for CODE No.

DN	Contents
11	Indoor unit capacity
12	Refrigerant line address
13	Indoor unit address
14	Group address

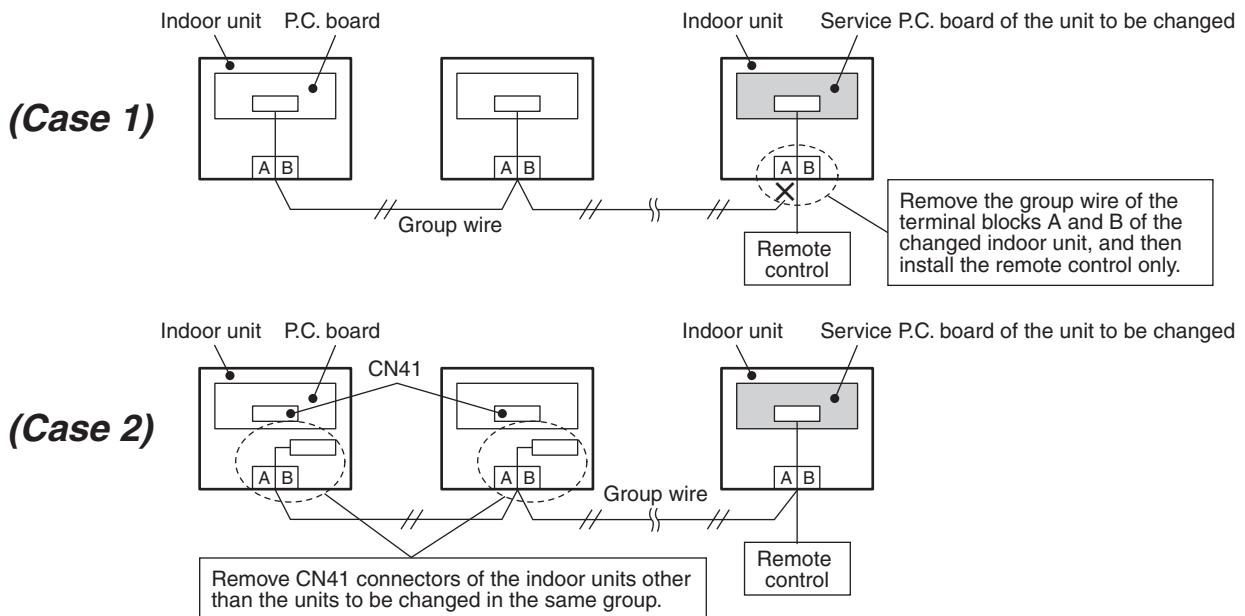
Capacity of the indoor unit is necessary to set the revolutions of the fan.

Procedure2: Replacement of service P.C. board

1. Replace the P.C. board with a service P.C. board.
In this time, setting of jumper line (cut) or setting of DIP switch on the former P.C. board should be reflected on the service P.C. board. Refer to the following table about DIP switch setting and drawing of P.C. board parts layout.
2. It is necessary to set Indoor unit to be exchanged : Remote control = 1 : 1
Based upon the system configuration, turn on power of the indoor unit with one of the following items.
1) Single (Individual) operation
 Turn on power of the indoor units and proceed to **Procedure 3**
2) Group operation
 A) In case that power of the exchanged indoor unit only can be turned on.
 Turn on power of the exchanged indoor unit only and proceed to **Procedure 3**
 B) In case that power of the indoor units cannot be turned on individually. (**CASE 1**)
 a) Remove temporarily the group wire connected to the terminal blocks A and B of the exchanged indoor unit.
 b) After connecting the remote control wire only to the removed terminal block, turn on power of the indoor units and proceed to **Procedure 3**
 * When the above methods cannot be used, follow at the **CASE 2** below.

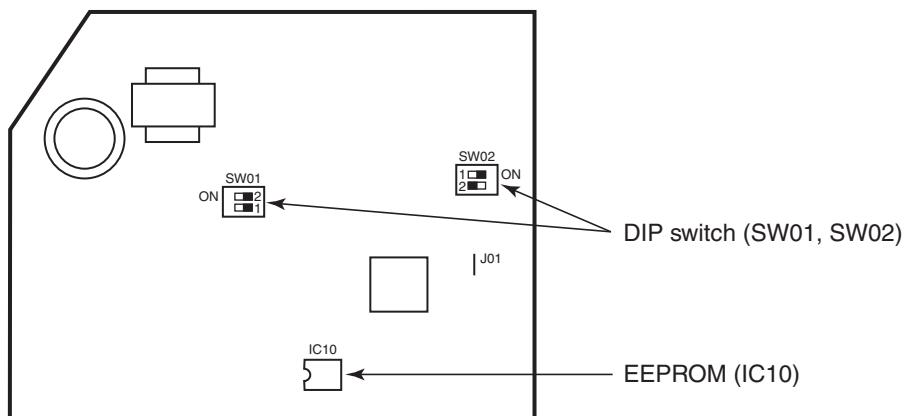
C) In case that power of the indoor units cannot be turned in individually. (**CASE 2**)

- Remove all CN41 connectors of the indoor units in the same group except those of the exchanged indoor unit.
- Turn on power of the indoor units and proceed to **Procedure 3**
 * After **Procedure 3** operation has finished, be sure to return the temporarily removed group wire or CN41 connector to the original connection.



P.C. board parts layout drawing

<MCC-1510>



Method of DIP switch setting

		Selected content	MMK-AP ***3H2UL series	At shipment
SW01	Bit 1	Terminator resistor (for central control)	*1	OFF (Without terminator)
	Bit 2	Remote control A/B selection	* 1	OFF (A selection)
SW02	Bit 1	Custom / Multi model selection	ON	OFF
	Bit 2	No use	OFF	OFF

*1 : Match to set up contents of P.C. board before replacement.

Procedure2: 3 Writing of the setup contents to EEPROM

(The contents of EEPROM installed on the service P.C. board have been set up at shipment from the factory.)

- Push  and  buttons of the remote control at the same time for 4 seconds or more. **1**
(Corresponded with No. in Remote control as shown below picture) (The UNIT No. **ALL** is displayed.)
In this time, the CODE No. (DN) **10** is displayed.
The fan of the indoor unit operates and the flap starts swinging if any.
- Using the set temperature  /  buttons, the CODE No. (DN) can be moved up and down one by one. **2**
- First set the capacity of the indoor unit.
(Setting the capacity writes the data at shipment from the factory in EEPROM.)
1) Using the set temperature  /  buttons, set **11** to the CODE No. (DN). **2**
2) Using the timer time  /  buttons, set the capacity. **3**
(For example, 0005 for MMK-AP0123H2UL) Refer to the attached table 2.
3) Push  button. (OK when the display goes on.) **4**
4) Push  button to return to usual stop status. **5**
(Approx. 1 minute is required to start handling of the remote control.)
- Next write the contents that have been written at the installation such as the address data into EEPROM.
Repeat the above procedure 1.
- Using the set temperature  /  buttons, set **11** to the CODE No. (DN). **2**
(Setup of lighting time of filter sign)
- The contents of the displayed setup data in this time should be agreed with the contents in the previous memorandum in **□1**.
1) If data disagree, change the displayed setup data to that in the previous memorandum by the timer time  /  buttons, and then push  button. (OK when the display goes on.)
2) There is nothing to do when data agrees.
- Using the set temperature  /  buttons, change the CODE No. (DN).
As same as the above 6., check the contents of the setup data and then change them to data contents in the previous memorandum in **□1**.
- Then repeat the procedure 6. and 7.
- After completion of setup, push  button to return the status to the usual stop status. **5**

In a group operation, turn off the power supply once, return the group wires between indoor units and CN41 connectors as before, and then turn on power of all the indoor units.
(Approx. 1 minute is required to be able to use of the remote control.)

* **□1** to **□R** are provided in the CODE No. (DN). On the way of operation, DN No. may skip.

When data has been changed by mistake and  button has been pushed, the data can be returned to the data before change by pushing  button if the CODE No. (DN) was not yet changed.

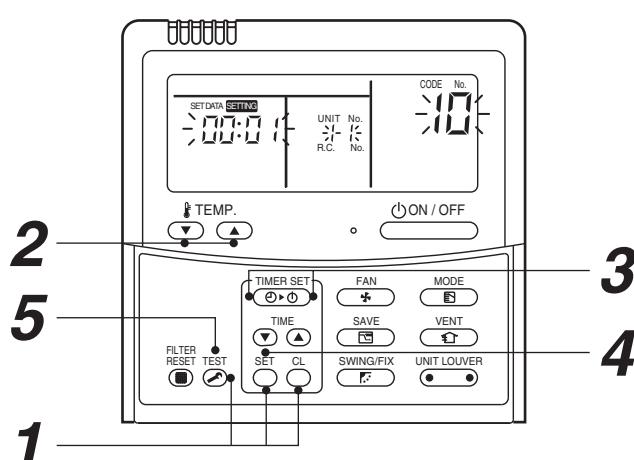


Table 2**CODE No. table (Please record the objective unit data at field)**

DN	Item	Memo	At shipment
01	Filter sign lighting time		0001: 150 hour
02	Dirty state of filter		0000: Standard
03	Central control address		0099: Unfixed
06	Heating suction temp shift		0002: + 3.6°F (+2°C)
0C	PRE-DEF indication selection		0000: Standard
0F	Cooling only		0000: Heat pump
10	Type	Be sure to set as 0008	0008: High wall type
11	Indoor unit capacity (See below table)		According to capacity type
12	Refrigerant line address		0099: Unfixed
13	Indoor unit address		0099: Unfixed
14	Group address		0099: Unfixed
28	Automatic restart from power cut		0000: None
2A	Option input selection (CN80)		0002: External emergency input
2b	Thermo output selection (T10 ③)		0000: Thermo ON
2E	Input selection (T10 ①)		0000: Operation input
32	Sensor selection		0000: Available
60	Timer set (Wired remote control)		0000: Available
69	Louver selection of cooling		0000: Standard

Indoor unit capacity (CODE No. [11])

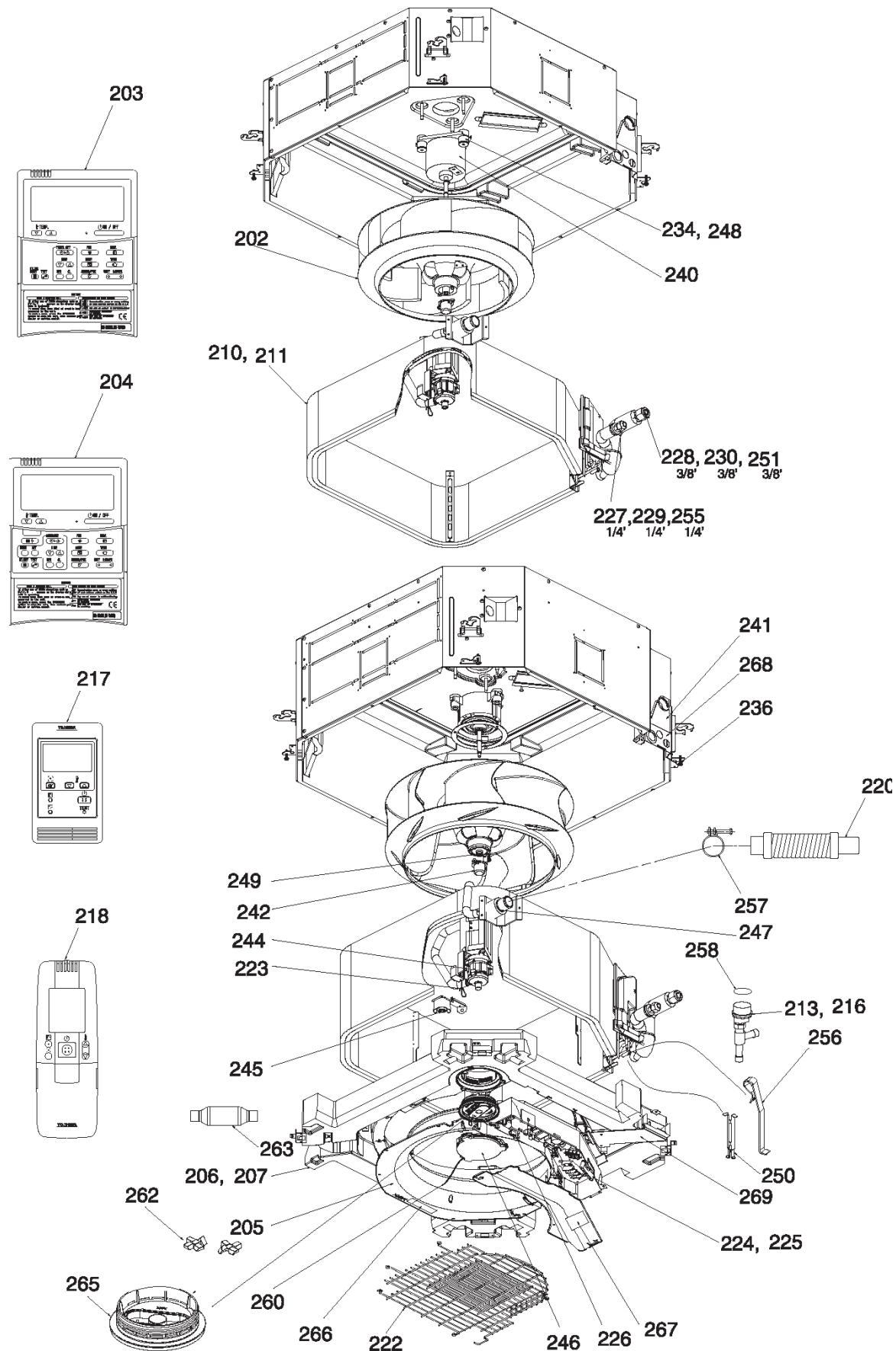
Setup data	Model
0001*	Invalid
0001	MMK-AP0073H2UL
0003	MMK-AP0093H2UL
0005	MMK-AP0123H2UL
0007	MMK-AP0153H2UL
0009	MMK-AP0183H2UL
0011	MMK-AP0243H2UL

