

SPLIT-TYPE, HEAT PUMP AIR CONDITIONERS
SPLIT-TYPE, AIR CONDITIONERS

April 2009

No.OC369

REVISED EDITION-D

SERVICE MANUAL

Series PKA Wall Mounted R410A

**Indoor unit
[Model names]**

PKA-A12GA

PKA-A18GA

PKA-A24FA

PKA-A30FA

PKA-A36FA

PKA-A12GAL

PKA-A18GAL

PKA-A24FAL

PKA-A30FAL

PKA-A36FAL

[Service Ref.]

PKA-A12GA PKA-A12GA₁ PKA-A12GA₂

PKA-A18GA PKA-A18GA₁ PKA-A18GA₂

PKA-A24FA PKA-A24FA₁ PKA-A24FA₂

PKA-A30FA PKA-A30FA₁ PKA-A30FA₂

PKA-A36FA PKA-A36FA₁ PKA-A36FA₂

PKA-A12GAL PKA-A12GAL₁ PKA-A12GAL₂

PKA-A18GAL PKA-A18GAL₁ PKA-A18GAL₂

PKA-A24FAL PKA-A24FAL₁ PKA-A24FAL₂

PKA-A30FAL PKA-A30FAL₁ PKA-A30FAL₂

PKA-A36FAL PKA-A36FAL₁ PKA-A36FAL₂

Revision:

- "14. RoHS PARTS LIST" has been modified.

- Please void OC369 REVISED EDITION-C.

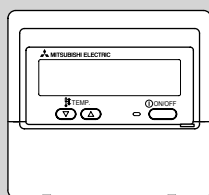
NOTE:

- This manual describes only service data of the indoor units.
- RoHS compliant products have <G> mark on the spec name plate.
- For servicing RoHS compliant products, refer to the RoHS PARTS LIST.

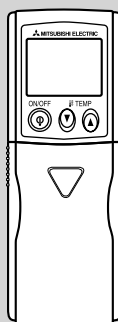


Indoor unit
PKA-A12GA PKA-A18GA
PKA-A12GAL PKA-A18GAL

Model name indication



**WIRED REMOTE
CONTROLLER**



**WIRELESS REMOTE
CONTROLLER**

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Mr. SLIM™

Revision :

"14. RoHS PARTS LIST" has been modified on page 53.

Page	Revise point	Service Ref.	Incorrect	Correct
53	STRUCTUAL PARTS No. 2 CORNER COVER	PKA-A12/18GA(L) PKA-A12/18GA(L) ₁	R01 10Y 658	R01 08Y 658
	STRUCTUAL PARTS No. 11 CORNER COVER	PKA-A12/18GA(L) ₂	R01 08Y 658	R01 10Y 658

1 TECHNICAL CHANGES

PKA-A12GA₁ → PKA-A12GA₂
 PKA-A18GA₁ → PKA-A18GA₂
 PKA-A24FA₁ → PKA-A24FA₂
 PKA-A30FA₁ → PKA-A30FA₂
 PKA-A36FA₁ → PKA-A36FA₂
 PKA-A12GAL₁ → PKA-A12GAL₂
 PKA-A18GAL₁ → PKA-A18GAL₂
 PKA-A24FAL₁ → PKA-A24FAL₂
 PKA-A30FAL₁ → PKA-A30FAL₂
 PKA-A36FAL₁ → PKA-A36FAL₂

• Indoor controller board (I.B) has been changed (11. SPECIAL FUNCTION is added).

PKA-A12GA → PKA-A12GA₁
 PKA-A18GA → PKA-A18GA₁
 PKA-A24FA → PKA-A24FA₁
 PKA-A30FA → PKA-A30FA₁
 PKA-A36FA → PKA-A36FA₁
 PKA-A12GAL → PKA-A12GAL₁
 PKA-A18GAL → PKA-A18GAL₁
 PKA-A24FAL → PKA-A24FAL₁
 PKA-A30FAL → PKA-A30FAL₁
 PKA-A36FAL → PKA-A36FAL₁

• Indoor controller board (I.B) has been changed.

2 REFERENCE MANUAL

2-1. OUTDOOR UNIT SERVICE MANUAL

Service Ref.	Service Manual No.
PUZ-A18/24/30/36/42NHA PUZ-A18/24/30/36/42NHA-BS PUY-A12/18/24/30/36/42NHA ₍₁₎ PUY-A12/18/24/30/36/42NHA ₍₁₎ -BS	OC367
PUZ-HA36NHA	OCH426 OCB426

2-2. TECHNICAL DATA BOOK

Series (Outdoor unit)	Data Book No.
PUZ-A·NHA(-BS) PUY-A·NHA(-BS)	OCS04
PUZ-HA36NHA	OCS12

3-1. ALWAYS OBSERVE FOR SAFETY

Before obtaining access to terminals, all supply circuits must be disconnected.

3-2. CAUTIONS RELATED TO NEW REFRIGERANT

Caution for units utilizing refrigerant R410A

Use new refrigerant pipes.

Make sure that the inside and outside of refrigerant piping is clean and it has no contamination such as sulfur hazardous for use, oxides, dirt, shaving particles, etc. In addition, use pipes with specified thickness.

Contamination inside refrigerant piping can cause deterioration of refrigerant oil etc.

Store the piping to be used indoors during installation and both ends of the piping sealed until just before brazing. (Leave elbow joints, etc. in their packaging.)

If dirt, dust or moisture enters into refrigerant cycle, that can cause deterioration of refrigerant oil or malfunction of compressor.

Use ester oil, ether oil or alkylbenzene oil (small amount) as the refrigerant oil applied to flares and flange connections.

If large amount of mineral oil enters, that can cause deterioration of refrigerant oil etc.

Charge refrigerant from liquid phase of gas cylinder.

If the refrigerant is charged from gas phase, composition change may occur in refrigerant and the efficiency will be lowered.

Do not use refrigerant other than R410A.

If other refrigerant (R22 etc.) is used, chlorine in refrigerant can cause deterioration of refrigerant oil etc.

Use a vacuum pump with a reverse flow check valve.

Vacuum pump oil may flow back into refrigerant cycle and that can cause deterioration of refrigerant oil etc.

Use the following tools specifically designed for use with R410A refrigerant.

The following tools are necessary to use R410A refrigerant.

Tools for R410A	
Gauge manifold	Flare tool
Charge hose	Size adjustment gauge
Gas leak detector	Vacuum pump adaptor
Torque wrench	Electronic refrigerant charging scale

Handle tools with care.

If dirt, dust or moisture enters into refrigerant cycle, that can cause deterioration of refrigerant oil or malfunction of compressor.

Do not use a charging cylinder.

If a charging cylinder is used, the composition of refrigerant will change and the efficiency will be lowered.