* Initial value of EEPROM installed on the supplied service P.C. board

11. EXPLODED VIEWS AND PARTS LIST

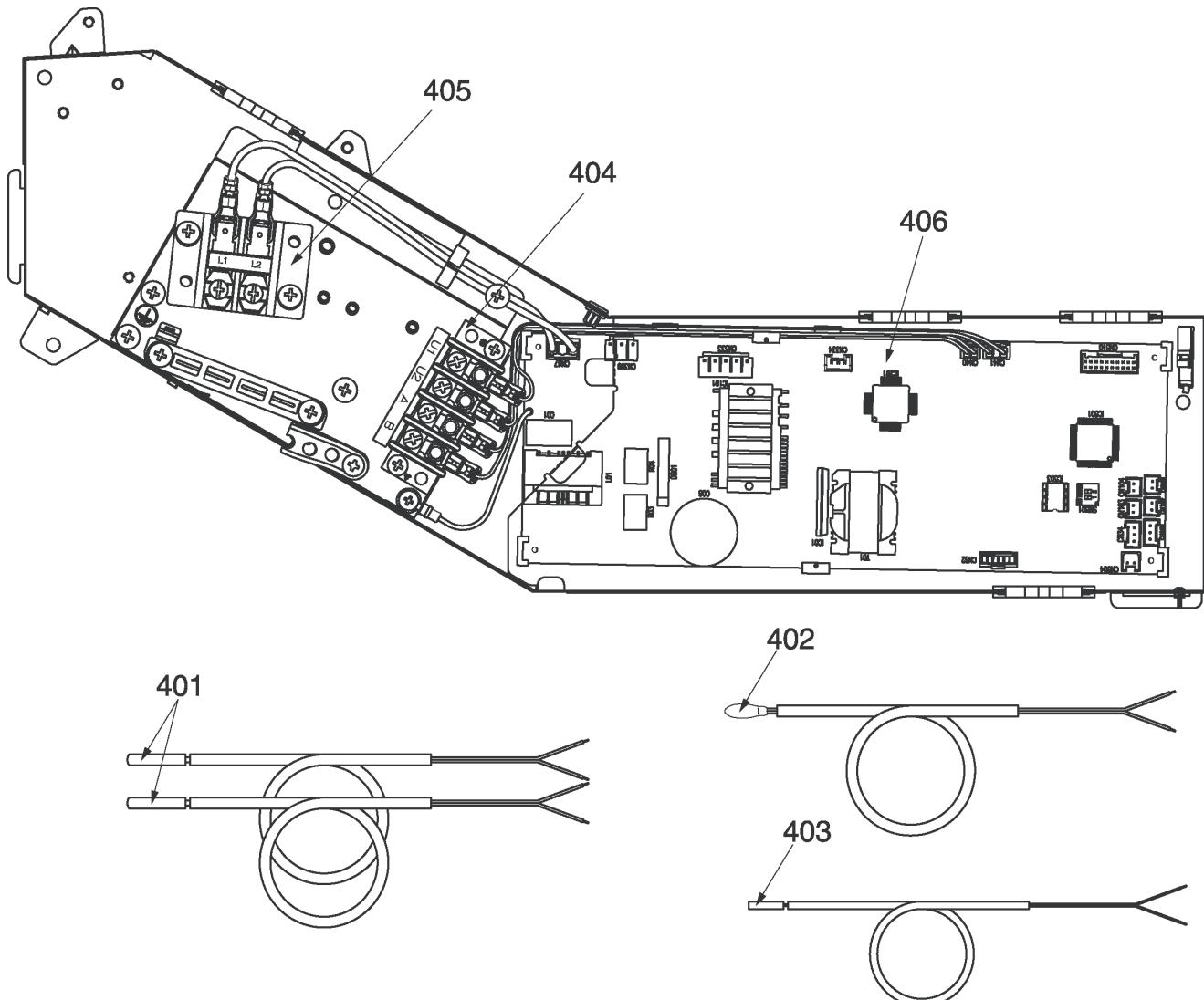
1.1 4-Way Cassette Type

MMU-AP0072H2UL, AP0092H2UL, AP0122H2UL

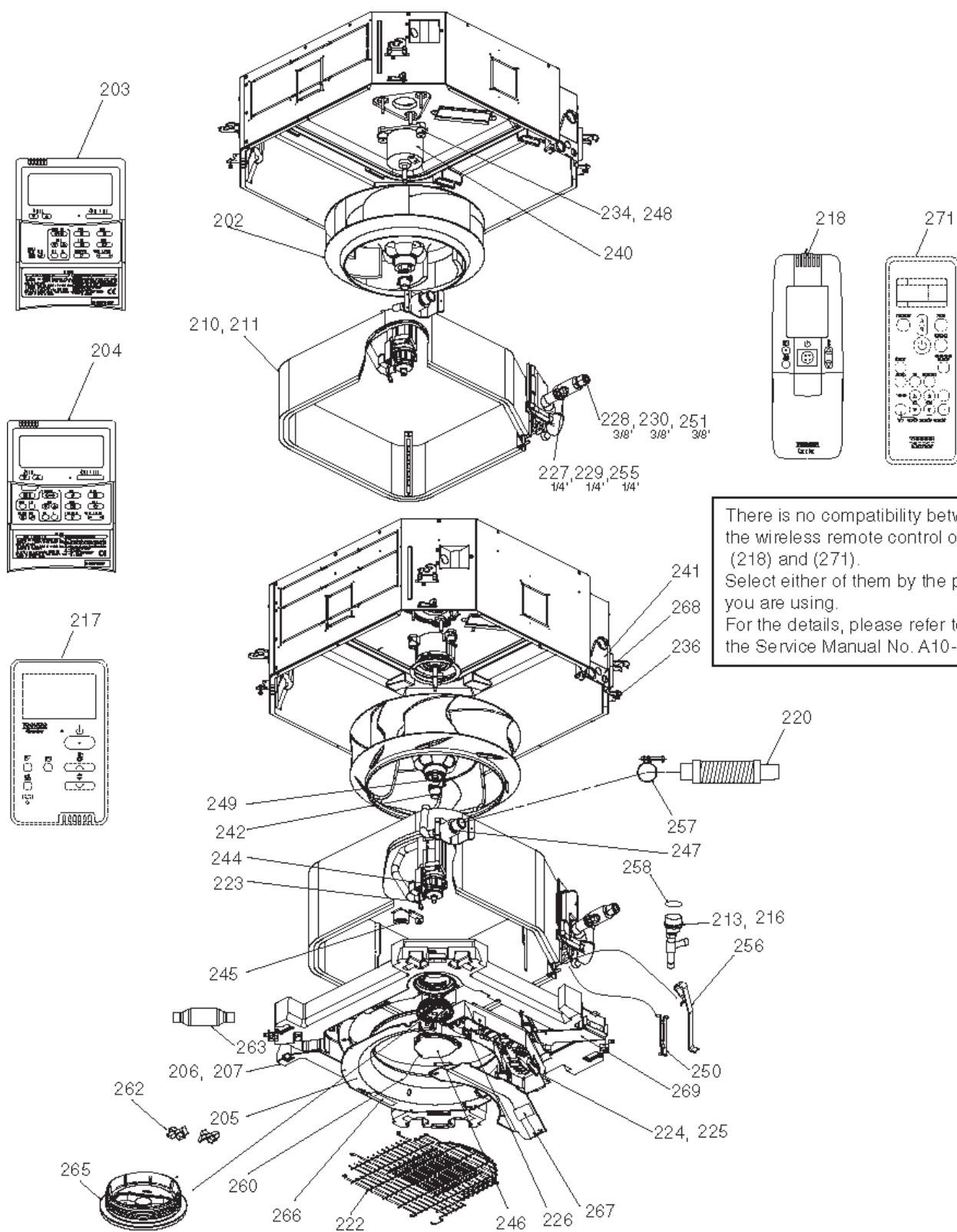


Location No.	Parts No.	Description	Model Name MMU-AP		
			0072H2UL	0092H2UL	0122H2UL
202	43120248	FAN, ASSY TURB	1	1	1
203	43166013	REMOTE CONTROLLER, SX-TA01UE	1	1	1
204	43166014	REMOTE CONTROLLER, SX-TB01UE	1	1	1
205	43122110	BELL MOUTH	1	1	1
206	43172213	PAN ASSY, DRAIN			1
207	43172254	PAN ASSY, DRAIN	1	1	
210	4314J531	REFRIGERATION CYCLE ASSY	1	1	
211	4314J532	REFRIGERATION CYCLE ASSY			1
213	43146707	MOTOR, PMV, EDM-MD12TF-3	1	1	1
216	43146713	VALVE, PMV, EDM-B25YGT-3	1	1	1
217	43166015	REMOTE CONTROLLER, SX-UA01UE	1	1	1
218	43166016	REMOTE CONTROLLER, WX-TA01UES	1	1	1
220	43170244	HOSE, DRAIN, 25A	1	1	1
222	43107280	GUARD, FAN	1	1	1
223	43079249	BAND, HOSE	1	1	1
224	43163057	CLAMP, DOWN	1	1	1
225	43163058	CLAMP, UP	1	1	1
226	43089147	CLAMP, WIRE	4	4	4
227	43F47685	NUT, FLARE, 1/4 IN	1	1	1
228	43049776	SOCKET, 3/8"	1	1	1
229	43149351	SOCKET, 1/4"	1	1	1
230	43F47686	NUT, FLARE, 3/8 IN	1	1	1
234	43139137	RUBBER, CUSHION	3	3	3
236	43197197	SCREW, FIX PANEL	4	4	4
240	4312C059	MOTOR, FAN, SWF-340U60-2	1	1	1
241	43119500	COVER ASSY	1	1	1
242	43139166	CAP, NUT	1	1	1
244	43177010	PUMP ASSY, MDP-1401	1	1	1
245	43151299	SWITCH ASSY, FLOAT, FS-0218-102	1	1	1
246	43179145	LID ASSY, OUTSIDE	1	1	1
247	43170254	SOCKET, ASSY DRAIN	1	1	1
248	43197155	WASHER	3	3	3
249	43F97212	NUT	1	1	1
250	43107215	HOLDER, SENSOR	1	1	1
251	43F47609	BONNET, 3/8"	1	1	1
255	43F49697	BONNET, 1/4"	1	1	1
256	43F19904	HOLDER, SENSOR (TS)	2	2	2
257	43179135	BAND, HOSE	1	1	1
258	43149314	SHEET, PMV	1	1	1
260	43182010	STRING	1	1	1
262	43179152	GLASS	1	1	1
263	43147664	STRAINER	1	1	1
265	43179154	LID ASSY, INSIDE	1	1	1
266	431S8137	LABEL, CAUTION	1	1	1
267	431S8299	LABEL, WARNING	1	1	1
268	43119502	PLATE ASSY	1	1	1
269	43104200	COVER WIRE	1	1	1

MMU-AP0072H2UL, AP0092H2UL, AP0122H2UL

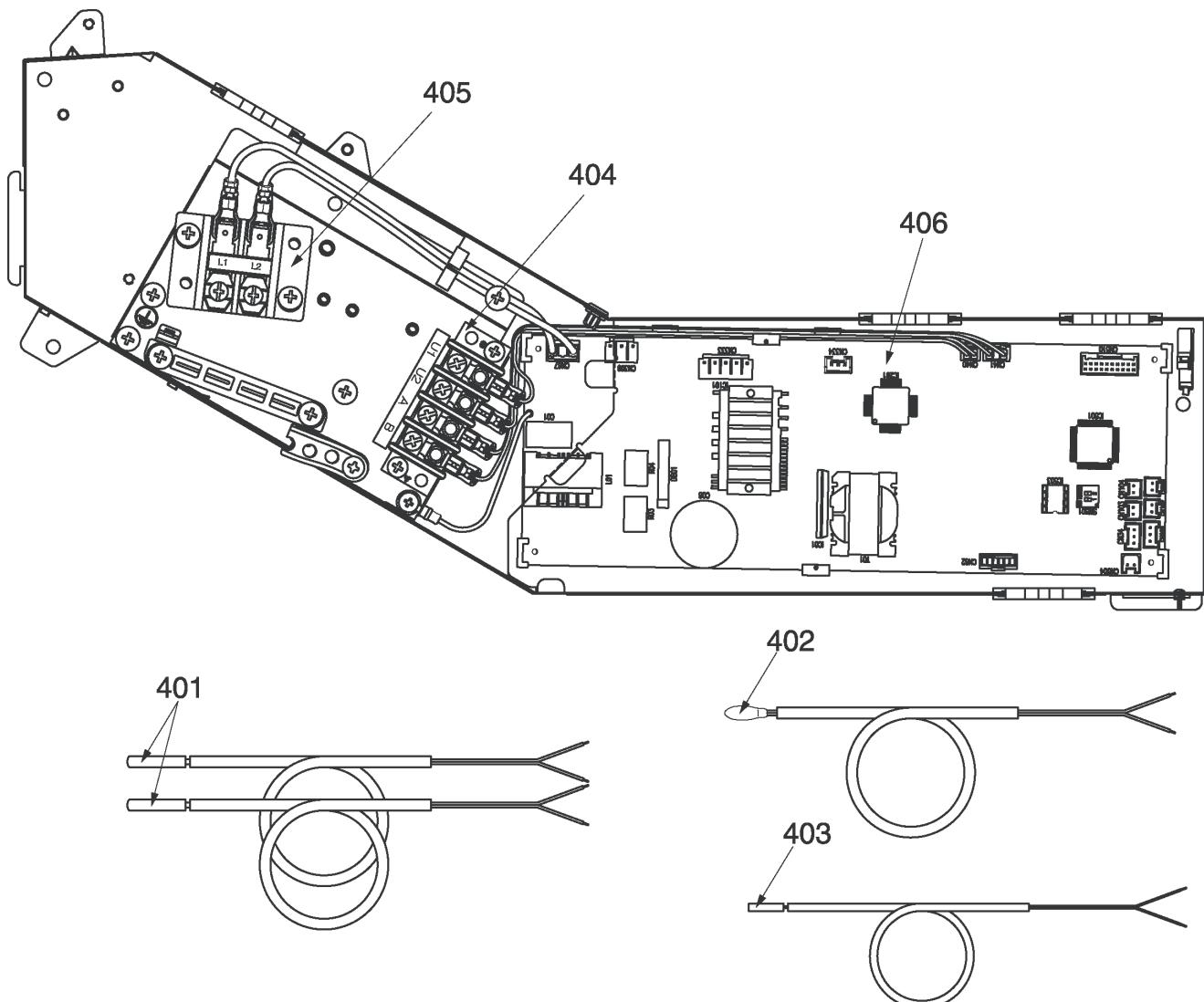


Location No.	Parts No.	Description	Model Name MMU-AP		
			0072H2UL	0092H2UL	0122H2UL
401	43050425	Sensor Ass'y, Service, TC (F6) : TC2, TCJ	2	2	2
402	43F50426	Sensor, Service, TA	1	1	1
403	43150320	Sensor Ass'y, Service, TG (F4) : TC1	1	1	1
404	43160574	Terminal, 4P	1	1	1
405	43160626	Terminal Block, 2P, 20A	1	1	1
406	4316V447	P.C. Board Ass'y, MCC-1570	1	1	1



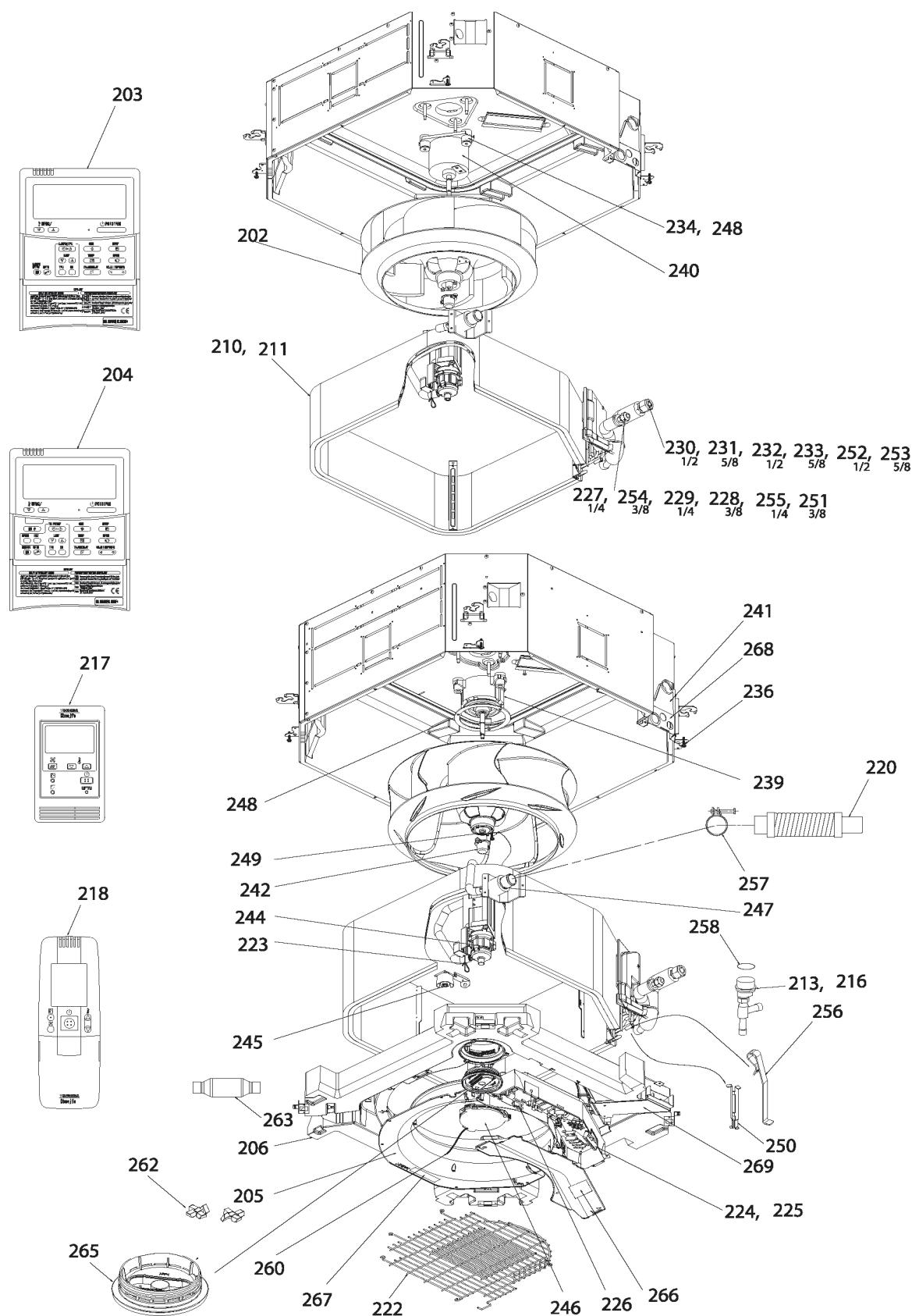
Location No.	Parts No.	Description	Q'ty/Set
			MMU-AP0072H2UL-1
202	43120248	FAN, ASSY TURB	1
203	43166013	REMOTE CONTROLLER, SX-TA01UE	1
204	43166014	REMOTE CONTROLLER, SX-TB01UE	1
205	43122110	BELL MOUTH	1
206	43172213	PAN ASSY, DRAIN	1
211	4314J532	REFRIGERATION CYCLE ASSY	1
213	43146707	MOTOR, PMV, EDM-MD12TF-3	1
216	43146713	VALVE, PMV, EDM-B25YGT-3	1
217	43166026	REMOTE CONTROLLER, SX-U01EQ	1
218	43166016	REMOTE CONTROLLER, WX-TA01UES	1
220	43170244	HOSE, DRAIN, 25A	1
222	43107280	GUARD, FAN	1
223	43079249	BAND, HOSE	1
224	43163057	CLAMP, DOWN	1
225	43163058	CLAMP, UP	1
226	43089147	CLAMP, WIRE	4
227	43F47685	NUT, FLARE, 1/4 IN	1
228	43049776	SOCKET, 3/8"	1
229	43149351	SOCKET, 1/4"	1
230	43F47686	NUT, FLARE, 3/8 IN	1
234	43139137	RUBBER, CUSHION	3
236	43197197	SCREW, FIX PANEL	4
240	4312C059	MOTOR, FAN, SWF-340U60-2	1
241	43119500	COVER ASSY	1
242	43139166	CAP, NUT	1
244	43177010	PUMP ASSY, MDP-1401	1
245	43151299	SWITCH ASSY, FLOAT, FS-0218-102	1
246	43179145	LID ASSY, OUTSIDE	1
247	43170254	SOCKET, ASSY DRAIN	1
248	43197155	WASHER	3
249	43F97212	NUT	1
250	43107215	HOLDER, SENSOR	1
251	43F47609	BONNET, 3/8"	1
255	43F49697	BONNET, 1/4"	1
256	43F19904	HOLDER, SENSOR (TS)	2
257	43179135	BAND, HOSE	1
258	43149314	SHEET, PMV	1
260	43182010	STRING	1
262	43179152	GLASS	1
263	43147664	STRAINER	1
265	43179154	LID ASSY, INSIDE	1
266	431S8137	LABEL, CAUTION	1
267	431S8299	LABEL, WARNING	1
268	43119502	PLATE ASSY	1
269	43104200	COVER WIRE	1
271	43166029	REMOTE CONTROLLER	1

Electric Parts
MMU-AP0072H2UL-1



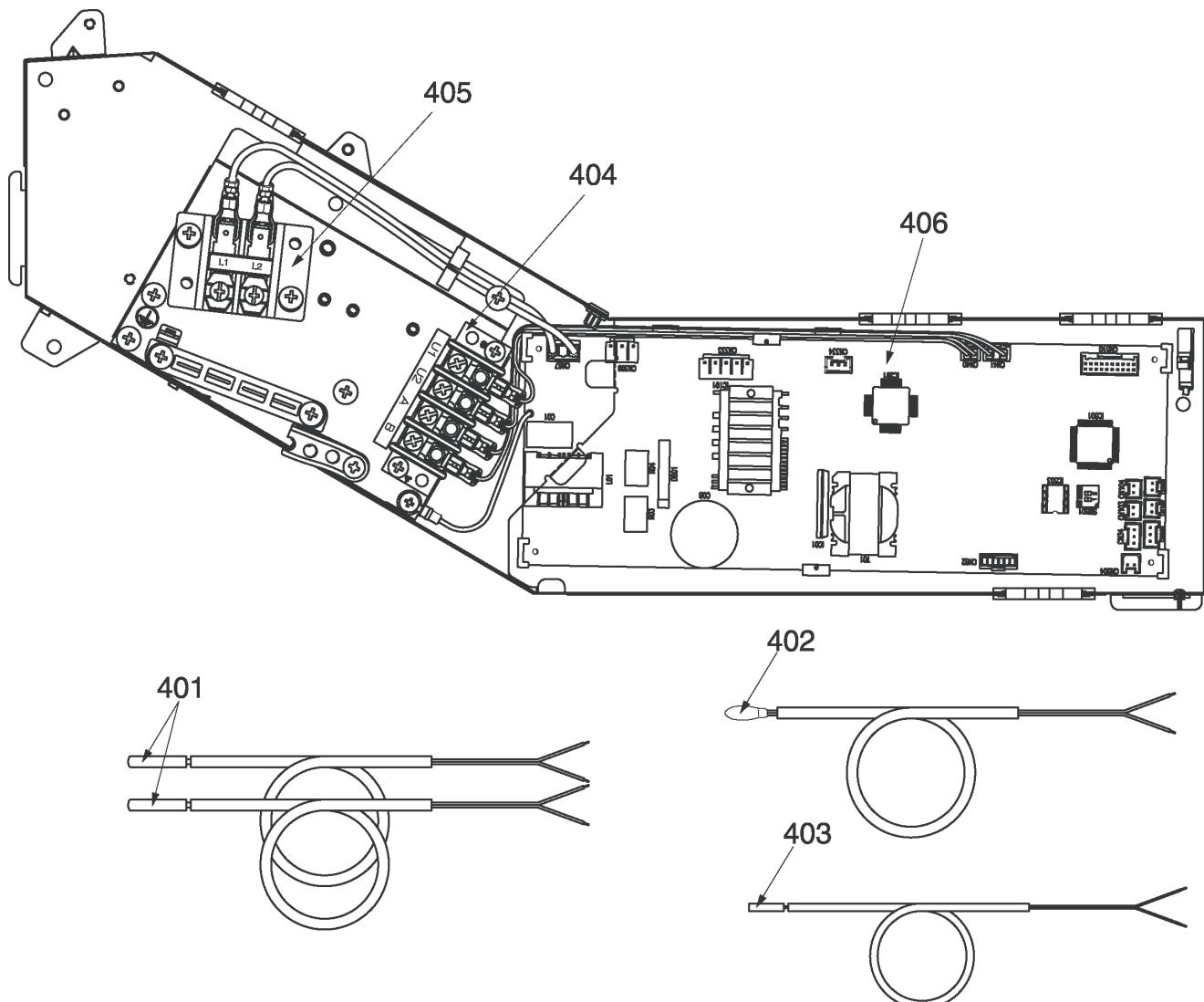
Location No.	Parts No.	Description	Q'ty/Set
			MMU-AP0072H2UL-1
401	43050425	SENSOR ASSY, SERVICE, TC (F6) : TC2, TCJ	2
402	43F50426	SENSOR, SERVICE, TA	1
403	43150320	SENSOR ASSY, SERVICE, TG (F4) : TC1	1
404	43160574	TERMINAL, 4P	1
405	43160626	TERMINAL BLOCK, 2P, 20A	1
406	4316V593	P.C. BOARD ASSY, MCC-1570	1

■ MMU-AP0152H2UL, AP0182H2UL, AP0212H2UL, AP0242H2UL, AP0302H2UL



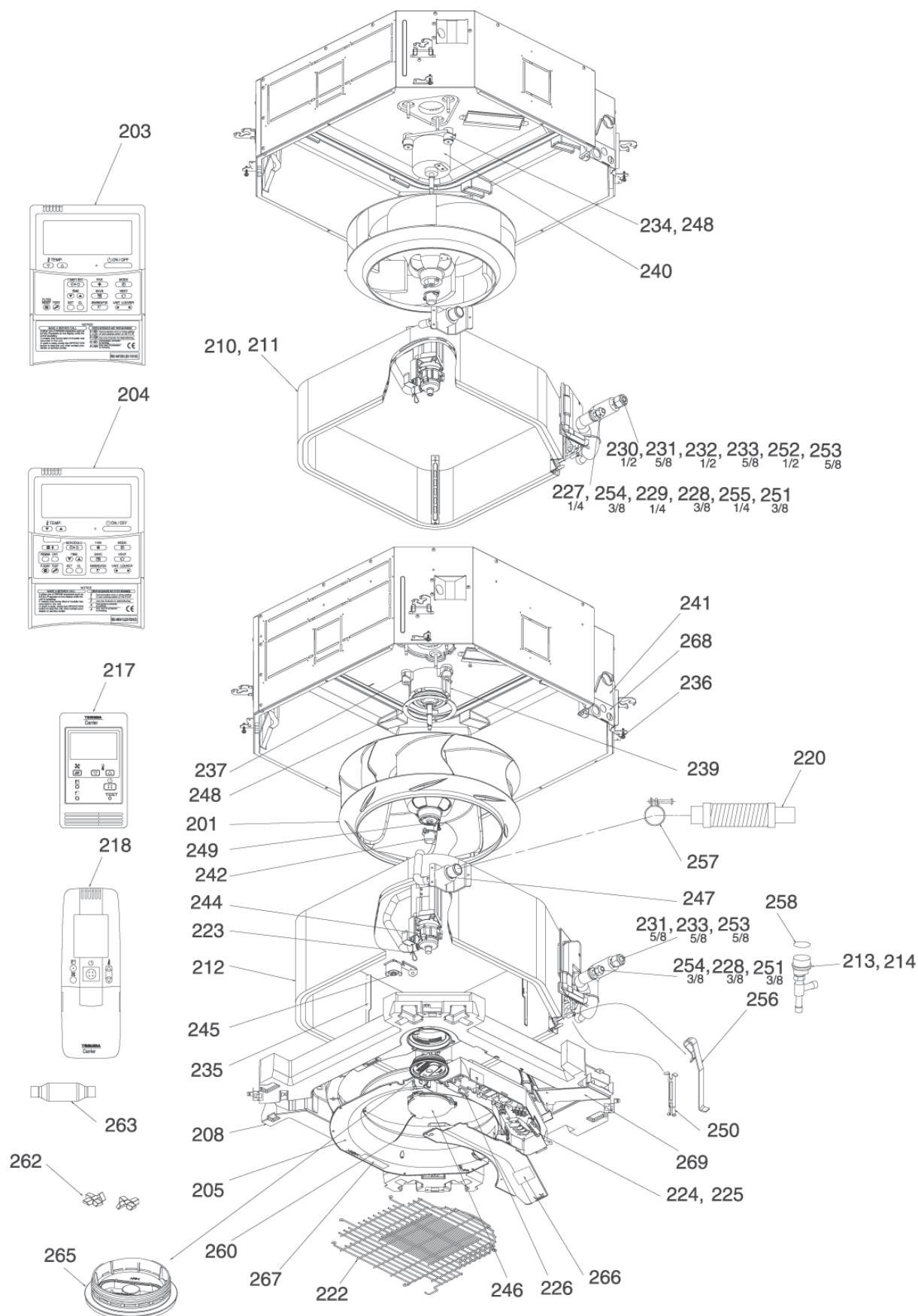
Location No.	Parts No.	Description	Model Name MMU-AP			
			0152H2UL 0182H2UL	0212H2UL	0242H2UL	0302H2UL
202	43120248	FAN, ASSY TURB	1	1	1	1
203	43166013	REMOTE CONTROLLER,SX-TA01UE	1	1	1	1
204	43166014	REMOTE CONTROLLER,SX-TB01UE	1	1	1	1
205	43122110	BELL MOUTH	1	1	1	1
206	43172213	PAN ASSY, DRAIN	1	1	1	1
210	4314J406	REFRIGERATION CYCLE ASSY	1			
211	4314J407	REFRIGERATION CYCLE ASSY		1	1	1
213	43146707	MOTOR, PMV,EDM-MD12TF-3	1	1	1	1
216	43146726	VALVE, PMV,EDM-B40YGTB-2	1	1	1	1
217	43166015	REMOTE CONTROLLER,SX-UA01UE	1	1	1	1
218	43166016	REMOTE CONTROLLER,WX-TA01UES	1	1	1	1
220	43170244	HOSE, DRAIN	1	1	1	1
222	43107280	GUARD, FAN	1	1	1	1
223	43079249	BAND, HOSE	1	1	1	1
224	43163057	CLAMP, DOWN	1	1	1	1
225	43163058	CLAMP, UP	1	1	1	1
226	43089147	CLAMP, WIRE	4	4	4	4
227	43047685	NUT, FLARE, 1/4 IN	1			
228	43049776	SOCKET,3/8IN		1	1	1
229	43149351	SOCKET,1/4IN	1			
230	43047688	NUT, FLARE, 1/2, IN	1			
231	43149352	NUT, FLARE, 5/8, IN		1	1	1
232	43149353	SOCKET,1/2IN	1			
233	43149354	SOCKET,5/8IN		1	1	1
234	43139137	RUBBER, CUSHION	3	3	3	3
236	43197197	SCREW, FIX PANEL	4	4	4	4
240	4312C059	MOTOR, FAN,SWF-340U60-2	1	1	1	1
241	43119500	COVER ASSY	1	1	1	1
242	43139166	CAP, NUT	1	1	1	1
244	43177010	PUMP ASSY,MDP-1401	1	1	1	1
245	43151299	SWITCH ASSY, FLOAT,FS-0218-102	1	1	1	1
246	43179145	LID ASSY, OUTSIDE	1	1	1	1
247	43170254	SOCKET, ASSY DRAIN	1	1	1	1
248	43197155	WASHER	3	3	3	3
249	43097212	NUT	1	1	1	1
250	43107215	HOLDER, SENSOR	1	1	1	1
251	43047609	BONNET		1	1	1
252	43147195	BONNET, 1/2 IN	1			
253	43194029	BONNET		1	1	1
254	43149355	NUT, FLARE, 3/8, IN		1	1	1
255	43049697	BONNET	1			
256	43019904	HOLDER, SENSOR (TS)	2	2	2	2
257	43179135	BAND, HOSE	1	1	1	1
258	43149314	SHEET, PMV	1	1	1	1
260	43182010	STRING	1	1	1	1
262	43179152	GLASS	1	1	1	1
263	43147664	STRAINER	1	1	1	1
265	43179154	LID ASSY, INSIDE	1	1	1	1
266	431S8137	LBEL, CAUTION	1	1	1	1
267	431S8138	LBEL, WARNING	1	1	1	1
268	43119502	PLAIT ASSY	1	1	1	1
269	43104200	COVER WIRE	1	1	1	1