Ventilate the room if refrigerant leaks during operation. If refrigerant comes into contact with a flame, poisonous gases will be released.

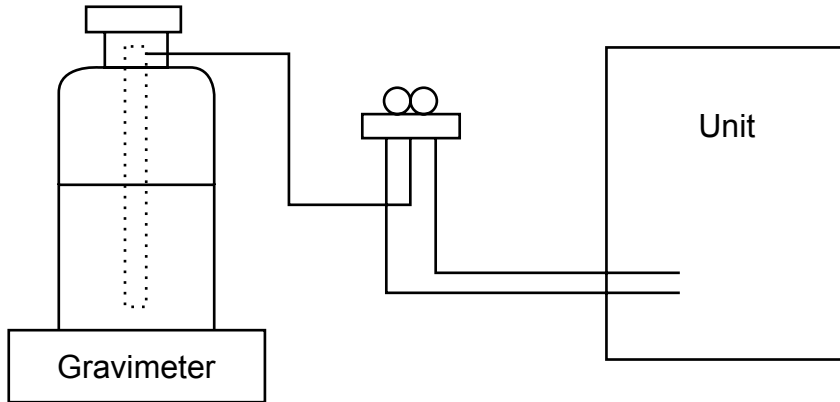
[1] Cautions for service

- (1) Perform service after recovering the refrigerant left in unit completely.
- (2) Do not release refrigerant in the air.
- (3) After completing service, charge the cycle with specified amount of refrigerant.
- (4) When performing service, install a filter drier simultaneously.
Be sure to use a filter drier for new refrigerant.

[2] Additional refrigerant charge

When charging directly from cylinder

- Check that cylinder for R410A on the market is syphon type.
- Charging should be performed with the cylinder of syphon stood vertically. (Refrigerant is charged from liquid phase.)



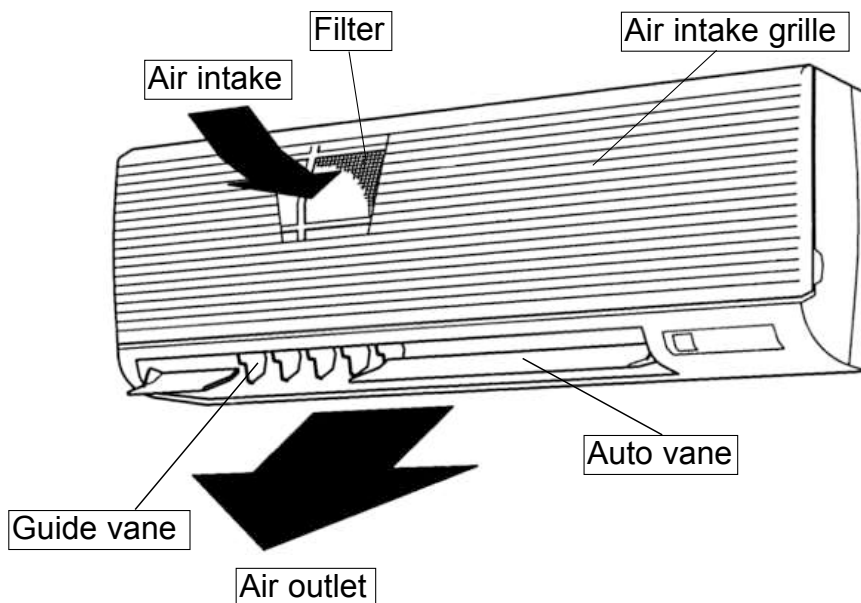
[3] Service tools

Use the below service tools as exclusive tools for R410A refrigerant.

No.	Tool name	Specifications
①	Gauge manifold	· Only for R410A
		· Use the existing fitting specifications. (UNF1/2)
		· Use high-tension side pressure of 5.3MPa·G or over.
②	Charge hose	· Only for R410A
		· Use pressure performance of 5.09MPa·G or over.
③	Electronic scale	—
④	Gas leak detector	· Use the detector for R134a, R407C or R410A.
⑤	Adaptor for reverse flow check	· Attach on vacuum pump.
⑥	Refrigerant charge base	—
⑦	Refrigerant cylinder	· Only for R410A · Top of cylinder (Pink)
		· Cylinder with syphon
⑧	Refrigerant recovery equipment	—

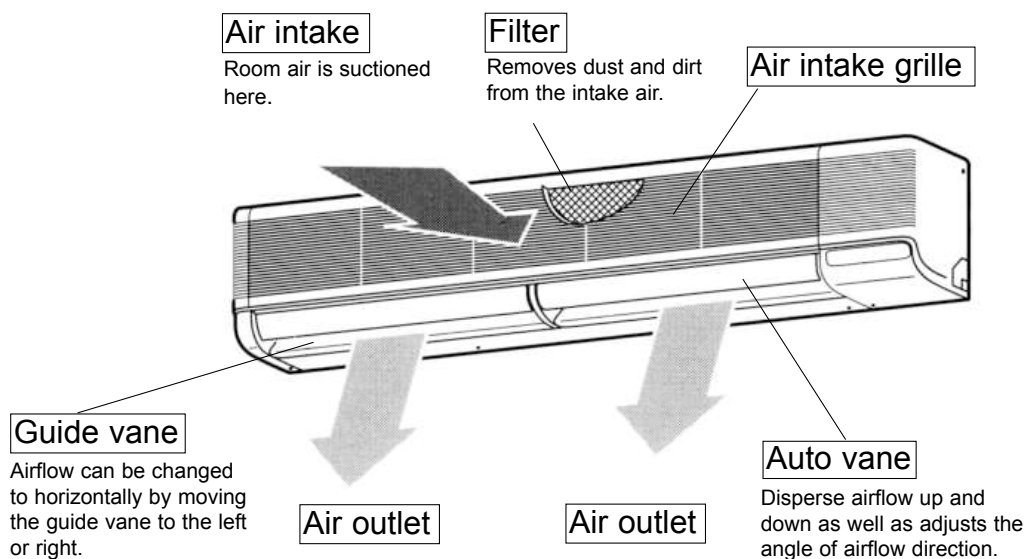
● Indoor Unit

PKA-A12GA
 PKA-A18GA
 PKA-A12GAL
 PKA-A18GAL
 PKA-A12GA₁
 PKA-A18GA₁
 PKA-A12GAL₁
 PKA-A18GAL₁
 PKA-A12GA₂
 PKA-A18GA₂
 PKA-A12GAL₂
 PKA-A18GAL₂