■ MMU-AP0152H2UL, AP0182H2UL, AP0212H2UL, AP0242H2UL, AP0302H2UL



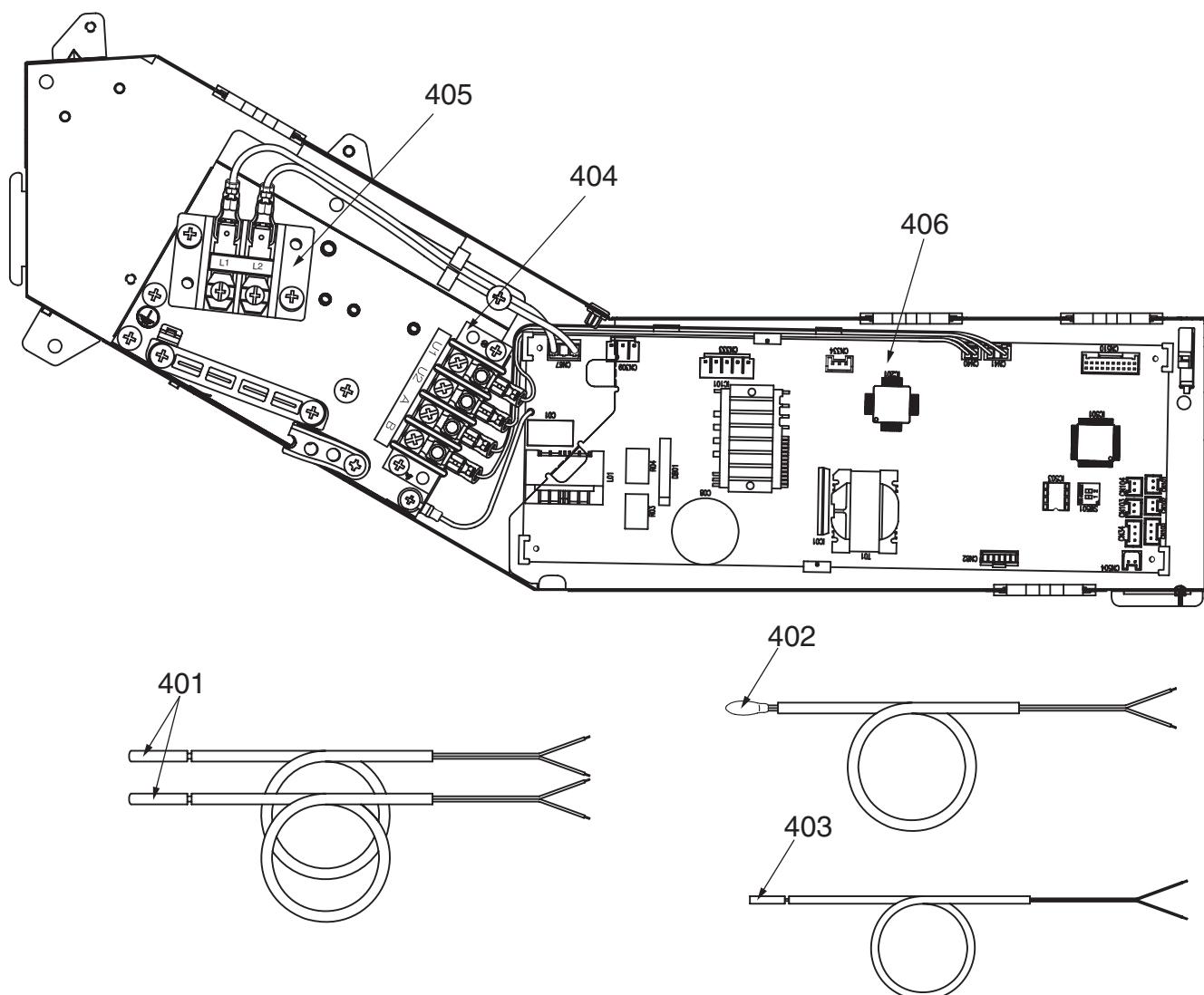
Location No.	Parts No.	Description	Model Name MMU-AP			
			0152H2UL 0182H2UL	0212H2UL	0242H2UL	0302H2UL
401	43050425	Sensor Ass'y, Service, TC (F6) : TC2, TCJ	2	2	2	2
402	43F50426	Sensor, Service, TA	1	1	1	1
403	43150320	Sensor Ass'y, Service, TG (F4) : TC1	1	1	1	1
404	43160574	Terminal, 4P	1	1	1	1
405	43160626	Terminal Block, 2P, 20A	1	1	1	1
406	4316V447	P.C. Board Ass'y, MCC-1570	1	1	1	1

MMU-AP0362H2UL, AP0422H2UL



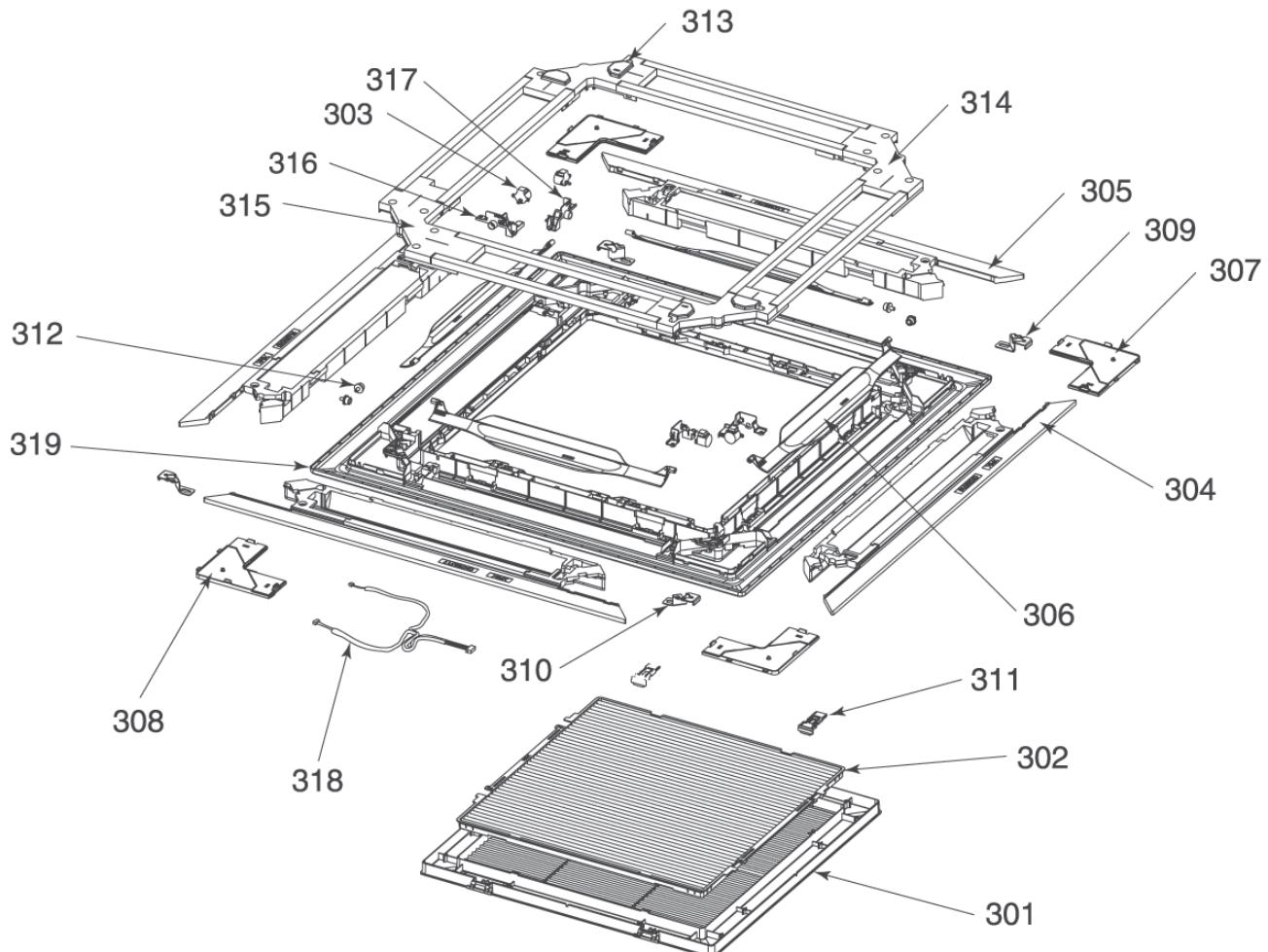
Location No.	Parts No.	Description	Model Name MMU-AP	
			0362H2UL	0422H2UL
201	43120247	FAN, ASSY TURB	1	1
203	43166013	REMOTE CONTROLLER,SX-TA01UE	1	1
204	43166014	REMOTE CONTROLLER,SX-TB01UE	1	1
205	43122110	BELL MOUTH	1	1
208	43172218	PAN ASSY, DRAIN	1	1
212	4314J408	REFRIGERATION CYCLE ASSY	1	1
213	43146707	MOTOR, PMV,EDM-MD12TF-3	1	1
214	43146723	BODY, PMV	1	1
217	43166015	REMOTE CONTROLLER,SX-UA01UE	1	1
218	43166016	REMOTE CONTROLLER,WX-TA01UES	1	1
220	43170244	HOSE, DRAIN	1	1
222	43107280	GUARD, FAN	1	1
223	43079249	BAND, HOSE	1	1
224	43163057	CLAMP, DOWN	1	1
225	43163058	CLAMP, UP	1	1
226	43089147	CLAMP, WIRE	4	4
228	43049776	SOCKET,3/8IN	1	1
231	43149352	NUT, FLARE, 5/8, IN	1	1
233	43149354	SOCKET,5/8IN	1	1
235	43122117	PLATE, WIND	4	4
236	43197197	SCREW, FIX PANEL	4	4
237	43139165	RUBBER, CUSHION	3	3
238	43197199	WASHER	1	1
239	4312C058	MOTOR, FAN,ICF-340U150-1	1	1
241	43119500	COVER ASSY	1	1
242	43139166	CAP, NUT	1	1
244	43177010	PUMP ASSY, MDP-1401	1	1
245	43151299	SWITCH ASSY, FLOAT,FS-0218-102	1	1
246	43179145	LID ASSY, OUTSIDE	1	1
247	43170254	SOCKET, ASSY DRAIN	1	1
248	43197155	WASHER	1	1
249	43097212	NUT	1	1
250	43107215	HOLDER, SENSOR	1	1
251	43047609	BONNET	1	1
253	43194029	BONNET	1	1
254	43149355	NUT, FLARE, 3/8, IN	1	1
256	43019904	HOLDER, SENSOR (TS)	2	2
257	43179135	BAND, HOSE	1	1
258	43149314	SHEET, PMV	1	1
260	43182010	STRING	1	1
262	43179152	GLASS	1	1
263	43147664	STRAINER	1	1
265	43179154	LID ASSY, INSIDE	1	1
266	431S8137	LABEL, CAUTION	1	1
267	431S8138	LABEL, WARNING	1	1
268	43119502	PLATE ASSY	1	1
269	43104200	COVER WIRE	1	1