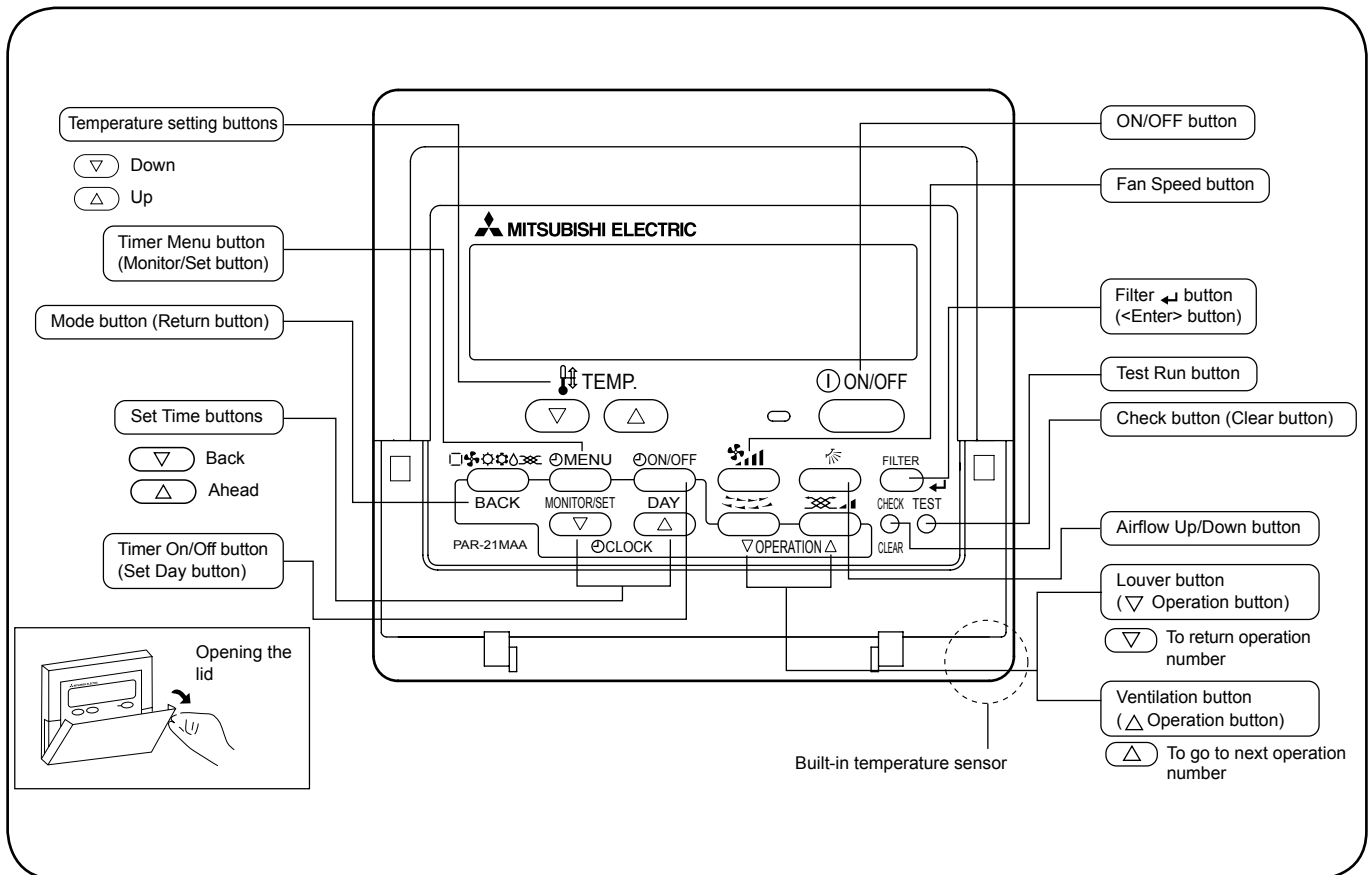
● Indoor Unit

PKA-A24FA
 PKA-A30FA
 PKA-A36FA
 PKA-A24FAL
 PKA-A30FAL
 PKA-A36FAL
 PKA-A24FA₁
 PKA-A30FA₁
 PKA-A36FA₁
 PKA-A24FAL₁
 PKA-A30FAL₁
 PKA-A36FAL₁
 PKA-A24FA₂
 PKA-A30FA₂
 PKA-A36FA₂
 PKA-A24FAL₂
 PKA-A30FAL₂
 PKA-A36FAL₂



● Wired remote controller

Once the controllers are set, the same operation mode can be repeated by simply pressing the ON/OFF button.



● Wired remote controller

Display Section

For purposes of this explanation, all parts of the display are shown as lit. During actual operation, only the relevant items will be lit.

Identifies the current operation

Shows the operating mode, etc.
*Multilanguage display is available.

"Centrally Controlled" indicator

Indicates that operation from the remote controller has been prohibited by a master controller.

"Timer is Off" indicator

Indicates that the timer is off.

Temperature Setting

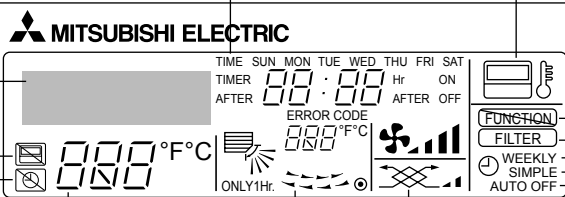
Shows the target temperature.

Day-of-Week

Shows the current day of the week.

Time/Timer Display

Shows the current time, unless the simple or Auto Off timer is set.
If the simple or Auto Off timer is set, the time to be switched off is shown.



Up/Down Air Direction indicator

The indicator \ shows the direction of the outgoing airflow.

"One Hour Only" indicator

Displayed if the airflow is set to low or downward during COOL or DRY mode. (Operation varies according to model.)
The indicator goes off in 1 hour, when the airflow direction also changes.

Room Temperature display

Shows the room temperature. The room temperature display range is 46–102°F. The display blinks if the temperature is less than 46°F or 102°F or more.

Louver display

Indicates the action of the swing louver. Does not appear if the louver is not running.

● (Power On indicator)

Indicates that the power is on.

"Sensor" indication

Displayed when the remote controller sensor is used.

"Locked" indicator

Indicates that remote controller buttons have been locked.

"Clean The Filter" indicator

To be displayed on when it is time to clean the filter.

Timer indicators

The indicator comes on if the corresponding timer is set.

Fan Speed indicator

Shows the selected fan speed.

Ventilation indicator

Appears when the unit is running in Ventilation mode.