MMU-AP0362H2UL, AP0422H2UL



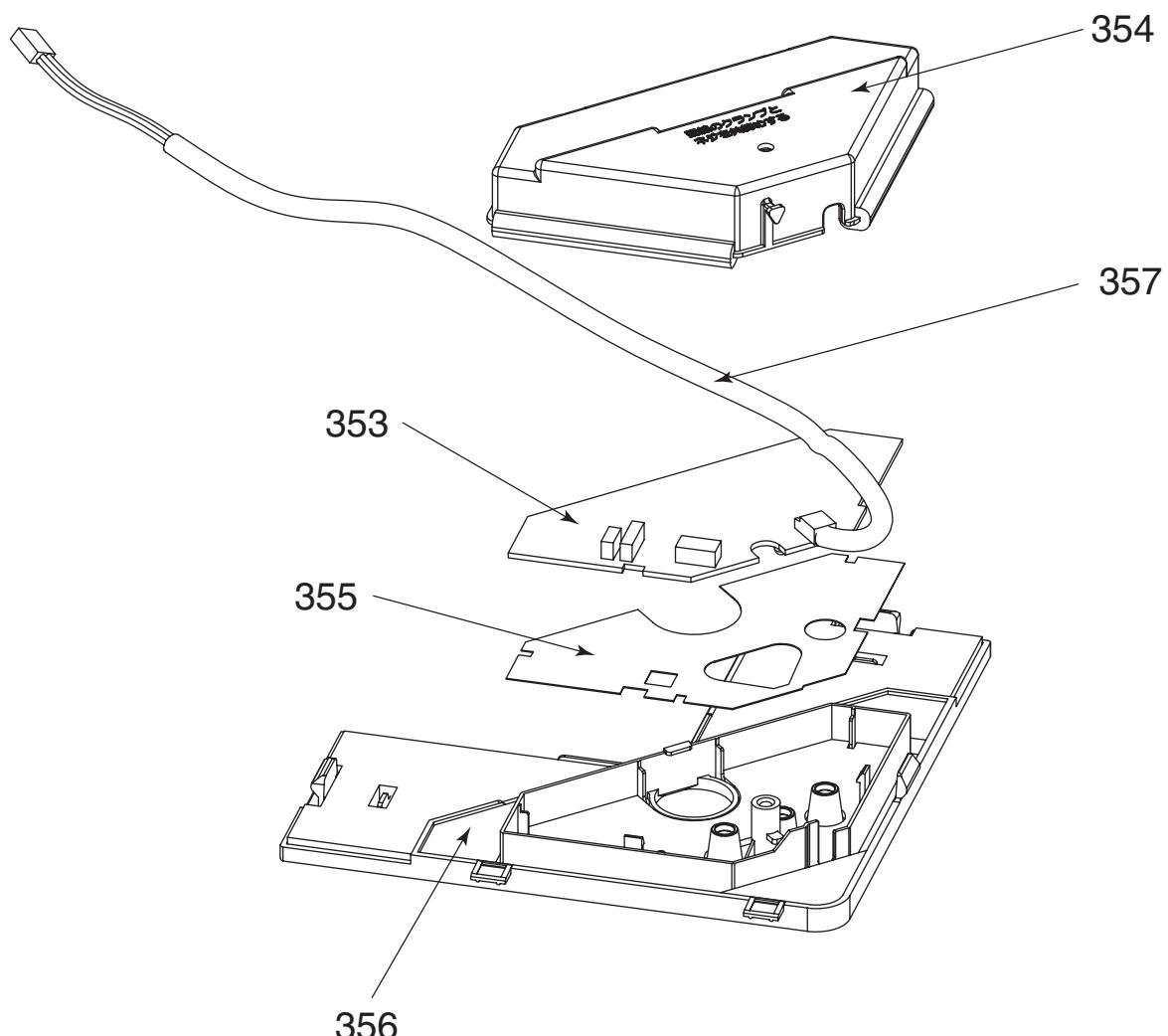
Location No.	Parts No.	Description	Model Name	
			MMU-AP0362H2UL	MMU-AP0422H2UL
401	43050425	Sensor Ass'y, Service, TC (F6) : TC2, TCJ	2	2
402	43F50426	Sensor, Service, TA	1	1
403	43150320	Sensor Ass'y, Service, TG (F4) : TC1	1	1
404	43160574	Terminal, 4P	1	1
405	43160626	Terminal Block, 2P, 20A, 250V	1	1
406	4316V447	P.C. Board Ass'y, MCC-1570	1	1

RBC-U31PG (W)-UL



Location No.	Part No.	Description	Model Name
			RBC-U31PG (W)-UL
301	43409207	Grille, Air Inlet	1
302	43480017	Air Filter	1
303	4302D003	Motor, Louver	4
304	43407145	Outlet, Air Form	2
305	43407146	Outlet, Air Form	2
306	43409212	Louver	4
307	43401037	Cover, Panel Ass'y	3
308	43101358	Cover, Panel Ass'y	1
309	43407148	Plate, Fix, Panel	2
310	43407149	Plate, Fix, Panel	2
311	43407150	Hook	2
312	43407154	Cap, AXIS	4
313	43403010	Cover Ass'y, Motor	2
314	43403011	Cover Ass'y	1
315	43403012	Cover Ass'y	1
316	43407155	Fix, Motor	2
317	43407156	Fix, Motor	2
318	43460125	Lead, Motor	1
319	43400077	Panel, Front	1

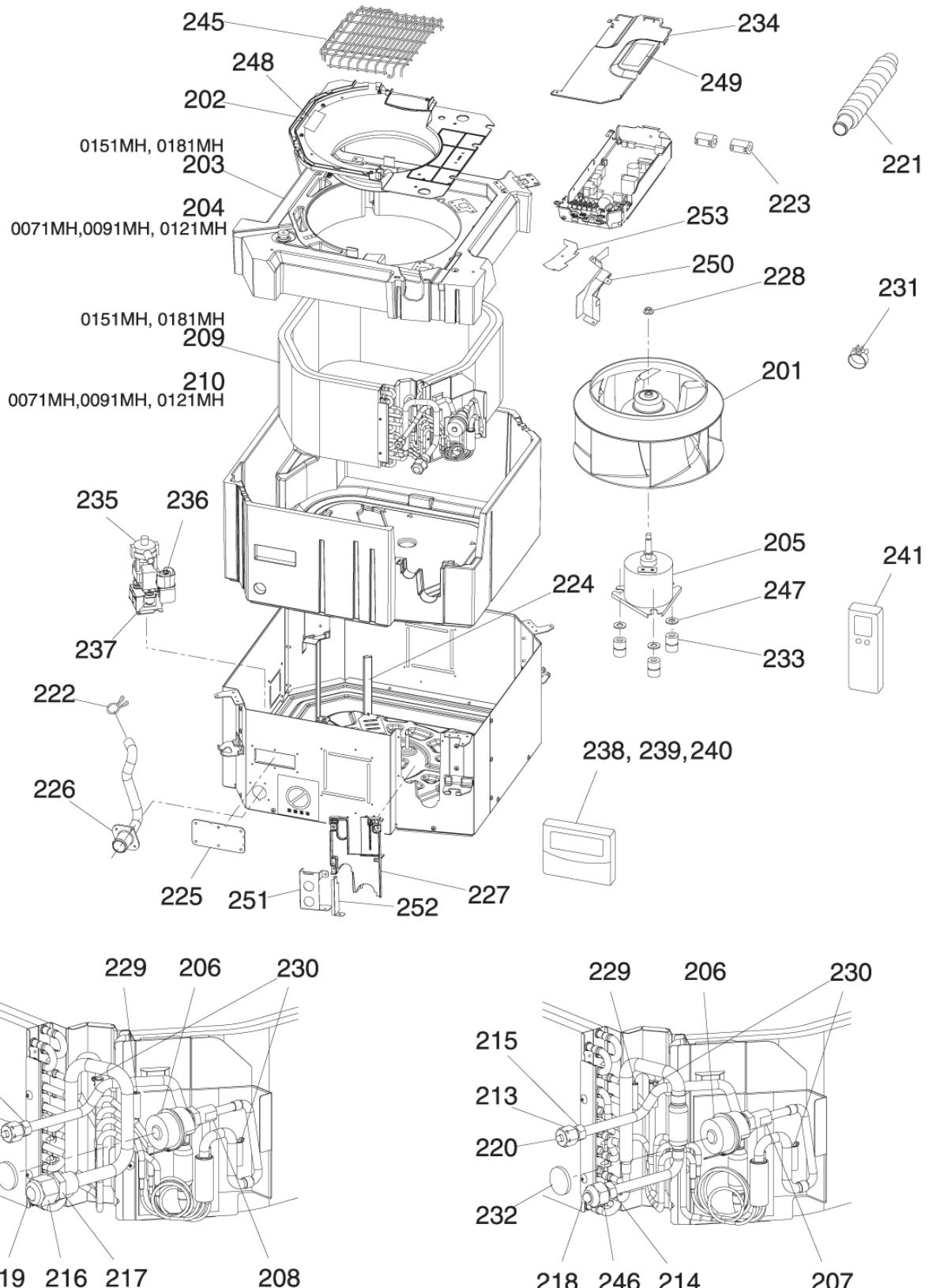
RBC-AX31U (W)-UL



Location No.	Part No.	Description	Model Name
RBC-AX31U (W)-UL			
353	43459011	P.C. Board Ass'y, Remote Receiver	1
354	43462010	Cover, WRS	1
355	43461006	Sheet	1
356	43108018	Cover, Panel, WRS	1
357	43160599	Lead	1