Note:

● "PLEASE WAIT" message

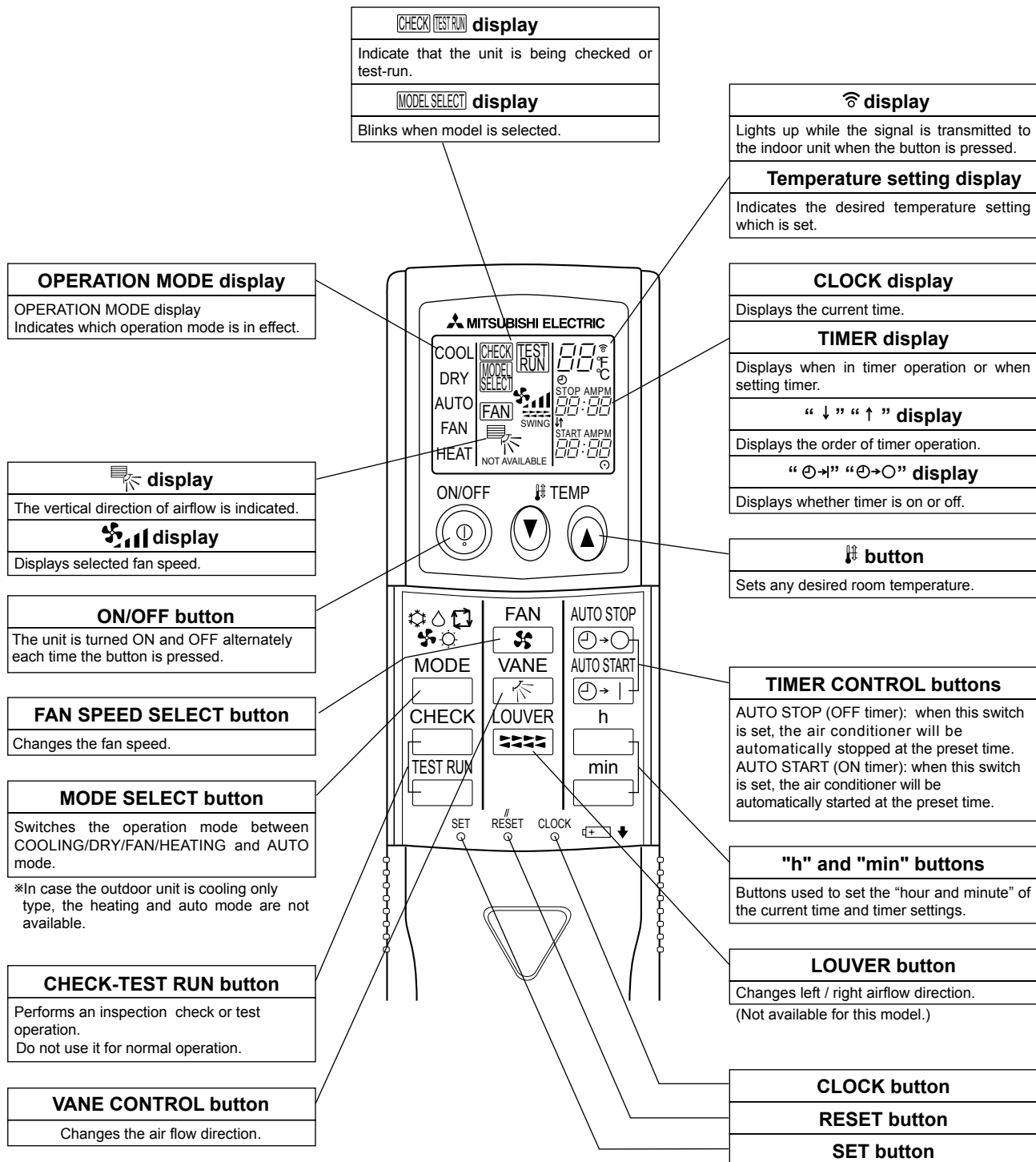
This message is displayed for approximately 3 minutes when power is supplied to the indoor unit or when the unit is recovering from a power failure.

● "NOT AVAILABLE" message

This message is displayed if an invalid button is pressed (to operate a function that the indoor unit does not have).

If a single remote controller is used to operate multiple indoor units simultaneously that are different types, this message will not be displayed as far as any of the indoor units is equipped with the function.

● Wireless remote controller



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SPECIFICATIONS

Service Ref.			PKA-A12GA ⁽¹⁾⁽²⁾ / PKA-A12GAL ⁽¹⁾⁽²⁾
INDOOR UNIT	Power supply(phase, cycle, voltage)		Single phase, 60Hz, 208/230V
	Max. Fuse Size	A	15
	Min. Circuit Ampacity	A	1
	External finish		Munsell 0.70Y 8.59/0.97
	Heat exchanger		Plate fin coil
	Fan	Fan(drive) × No.	Line flow (direct) × 1
		Fan motor output	0.030
		Fan motor	0.33
		Airflow(Low-Medium2-Medium1-High)	Dry: 9-10-11-12(320-350-390-425) Wet:8-9-10-11(290-315-350-380)
		External static pressure	Pa(mmAq) 0(direct blow)
	Operation control & Thermostat		GA: Wired remote controller & built-in GAL: Wireless remote controller & built-in
	Noise level(Low-Medium2-Medium1-High)		36-38-41-43
	Field drain pipe I.D.		20(13/16)
	Dimensions	W	990(39)
		D	235(9-1/4)
		H	340(13-3/8)
	Weight		16(35)

Service Ref.			PKA-A18GA ⁽¹⁾⁽²⁾ / PKA-A18GAL ⁽¹⁾⁽²⁾
INDOOR UNIT	Power supply(phase, cycle, voltage)		Single phase, 60Hz, 208/230V
	Max. Fuse Size	A	15
	Min. Circuit Ampacity	A	1
	External finish		Munsell 0.70Y 8.59/0.97
	Heat exchanger		Plate fin coil
	Fan	Fan(drive) × No.	Line flow (direct) × 1
		Fan motor output	0.030
		Fan motor	0.33
		Airflow(Low-Medium2-Medium1-High)	Dry: 9-10-11-12(320-350-390-425) Wet:8-9-10-11(290-315-350-380)
		External static pressure	Pa(mmAq) 0(direct blow)
	Operation control & Thermostat		GA: Wired remote controller & built-in GAL: Wireless remote controller & built-in
	Noise level(Low-High)		36-38-41-43
	Field drain pipe I.D.		20(13/16)
	Dimensions	W	990(39)
		D	235(9-1/4)
		H	340(13-3/8)
	Weight		16(35)

Service Ref.			PKA-A24FA ⁽¹⁾⁽²⁾ / PKA-A24FAL ⁽¹⁾⁽²⁾
INDOOR UNIT	Power supply (phase, cycle, voltage)		Single phase, 60Hz, 208/230V
	Max. Fuse Size	A	15
	Min. Circuit Ampacity	A	1
	External finish		Munsell 3.4Y 7.7/0.8
	Heat exchanger		Plate fin coil
	Fan	Fan (drive) × No.	Line flow (direct) × 2
		Fan motor output	0.045
		Fan motor	0.43
		Airflow (Low-High)	Dry: 15-20(530-705) Wet:14-18(480-635)
		External static pressure	Pa(mmAq) 0(direct blow)
	Operation control & Thermostat		FA:Wired remote controller & built-in FAL: Wireless remote controller & built-in
	Noise level(Low-High)		39-45
	Field drain pipe I.D.		20(13/16)
	Dimensions	W	1,400(55-1/8)
		D	235(9-1/4)
		H	340(13-3/8)
	Weight		24(53)