11-2. Compact 4-way Cassette Type

MMU-AP0071MH2UL, AP0091MH2UL, AP0121MH2UL, AP0151MH2UL, AP0181MH2UL

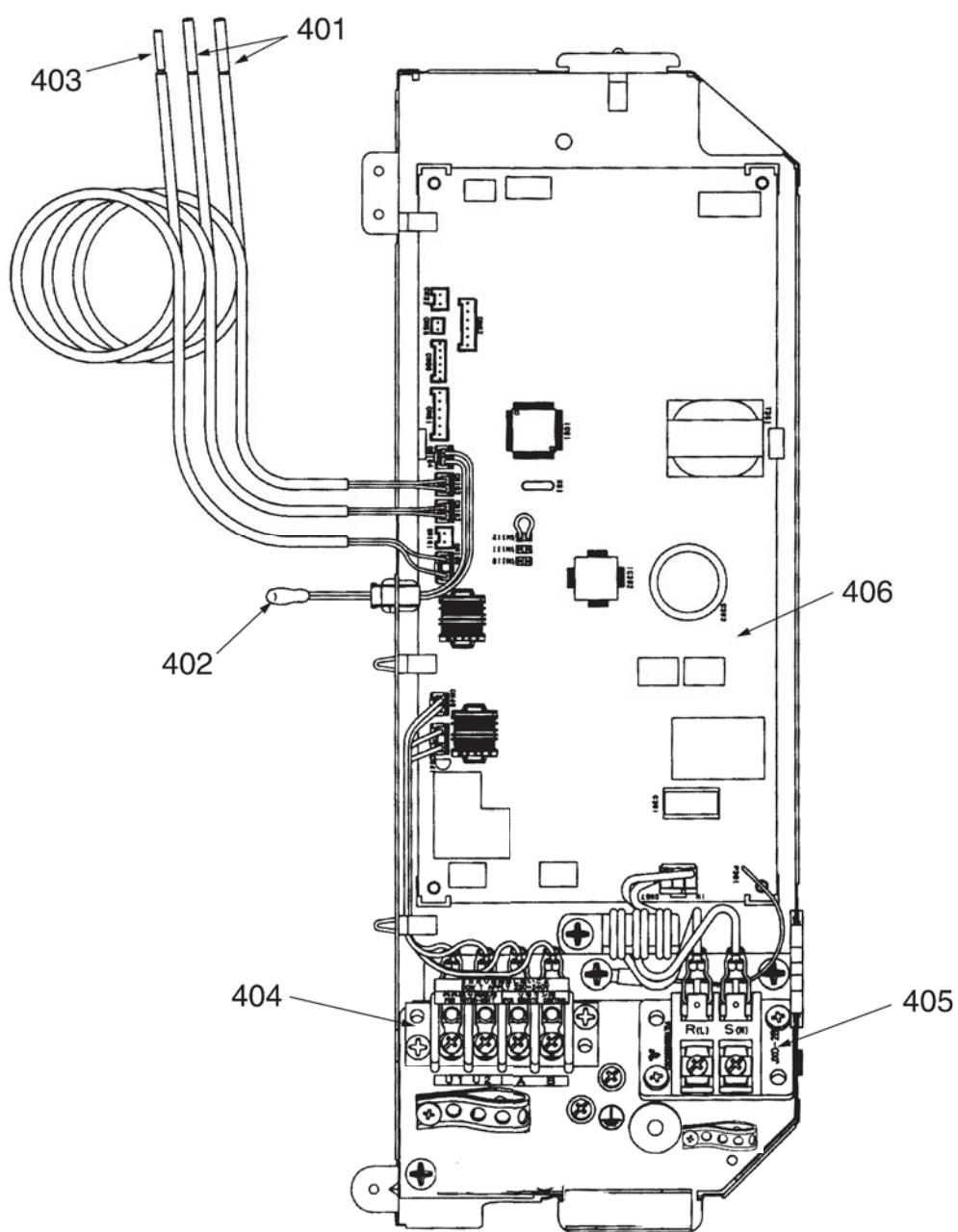


MMU-AP0181MH2UL, AP0151MH2UL

MMU-AP0121MH2UL, AP0091NH2UL, AP0071MH2UL

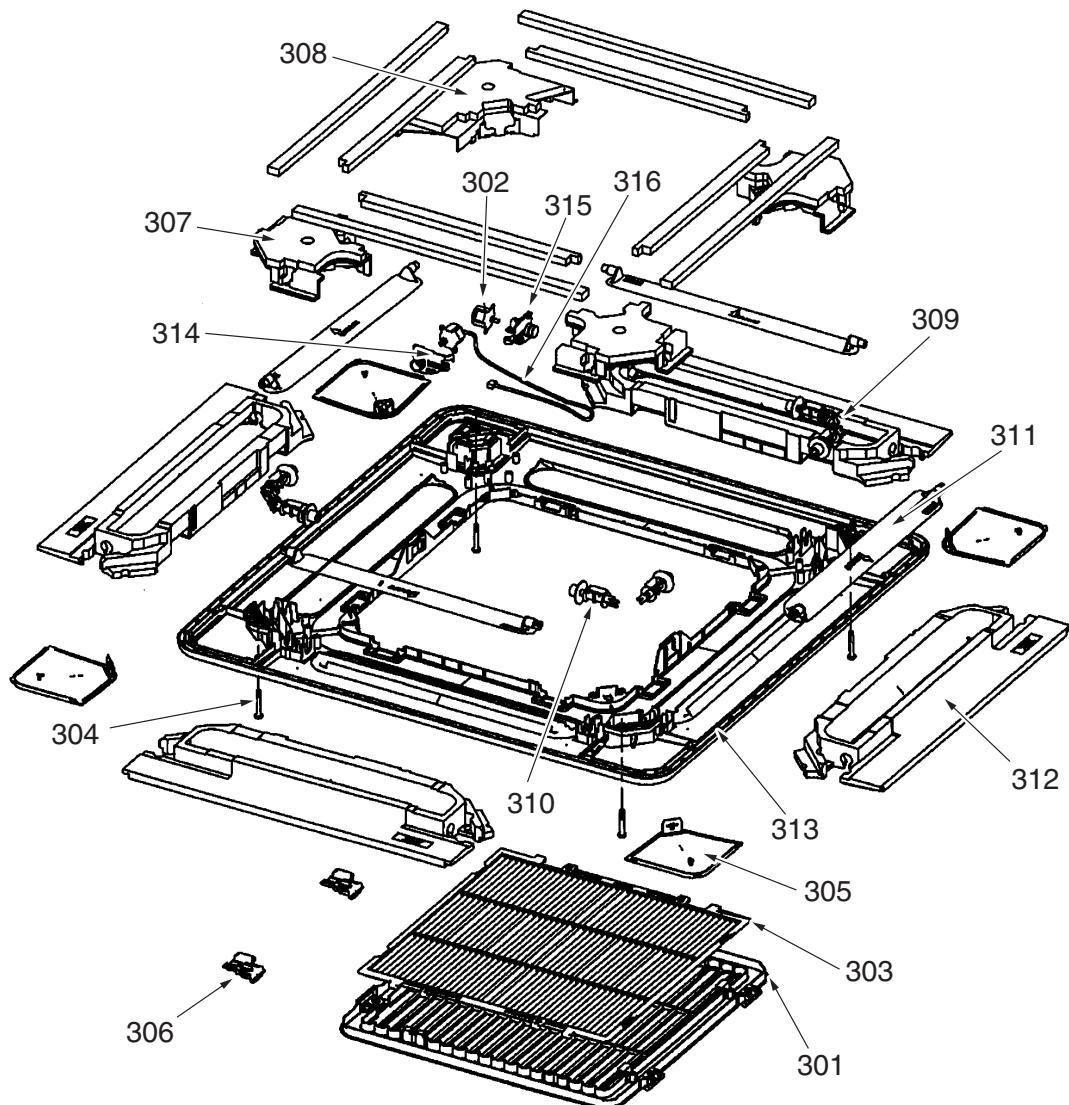
Location No.	Part No.	Description	Model Name MMU-AP				
			0071MH2UL	0091MH2UL	0121MH2UL	0151MH2UL	0181MH2UL
201	43120225	FAN, ASSY TURBO,TG321	1	1	1	1	1
202	43122094	BELLMOUTH	1	1	1	1	1
203	43172220	PAN ASSY, DRAIN				1	1
204	43172219	PAN ASSY, DRAIN	1	1	1		
205	4312C072	MOTOR, FAN,SWF-340U60-1	1	1	1	1	1
206	4314N106	MOTOR, PMV,EFM-MD12TF-4	1	1	1	1	1
207	43146713	VALVE, PMV,EDM-B25YGT-3	1	1	1		
208	43146714	VALVE, PMV,EDM-B40YGT-3				1	1
209	4314J263	REFRIGERATION CYCLE ASSY,2L,9STEP,4PASS				1	1
210	4314J264	REFRIGERATION CYCLE ASSY,2L,9STEP,3PASS	1	1	1		
213	43047685	NUT, FLARE, 1/4 IN	1	1	1	1	1
214	43049776	SOCKET,3/8IN	1	1	1		
215	43149351	SOCKET,1/4IN	1	1	1	1	1
216	43047688	NUT, FLARE, 1/2, IN				1	1
217	43149353	SOCKET,1/2IN				1	1
218	43047609	BONNET	1	1	1		
219	43147195	BONNET, 1/2 IN				1	1
220	43049697	BONNET	1	1	1	1	1
221	43170244	HOSE, DRAIN,25A	1	1	1	1	1
222	43079249	BAND, HOSE	1	1	1	1	1
223	43060029	FILTER,N0ISE	2	2	2	2	2
224	43163052	HOLDER, LEAD, FAN MOTOR	1	1	1	1	1
225	43119482	COVER, ASSY BODY	1	1	1	1	1
226	43170248	HOSE, DRAIN	1	1	1	1	1
227	43119507	COVER, PIPE	1	1	1	1	1
228	43097212	NUT	1	1	1	1	1
229	43107215	HOLDER, SENSOR	1	1	1	1	1
230	43019904	HOLDER, SENSOR (TS)	2	2	2	2	2
231	43179135	BAND, HOSE	1	1	1	1	1
232	43149314	SHEET, PMV	1	1	1	1	1
233	43139137	RUBBER, CUSHION	3	3	3	3	3
234	43162056	COVER, E-BOX	1	1	1	1	1
235	43177015	PUMP, DRAIN,ADP-1406	1	1	1	1	1
236	43151289	SWITCH, FLOAT,FS-0218-103	1	1	1	1	1
237	43179126	RUBBER, PUMP DRAIN	3	3	3	3	3
238	43166013	REMOTE CONTROLLER,SX-TA01UE	1	1	1	1	1
239	43166015	REMOTE CONTROLLER,SX-UA01UE	1	1	1	1	1
240	43166014	REMOTE CONTROLLER,SX-TB01UE	1	1	1	1	1
241	43166016	REMOTE CONTROLLER,WX-TA01UES	1	1	1	1	1
245	43119514	GUARD, FAN	1	1	1	1	1
246	43149355	NUT, FLARE, 3/8, IN	1	1	1		
247	43197155	WASHER,25x6.5x2T	3	3	3	3	3
248	431S8137	LABEL, CAUTION	1	1	1	1	1
249	431S8138	LABEL, WARNING	1	1	1	1	1
250	43119515	PLATE ASSY	1	1	1	1	1
251	43119517	PLATE	1	1	1	1	1
252	43119518	PLATE	1	1	1	1	1
253	43119516	COVER, WIRE	1	1	1	1	1

Electric Parts



Location No.	Part No.	Description	Model Name MMU-AP				
			0071MH2UL	0091MH2UL	0121MH2UL	0151MH2UL	0181MH2UL
401	43050425	Sensor Ass'y, Service, TC (F6) : TC2, TCJ	2	2	2	2	2
402	43F50426	Sensor, Service, TA	1	1	1	1	1
403	43050320	Sensor Ass'y, Service, TG (F4) : TC1	1	1	1	1	1
404	43160574	Terminal, 4P	1	1	1	1	1
405	43160626	Terminal Block, 2P, 20A, 250V	1	1	1	1	1
406	4316V445	P.C. Board Ass'y, MCC-1402	1	1	1	1	1

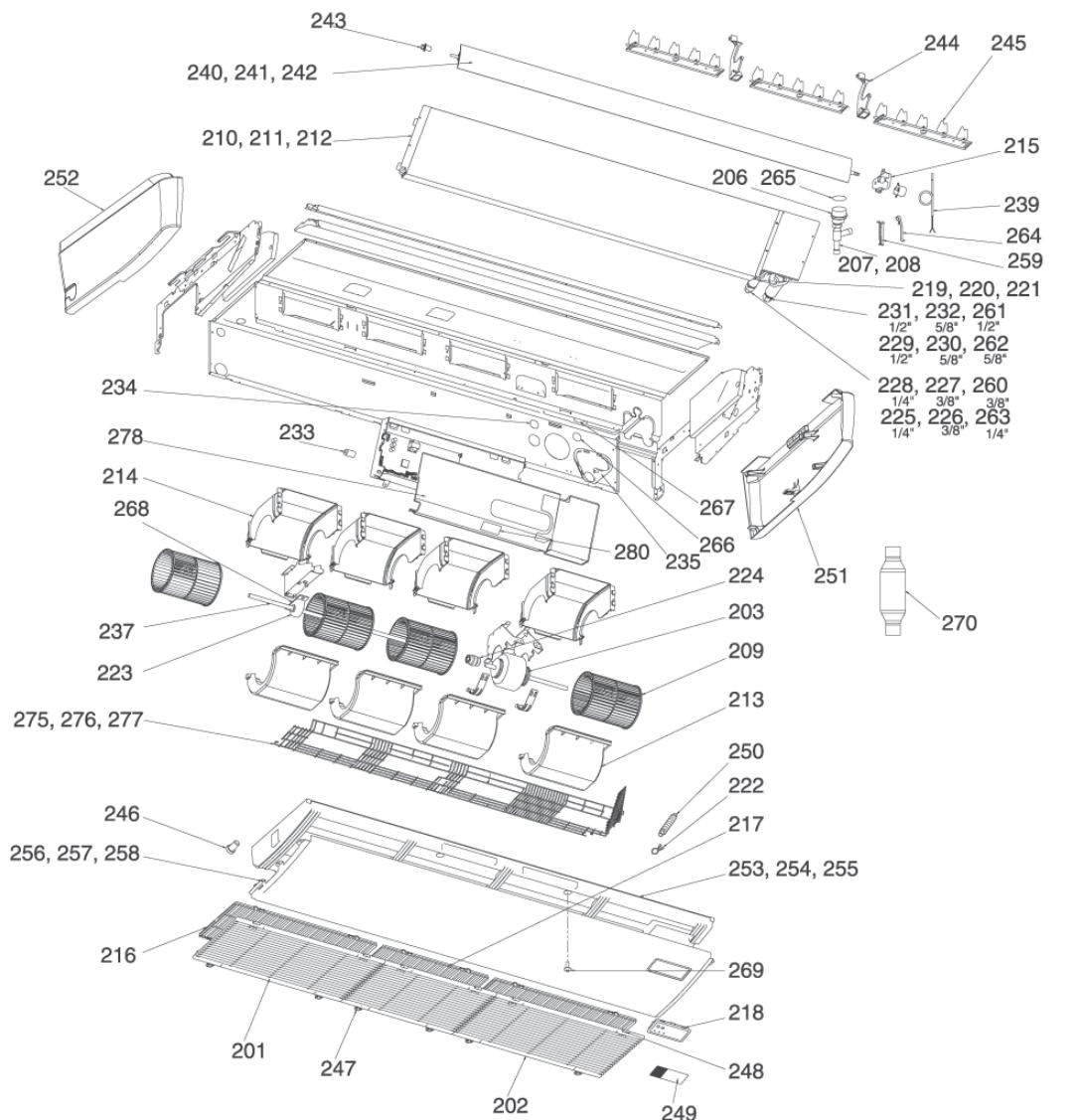
RBC-UM11PG(W)-UL



Location No.	Part No.	Description	Model Name	
		RBC-UM11PG (W)-UL		
301	43109427	GRILLE, AIR INLET	1	
302	4302D003	MOTOR, LOUVER	2	
303	43180332	AIR FILTER	1	
304	43497012	SCREW	4	
305	43100322	COVER, PANEL ASSY	4	
306	43107259	GRILLE, CATCH	2	
307	43122089	COVER, JOINT (FOR JOINT)	3	
308	43122090	COVER, JOINT (FOR MOTOR)	1	
309	43122091	JOINT, KIT(A)	2	
310	43122092	JOINT, KIT(B)	2	
311	43122093	LOUVER	4	
312	43107261	OUTLET, AIR FORM	4	
313	43100369	PANEL	1	
314	43107262	FIX, MOTOR	1	
315	43107263	FIX, MOTOR	1	
316	43160580	LEAD, MOTOR	1	

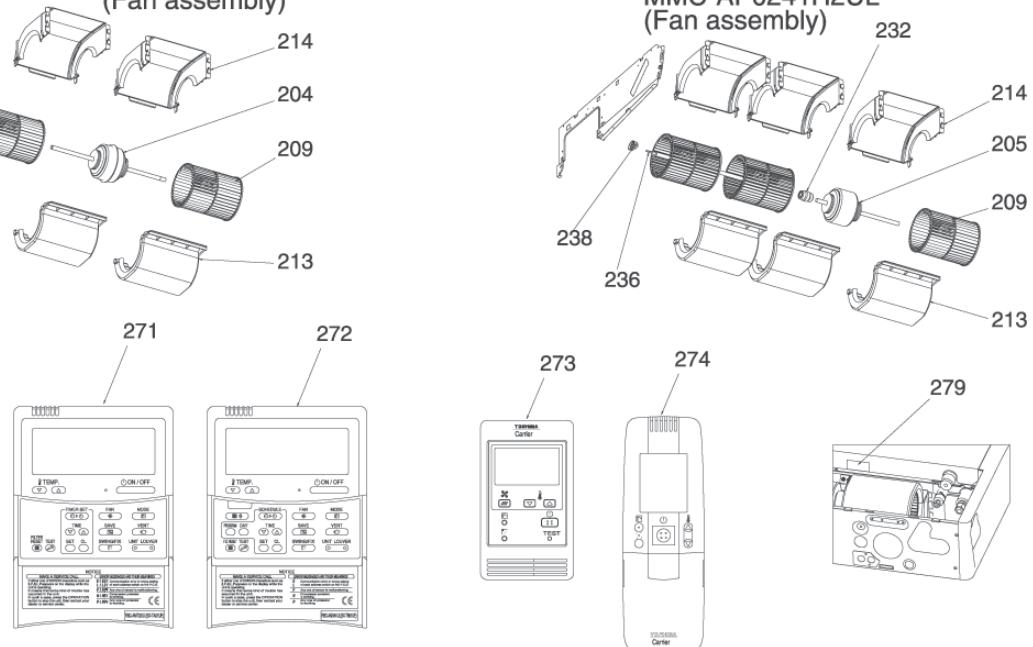
11-3. Ceiling Type

MMC-AP0181H2UL, AP0241H2UL, AP0361H2UL, AP0421H2UL



MMC-AP0181H2UL
(Fan assembly)

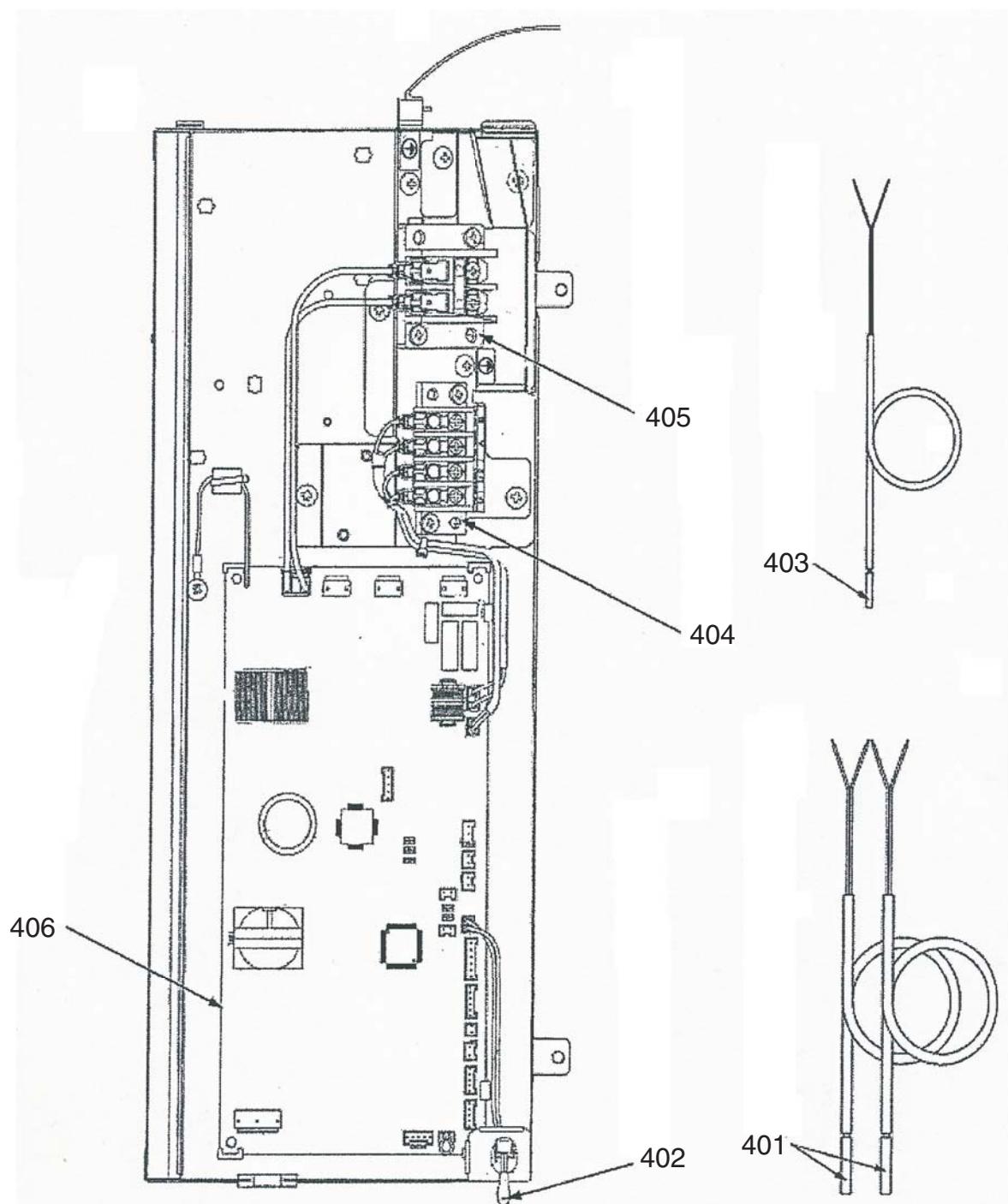
MMC-AP0241H2UL
(Fan assembly)