INDOOR UNIT	Service Ref.		PKA-A30FA₍₁₎₍₂₎ / PKA-A30FAL₍₁₎₍₂₎	
	Power supply (phase, cycle, voltage)		Single phase, 60Hz, 208/230V	
	Max. Fuse Size	A	15	
	Min. Circuit Ampacity	A	1	
	External finish		Munsell 3.4Y 7.7/0.8	
	Heat exchanger		Plate fin coil	
	Fan	Fan (drive) × No.		Line flow (direct) × 2
		Fan motor output	kW	0.045
		Fan motor	F.L.A	0.43
		Airflow (Low-High)	m ³ /min(CFM)	Dry: 15-20(530-705)
				Wet: 14-18(480-635)
		External static pressure	Pa(mmAq)	0(direct blow)
	Operation control & Thermostat		FA: Wired remote controller & built-in FAL: Wireless remote controller & built-in	
	Noise level (Low-High)		dB	
	Field drain pipe I.D.		mm(in.)	
	Dimensions	W	mm(in.)	1,400(55-1/8)
		D	mm(in.)	235(9-1/4)
		H	mm(in.)	340(13-3/8)
	Weight		kg(lbs)	

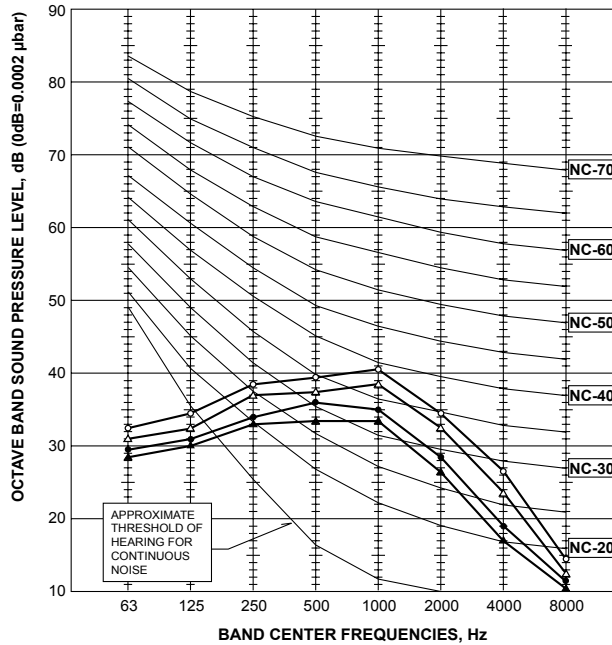
INDOOR UNIT	Service Ref.		PKA-A36FA₍₁₎₍₂₎ / PKA-A36FAL₍₁₎₍₂₎	
	Power supply (phase, cycle, voltage)		Single phase, 60Hz, 208/230V	
	Max. Fuse Size	A	15	
	Min. Circuit Ampacity	A	1	
	External finish		Munsell 3.4Y 7.7/0.8	
	Heat exchanger		Plate fin coil	
	Fan	Fan(drive) × No.		Line flow (direct) × 2
		Fan motor output	kW	0.070
		Fan motor	F.L.A	0.52
		Airflow (Low-High)	m ³ /min(CFM)	Dry: 22-28(780-990)
				Wet:20-25(700-890)
		External static pressure	Pa(mmAq)	0(direct blow)
	Operation control & Thermostat		FA: Wired remote controller & built-in FAL: Wireless remote controller & built-in	
	Noise level (Low-High)		dB	
	Field drain pipe I.D.		mm(in.)	
	Dimensions	W	mm(in.)	1,680(66-1/8)
		D	mm(in.)	235(9-1/4)
		H	mm(in.)	340(13-3/8)
	Weight		kg(lbs)	

6

NOISE CRITERION CURVES

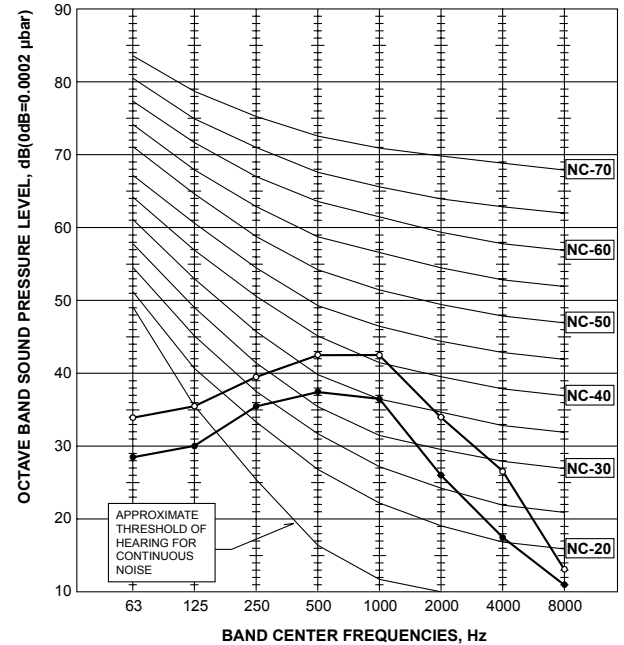
PKA-A12GA PKA-A12GA₂
 PKA-A12GAL PKA-A12GAL₂
 PKA-A18GA PKA-A18GA₂
 PKA-A18GAL PKA-A18GAL₂
 PKA-A12GA₁
 PKA-A12GAL₁
 PKA-A18GA₁
 PKA-A18GAL₁