Location No.	Parts No.	Description	Model Name MMC-AP			
			0181H2UL	0241H2UL	0361H2UL	0421H2UL
201	43109407	GRILLE, INLET	2		1	1
202	43109408	GRILLE, INLET		2	2	2
203	4312C057	MOTOR, FAN,SWF-340U120-2A			1	1
204	4312C055	MOTOR, FAN,SWF-340U60-1A	1			
205	4312C056	MOTOR, FAN,SWF-340U60-2A		1		
206	43146707	MOTOR, PMV, EDM-MD12TF-3	1	1	1	1
207	43146723	BODY, PMV			1	1
208	43146714	VALVE, PMV,EDM-B40YGTF-3	1	1		
209	43120227	FAN, MULTI BLADE,140DIA,180L	2	3	4	4
210	4314J355	REFRIGERATION CYCLE ASSY	1			
211	4314J356	REFRIGERATION CYCLE ASSY		1		
212	4314J357	REFRIGERATION CYCLE ASSY			1	1
213	43122084	CASE, FAN, LOWER	2	3	4	4
214	43122085	CASE, FAN, UPPER	2	3	4	4
215	43121746	DRIVER A'SSY HORIZONTAL LOUVER	1	1	1	1
216	43180314	AIR FILTER	2		1	1
217	43180315	AIR FILTER		2	2	2
218	43108014	BASE, RECEIVER	1	1	1	1
219	43147738	DISTRIBUTOR ASSY	1			
220	43147739	DISTRIBUTOR ASSY		1		
221	43147740	DISTRIBUTOR ASSY			1	1
222	43179136	BAND, HOSE	2	2	2	2
223	43125131	BEARING, SHAFT			1	1
224	43125162	COUPLING		1	1	1
225	43047685	NUT, FLARE, 1/4 IN	1			
226	43149355	NUT, FLARE, 3/8, IN		1	1	1
227	43049776	SOCKET,3/8IN		1	1	1
228	43149351	SOCKET,1/4IN	1			
229	43047688	NUT, FLARE, 1/2, IN	1			
230	43149352	NUT, FLARE, 5/8, IN		1	1	1
231	43149353	SOCKET,1/2IN	1			
232	43149354	SOCKET,5/8IN		1	1	1
233	43060029	FILTER,NOISE		4	4	4
234	43196012	BUSHING	1	1	1	1
235	43149326	COVER, BACK BASE	1	1	1	1
236	43125164	SHAFT		1		
237	43125165	SHAFT			1	1
238	43125171	BEARING ASSY, MOLD		1		
239	43160556	LEAD, LOUVER HORIZONTAL	1	1	1	1
240	43109409	GRILLE A'SSY, HORIZONTAL	1			

Location No.	Parts No.	Description	Model Name MMC-AP			
			0181H2UL	0241H2UL	0361H2UL	0421H2UL
241	43109410	GRILLE A'SSY, HORIZONTAL		1		
242	43109411	GRILLE A'SSY, HORIZONTAL			1	1
243	43107252	SHAFT, HORIZONTAL LOUVER	1	1	1	1
244	43107260	SUPPORT, GRILLE HORIZONTAL	1	1	2	2
245	43122086	GRILLE A'SSY, VERTICAL	2	2	3	3
246	43179129	CAP DRAIN	1	1	1	1
247	43107254	HINGE, GRILLE INLET	4	4	6	6
248	43107255	HOOK, GRILLE INLET	4	4	6	6
249	43108020	MARK, TOSHIBA	1	1	1	1
250	43170234	HOSE, DRAIN	1	1	1	1
251	43102647	COVER, SIDE (RIGHT)	1	1	1	1
252	43102648	COVER, SIDE (LEFT)	1	1	1	1
253	43172188	PAN DRAIN, ASS'Y	1			
254	43172189	PAN DRAIN, ASS'Y		1		
255	43172190	PAN DRAIN, ASS'Y			1	1
256	43100356	PANEL, UNDER	1			
257	43100357	PANEL, UNDER		1		
258	43100358	PANEL, UNDER			1	1
259	43107215	HOLDER, SENSOR	1	1	1	1
260	43047609	BONNET		1	1	1
261	43147195	BONNET, 1/2 IN	1			
262	43194029	BONNET		1	1	1
263	43049697	BONNET	1			
264	43019904	HOLDER, SENSOR (TS)	2	2	2	2
265	43149314	SHEET, PMV	1	1	1	1
266	43196010	BUSHING	1	1	1	1
267	43162050	BUSHING 56DIA	1	1	1	1
268	43139153	SPACER, BEARING			2	2
269	43197189	SCREW, FIX DRAIN PAN	1	1	2	2
270	43147664	STRAINER	1	1	1	1
271	43166013	REMOTE CONTROLLER,SX-TA01UE	1	1	1	1
272	43166014	REMOTE CONTROLLER,SX-TB01UE	1	1	1	1
273	43166015	REMOTE CONTROLLER,SX-UA01UE	1	1	1	1
274	43166016	REMOTE CONTROLLER,WX-TA01UES	1	1	1	1
275	43107283	GUARD, FAN	1			
276	43107282	GUARD, FAN		1		
277	43107281	GUARD, FAN			1	1
278	43162059	COVER, E-PARTS	1	1	1	1
279	431S8137	LABEL, CATION	1	1	1	1
280	431S8138	LABEL, WARNING	1	1	1	1

Electric Parts



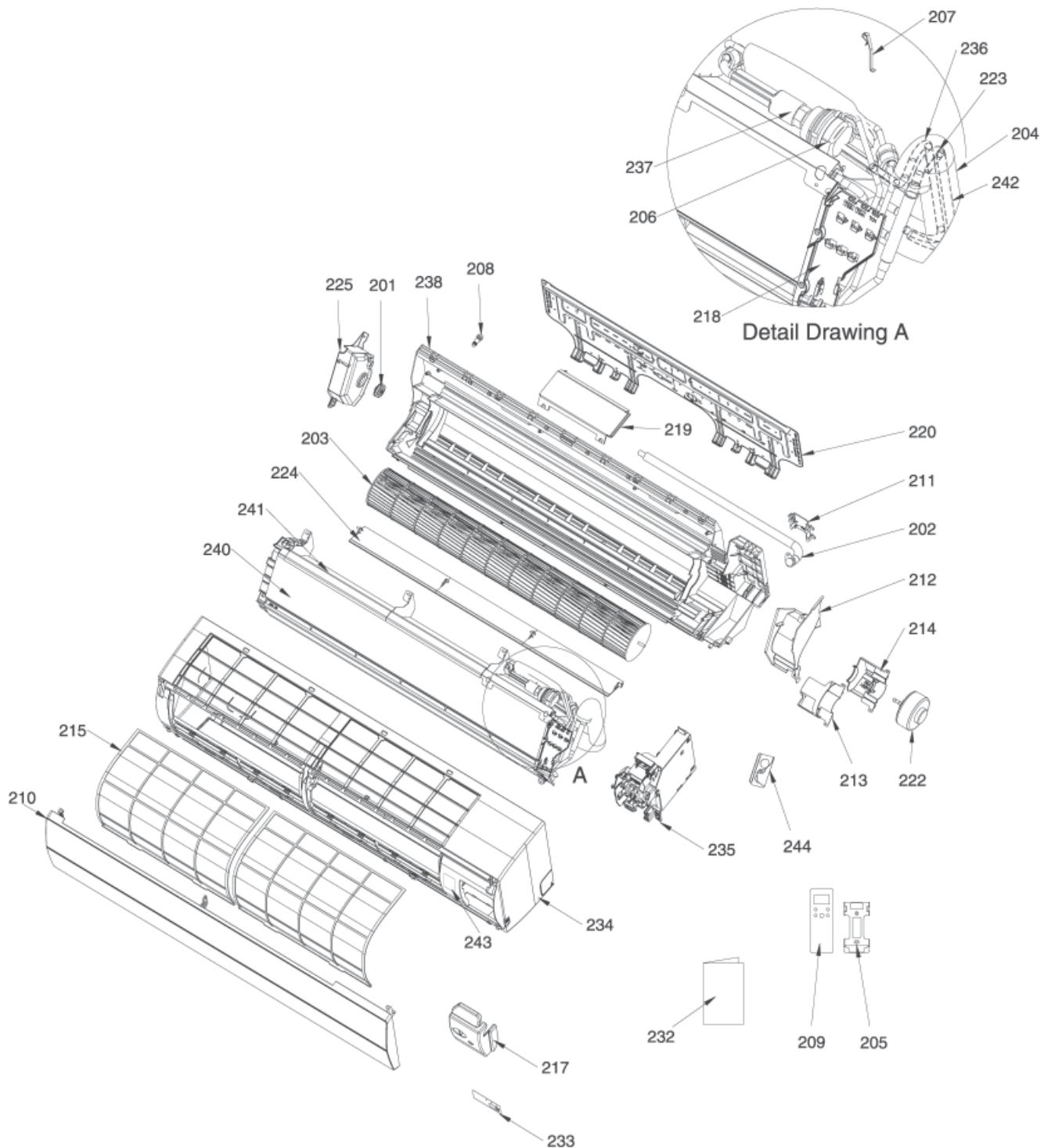
Location No.	Parts No.	Description	Model Name MMC-			
			AP0181H2UL	AP0241H2UL	AP0361H2UL	AP02421H2UL
401	43050425	Sensor Ass'y, Service, TC (F6) : TC2, TCJ	2	2	2	2
402	43F50426	Sensor, Service, TA	1	1	1	1
403	43150320	Sensor Ass'y, Service, TG (F4) : TC1	1	1	1	1
404	43160574	Terminal, 4P	1	1	1	1
405	43160626	Terminal Block, 2P, 20A, 250V	1	1	1	1
406	4316V445	P.C. Board Ass'y, MCC-1402	1	1	1	1

11-4.High Wall Type

MMK-AP0073H2UL, AP0093H2UL, AP0123H2UL

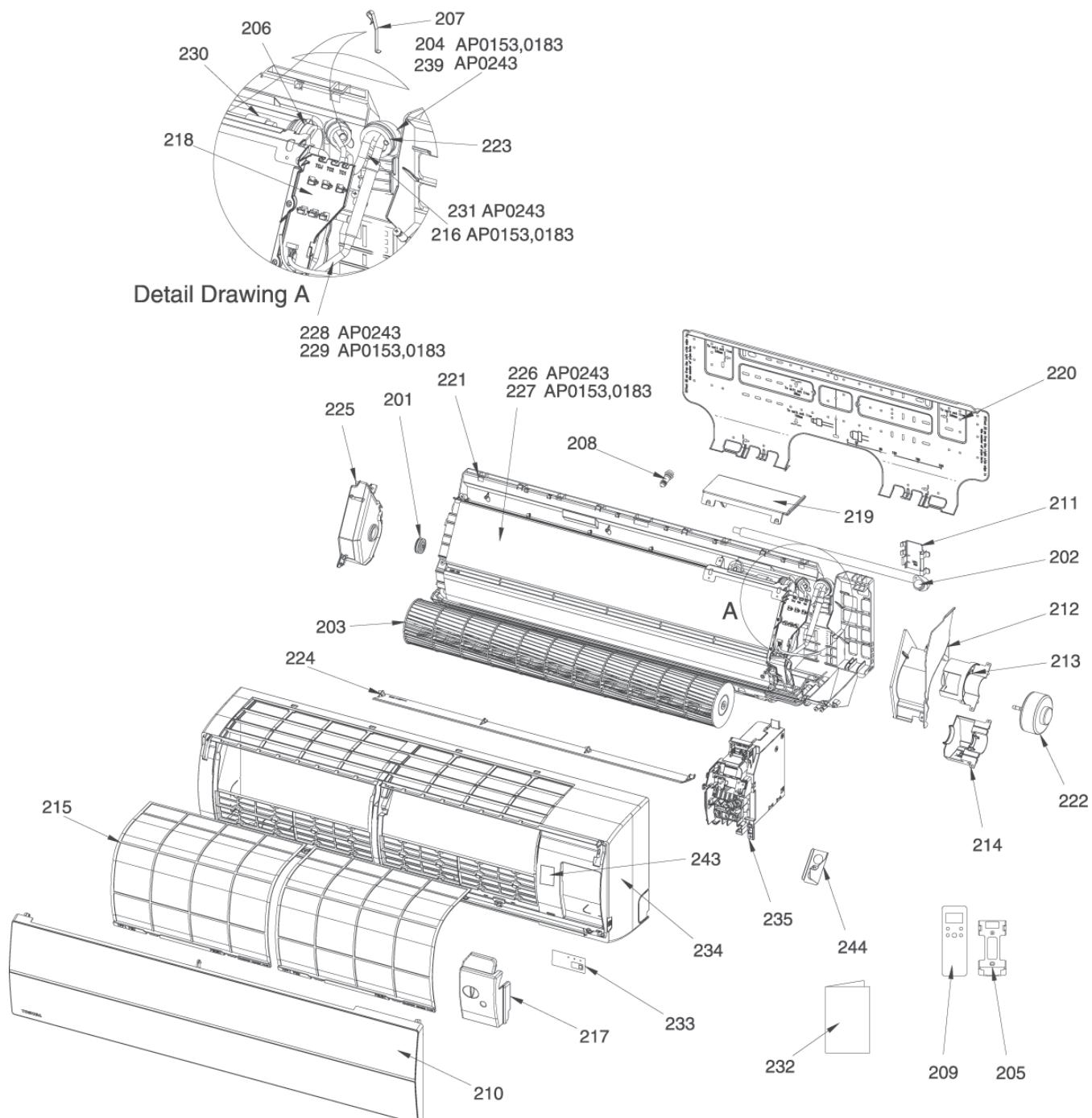
CAUTION

For orders of the service parts for High Wall type air conditioners, please check the service parts on Web site of [TOSHIBA CARRIER THAILAND CO., Ltd.], and then place an order for parts to (TOSHIBA CARRIER THAILAND CO., Ltd.).