NOTCH	SPL(dB)	LINE
High	43	○—○
Medium1	41	△—△
Medium2	38	●—●
Low	36	▲—▲



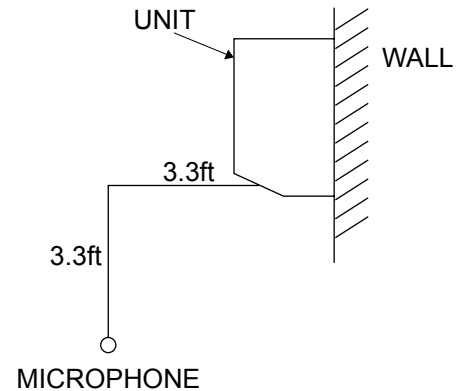
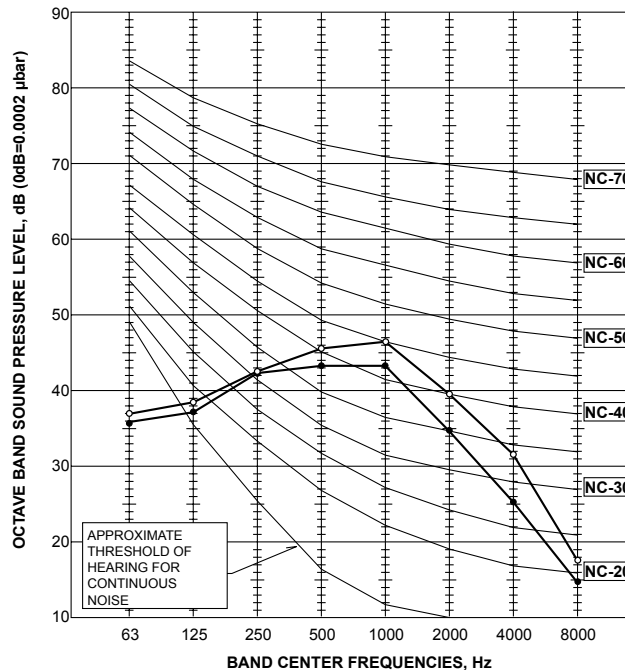
PKA-A24FA PKA-A24FA₂
 PKA-A30FA PKA-A30FA₂
 PKA-A24FAL PKA-A24FAL₂
 PKA-A30FAL PKA-A30FAL₂
 PKA-A24FA₁
 PKA-A30FA₁
 PKA-A24FAL₁
 PKA-A30FAL₁

NOTCH	SPL(dB)	LINE
High	45	○—○
Low	39	●—●



PKA-A36FA PKA-A36FA₂
 PKA-A36FAL PKA-A36FAL₂
 PKA-A36FA₁
 PKA-A36FAL₁

NOTCH	SPL(dB)	LINE
High	49	○—○
Low	46	●—●



OUTLINES AND DIMENSIONS

INDOOR UNIT

PKA-A12GA

PKA-A12GA₁

PKA-A12GA₂

PKA-A18GA

PKA-A18GA₁

PKA-A18GA₂

PKA-A12GAL

PKA-A12GAL₁

PKA-A12GAL₂

PKA-A18GAL

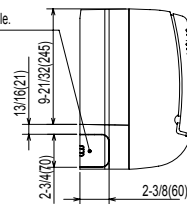
PKA-A18GAL₁

PKA-A18GAL₂

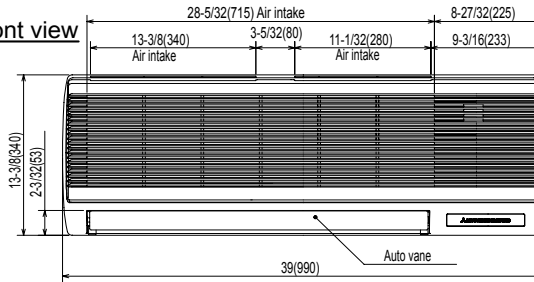
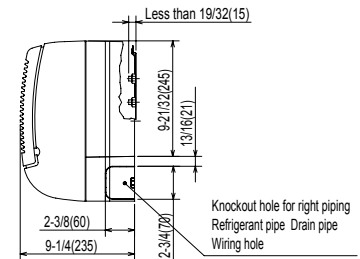
Unit :inch(mm)

Left side

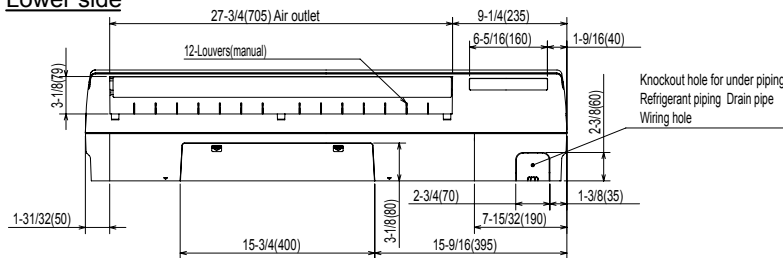
Knockout hole for left piping
Refrigerant pipe Drain pipe Wiring hole.



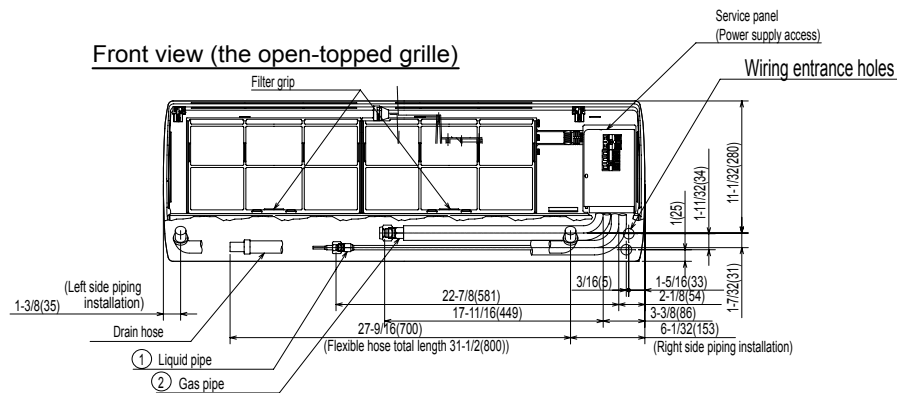
Front view

Right side

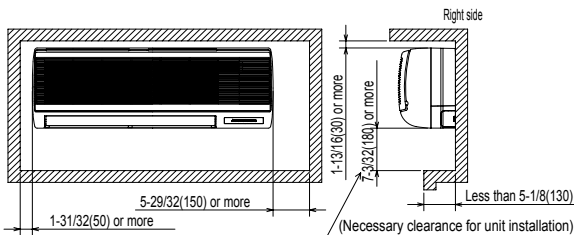
Lower side



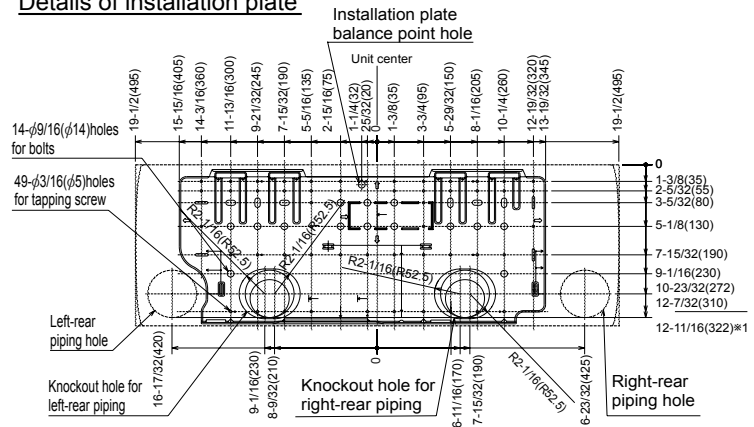
Front view (the open-topped grille)



Service space required around indoor unit



Details of installation plate



MODEL	12/18		
①Liquid pipe	1/4 inch	Sleeve *1 ø2-15/16(ø75)	Through-hole ø2-15/16~ø3-5/32 (ø75~ø80)
②Gas pipe	1/2 inch		

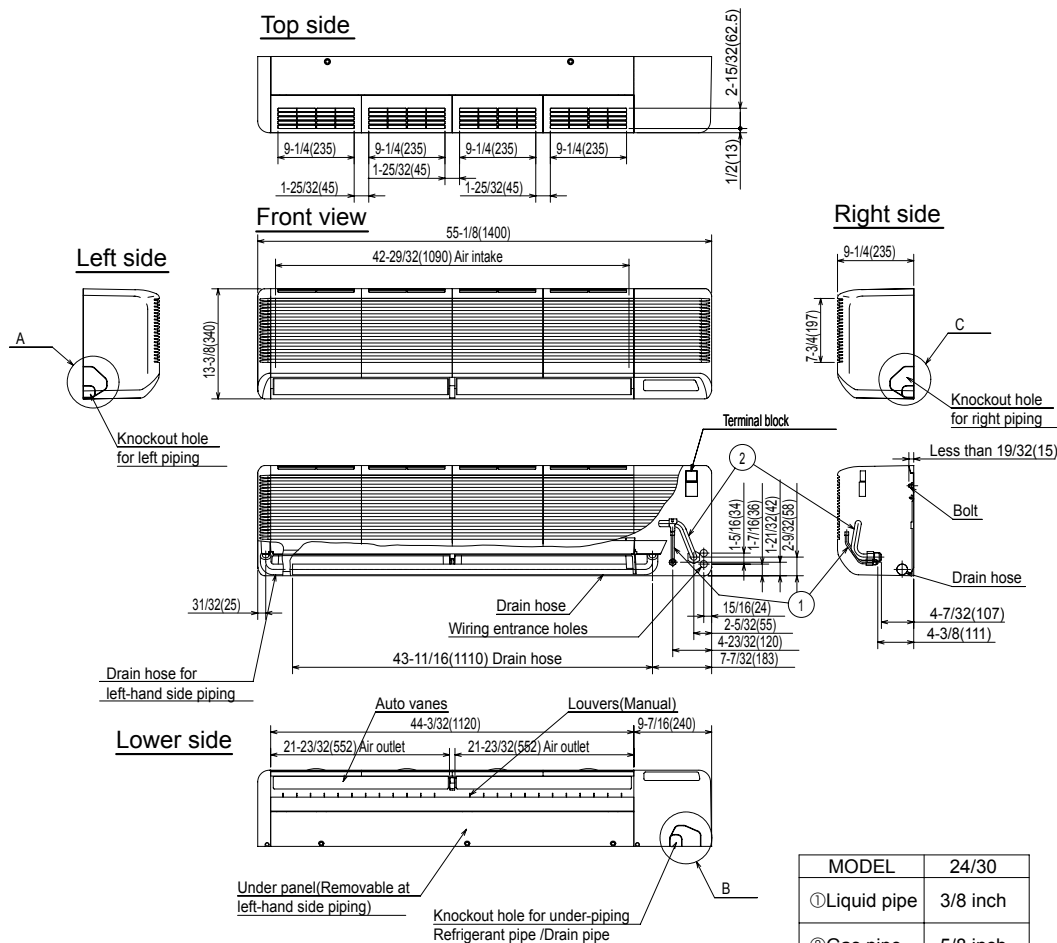
*1 Sleeves are available on the market.

*2 This size shows the lower end of through hole.

INDOOR UNIT

PKA-A24FA **PKA-A30FA** **PKA-A24FAL** **PKA-A30FAL**
PKA-A24FA₁ **PKA-A30FA₁** **PKA-A24FAL₁** **PKA-A30FAL₁**
PKA-A24FA₂ **PKA-A30FA₂** **PKA-A24FAL₂** **PKA-A30FAL₂**

Unit :inch(mm)

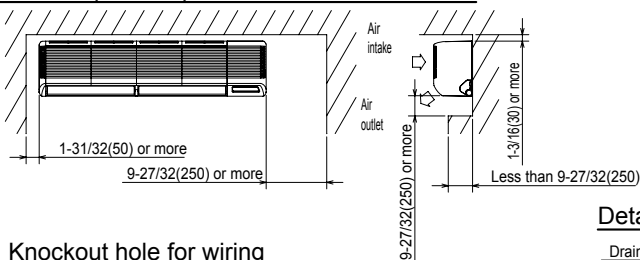


MODEL	24/30
① Liquid pipe	3/8 inch
② Gas pipe	5/8 inch

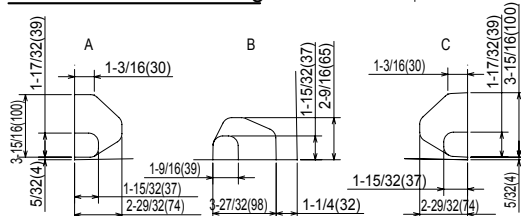
Sleeve*1	Through hole
ø3-17/32 (ø90)	ø3-17/32~ø3-15/16 (ø90~ø100)

*1 Sleeves are available on the market.

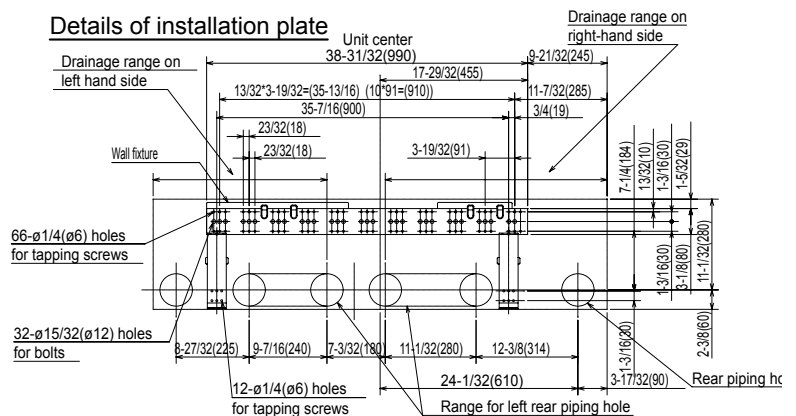
Service space required around indoor unit