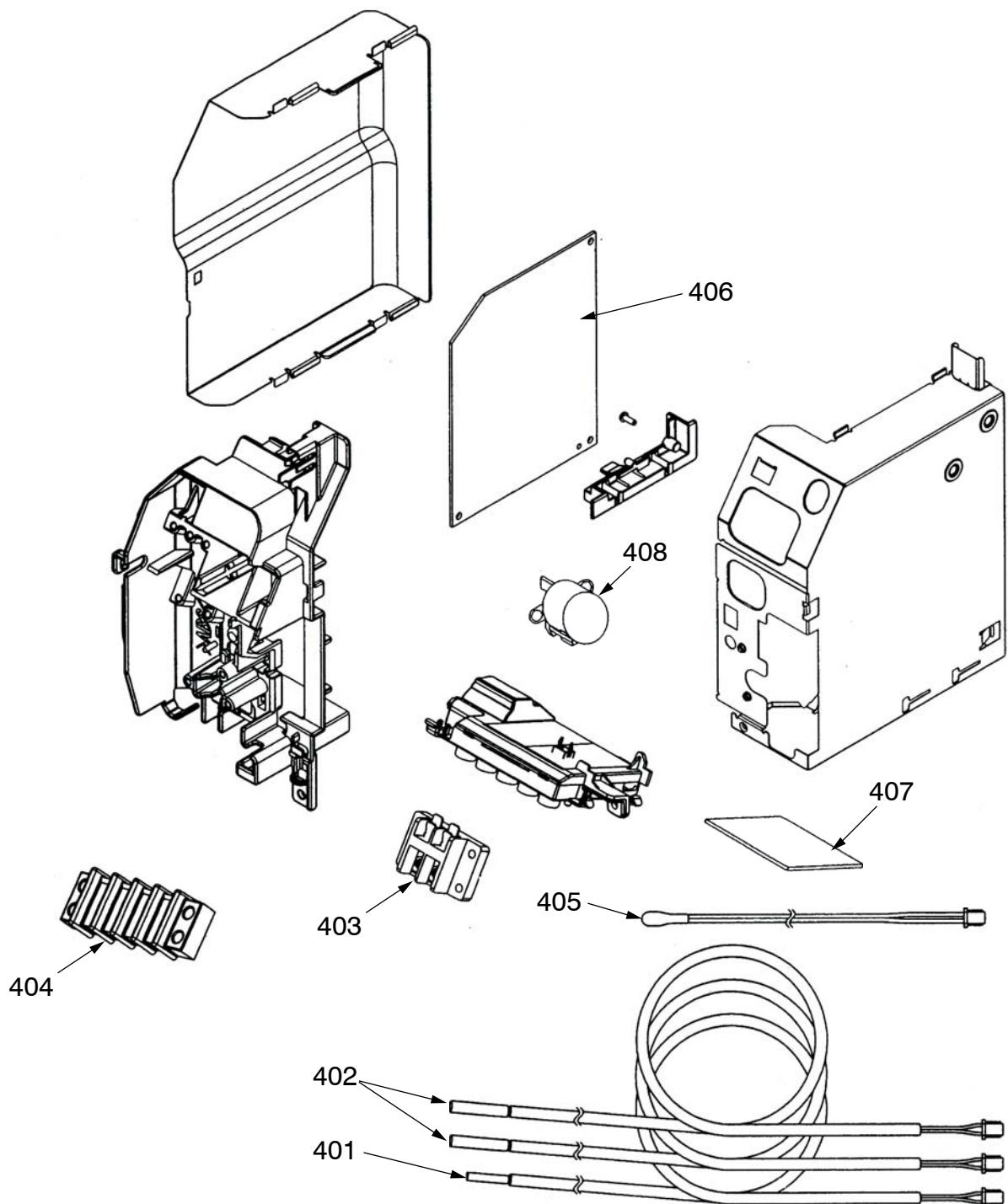
Location No.	Parts No.	Description	Model Name MMK-AP		
			0073H2UL	0093H2UL	0123H2UL
201	43T22312	Bearing Ass'y	1	1	1
202	43T70313	Hose, Drain	1	1	1
203	43T20016	Fan Ass'y, Cross Flow	1	1	1
204	43T49010	Pipe, Shield	1	1	1
205	43T83003	Holder, Remote Controller	1	1	1
206	43T46029	Motor, PMV	1	1	1
207	43T19333	Holder, Sensor	2	2	2
208	43T79313	Cap, Drain	1	1	1
209	43T69085	Remote Controller, Wireless,WH-L14SE	1	1	1
210	43T00058	Grille Ass'y	1	1	1
211	43T49043	Holder, Pipe	1	1	1
212	43T39026	Band, Motor, Left	1	1	1
213	43T39022	Band, Motor, Right Up	1	1	1
214	43T39023	Band, Motor, Right Down	1	1	1
215	43T80019	Air Filter	2	2	2
217	43T62031	Cover, Terminal	1	1	1
218	43T39024	Drain Guide	1	1	1
219	43T49044	Cover PMV	1	1	1
220	43T82010	Plate, Installation	1	1	1
222	43T21032	Motor, Fan, ICF-340U30-1	1	1	1
223	43T07023	Holder, Sensor	1	1	1
224	43T09045	Louver, Horizontal	1	1	1
225	43T22011	Bearing, Base	1	1	1
232	43T85510	Owner's Manual	1	1	1
233	43T15002	Display	1	1	1
234	43T00057	Panel Ass'y	1	1	1
235	43T62032	Clamp, Base Ass'y	1	1	1
236	43T47044	Pipe, Inlet	1	1	1
237	43T46031	Body, PMV, EDM-25YGTCTH-1	1	1	1
238	43T03018	Body Ass'y, Back	1	1	1
240	43T44037	Evaporator Ass'y	1	1	1
241	43T39027	Plate, Back	1	1	1
242	43T47043	Pipe, Outlet	1	1	1
243	43T85074	Label,Wiring	1	1	1
244	43T19347	Plate	1	1	1

MMK-AP0153H, AP0183H, AP0243H



Location No.	Parts No.	Description	Model Name MMK-AP		
			0153H2UL	0183H2UL	0243H2UL
201	43T22312	Bearing Ass'y	1	1	1
202	43T70313	Hose, Drain	1	1	1
203	43T20016	Fan Ass'y, Cross Flow	1	1	1
204	43T49010	Pipe, Shield	1	1	
205	43T83003	Holder, Remote Controller	1	1	1
206	43T46029	Motor, PMV	1	1	1
207	43T19333	Holder, Sensor	2	2	2
208	43T79313	Cap, Drain	1	1	1
209	43T69085	Remote Controller, Wireless,WH-L14SE	1	1	1
210	43T00058	Grille Ass'y	1	1	1
211	43T49043	Holder, Pipe	1	1	1
212	43T39026	Band, Motor, Left	1	1	1
213	43T39022	Band, Motor, Right Up	1	1	1
214	43T39023	Band, Motor, Right Down	1	1	1
215	43T80019	Air Filter	2	2	2
216	43T47045	Pipe, Inlet	1	1	
217	43T62031	Cover, Terminal	1	1	1
218	43T39024	Drain Guide	1	1	1
219	43T49044	Cover PMV	1	1	1
220	43T82010	Plate, Installation	1	1	1
221	43T03017	Body, Ass'y, Back	1	1	1
222	43T21032	Motor, Fan, ICF-340U30-1	1	1	1
223	43T07023	Holder, Sensor	1	1	1
224	43T09045	Louver, Horizontal	1	1	1
225	43T22011	Bearing, Base	1	1	1
226	43T44034	Evaporator Ass'y			1
227	43T44035	Evaporator Ass'y	1	1	
228	43T47039	Pipe, Outlet			1
229	43T47040	Pipe, Outlet	1	1	
230	43T46032	Body, PMV, EDM-40YGTCTH-1	1	1	1
231	43T47041	Pipe, Inlet			1
232	43T85510	Owner's Manual	1	1	1
233	43T15002	Display	1	1	1
234	43T00057	Panel Ass'y	1	1	1
235	43T62032	Clamp, Base Ass'y	1	1	1
239	43T49045	Pipe, Shield			1
243	43T85074	Label,Wiring	1	1	1
244	43T19347	Plate	1	1	1

Electric Parts



Location No.	Part No.	Description	Model Name MMK-AP					
			0073H2UL	0093H2UL	0123H2UL	0153H2UL	0183H2UL	0243H2UL
401	43T50012	Sensor, Heat Exchanger : TC1	1	1	1	1	1	1
402	43T50304	Sensor Ass'y : TC2, TCJ	2	2	2	2	2	2
403	43T60414	Terminal Block, 2P, 20A	1	1	1	1	1	1
404	43T60079	Terminal Block, 4P, 1A	1	1	1	1	1	1
405	43T69320	Sensor (TA)	1	1	1	1	1	1
406	43T69906	P.C. Board Ass'y, MCC-1510	1	1	1	1	1	1
407	43T69084	P.C. Board Ass'y, MCC-5044	1	1	1	1	1	1
408	43T21397	Louver, Motor, MP24Z3T	1	1	1	1	1	1

WARNINGS ON REFRIGERANT LEAKAGE

Important

Check of Concentration Limit

The room in which the air conditioner is to be installed requires a design that in the event of refrigerant gas leaking out, its concentration will not exceed a set limit.

The refrigerant R410A which is used in the air conditioner is safe, without the toxicity or combustibility of ammonia, and is not restricted by laws to be imposed which protect the ozone layer. However, since it contains more than air, it poses the risk of suffocation if its concentration should rise excessively. Suffocation from leakage of R410A is almost non-existent. With the recent increase in the number of high concentration buildings, however, the installation of multi air conditioner systems is on the increase because of the need for effective use of floor space, individual control, energy conservation by curtailing heat and carrying power etc.

Most importantly, the multi air conditioner system is able to replenish a large amount of refrigerant compared with conventional individual air conditioners. If a single unit of the multi conditioner system is to be installed in a small room, select a suitable model and installation procedure so that if the refrigerant accidentally leaks out, its concentration does not reach the limit (and in the event of an emergency, measures can be made before injury can occur).

In a room where the concentration may exceed the limit, create an opening with adjacent rooms, or install mechanical ventilation combined with a gas leak detection device.

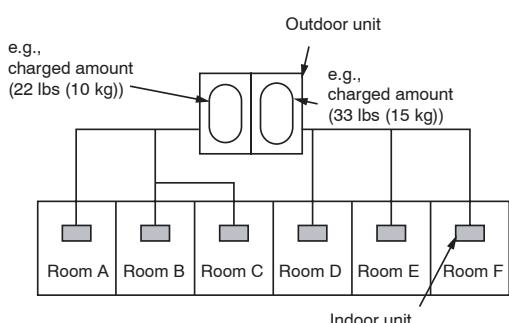
The concentration is as given below.

$$\frac{\text{Total amount of refrigerant (lbs (kg))}}{\text{Min. volume of the indoor unit installed room (ft}^3\text{ (m}^3\text{))}} \leq \text{Concentration limit (lbs/ft}^3\text{ (kg/m}^3\text{))}$$

Refrigerant Concentration Limit shall be in accordance with local regulations.

NOTE 1 :

If there are 2 or more refrigerating systems in a single refrigerating device, the amounts of refrigerant should be as charged in each independent device.



For the amount of charge in this example:

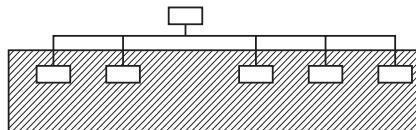
The possible amount of leaked refrigerant gas in rooms A, B and C is 22 lbs (10kg).

The possible amount of leaked refrigerant gas in rooms D, E and F is 33 lbs (15kg).

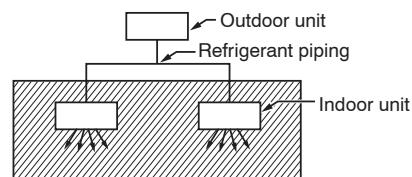
NOTE 2 :

The standards for minimum room volume are as follows.

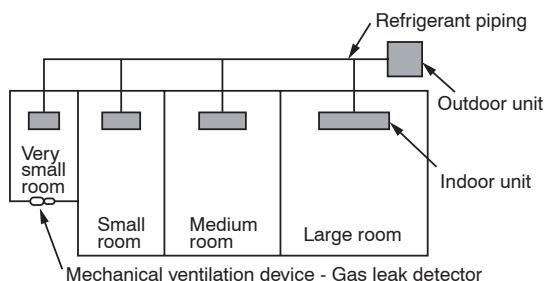
- 1) No partition (shaded portion)



- 2) When there is an effective opening with the adjacent room for ventilation of leaking refrigerant gas (opening without a door, or an opening 0.15% or larger than the respective floor spaces at the top or bottom of the door).



- 3) If an indoor unit is installed in each partitioned room and the refrigerant piping is interconnected, the smallest room of course becomes the object. But when a mechanical ventilation is installed interlocked with a gas leakage detector in the smallest room where the density limit is exceeded, the volume of the next smallest room becomes the object.



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Revision record

First issue	—	—	Mar., 2011
Revision 1	File volume down. Additional model of 4-way cassette AP015 type.	P1, P8, P12, P23, P27, P63, P140, P154, P155, P156	Feb., 2013
Revision 2	4-Way Cassette weight changed Compact 4-Way Cassette weight changed	P8, P9	Sep., 2014
	4-Way Cassette CONSTRUCTION VIEWS changed Compact 4-way Cassette CONSTRUCTION VIEWS changed	P12, P13, P14 P15, P16	
Revision 3	Change of service part number of PMV motor.	P163	Oct., 2014
Revision 4	Additional model of 4-way cassette AP007, AP009 and AP012 type.	P1, P8, P11, P23, P27, P63, P145, P148, P149, P150	Jun., 2015
Revision 5	Additional model of 4-way cassette AP007 (MMU-AP0072H2UL-1)	P1, P8, P11, P23, P141, P151, P152, P153	Apr., 2016
Revision 6	The contents change of Description of service parts	P150, P153, P156, P159, P164, P169, P174	Jun., 2017
Revision 7	Deleted the word.	P104	Nov., 2021
Revision 8	Changed the service part number of PMV valve.	P155	Oct., 2024