Knockout hole for wiring



Details of installation plate



INDOOR UNIT

PKA-A36FA

PKA-A36FAL

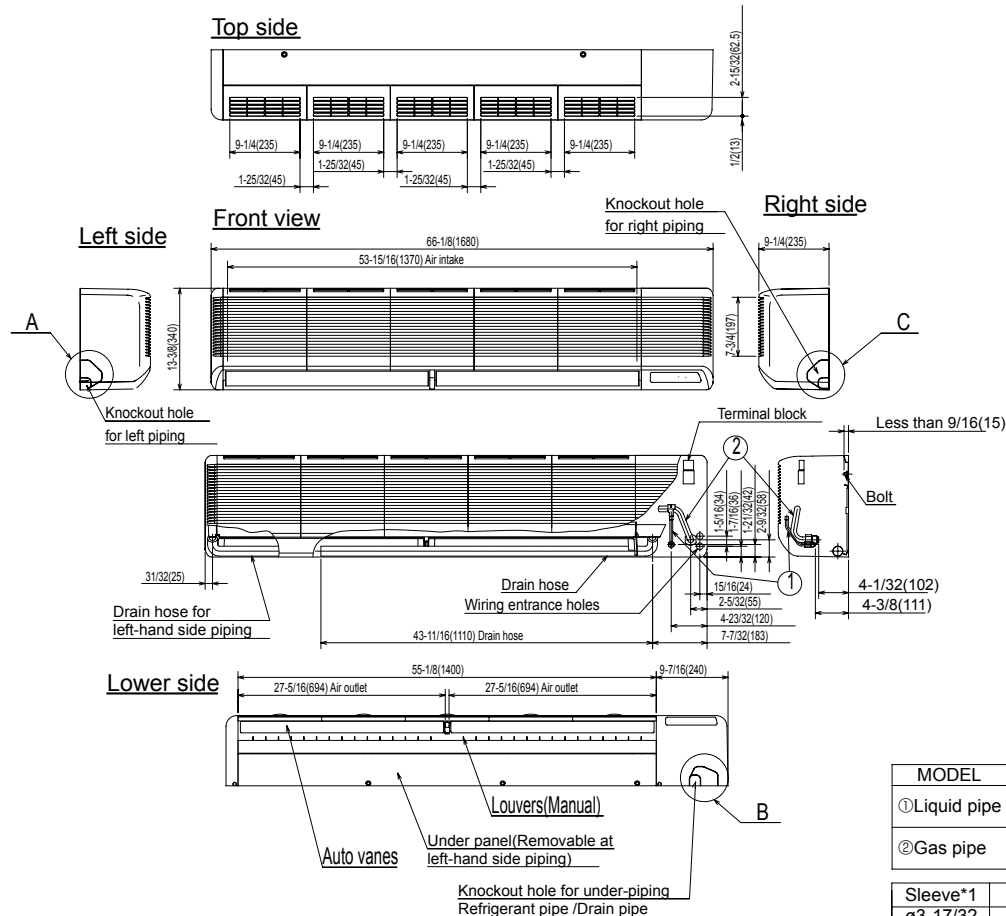
PKA-A36FA₁

PKA-A36FAL₁

Unit :inch(mm)

PKA-A36FA₂

PKA-A36FAL₂

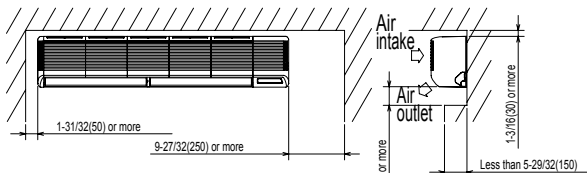


MODEL	36
① Liquid pipe	3/8 inch
② Gas pipe	5/8 inch

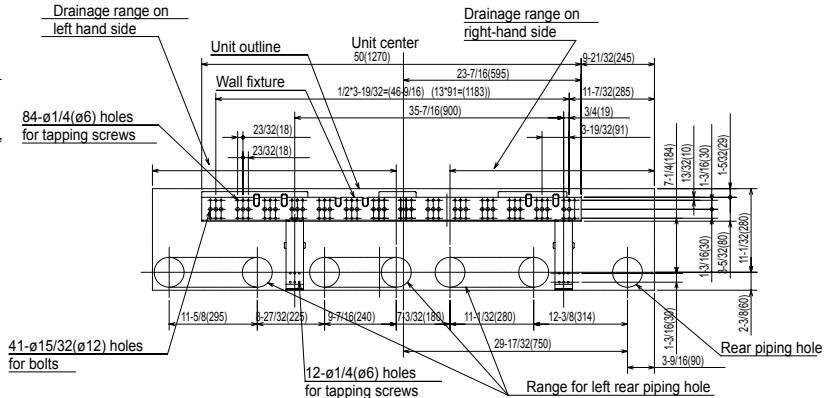
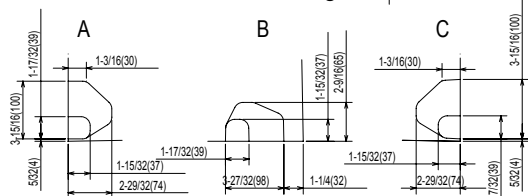
Sleeve*1	Through hole
ø3-17/32 (ø90)	ø3-17/32~ø3-15/16 (ø90~ø100)

*1 Sleeves are available on the market.

Service space required around indoor unit



Knockout hole for wiring



PKA-A12GA PKA-A18GA PKA-A12GAL PKA-A18GAL
PKA-A12GA₁ PKA-A18GA₁ PKA-A12GAL₁ PKA-A18GAL₁

[LEGEND]

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
P.B	INDOOR POWER BOARD	C	CAPACITOR<FAN MOTOR>	W.B	WIRELESS REMOTE CONTROLLER BOARD
I.B	INDOOR CONTROLLER BOARD	MF	FAN MOTOR	RU	RECEIVING UNIT
FUSE	FUSE (6.3A/250V)	MV	VANE MOTOR	BZ	BUZZER
ZNR	VARISTOR	TB4	TERMINAL BLOCK<INDOOR/OUTDOOR CONNECTING LINE>	LED1	LED<RUN INDICATOR>
CN2L	CONNECTOR<LOSSNAY>	TB5, TB6	TERMINAL BLOCK<REMOTE CONTROLLER TRANSMISSION LINE>	LED2	LED<HOT ADJUST>
CN32	CONNECTOR<REMOTE SWITCH>	TH1	ROOM TEMP.THERMISTOR <32°F/15kΩ, 77°F/5.2kΩ DETECT>	SW1	SWITCH<HEATING ON/OFF>
CN41	CONNECTOR<HA TERMINAL-A>	TH2	PIPE TEMP.THERMISTOR/LIQUID <32°F/15kΩ, 77°F/5.2kΩ DETECT>	SW2	SWITCH<COOLING ON/OFF>
CN51	CONNECTOR<CENTRALLY CONTROL>	TH5	COND./EVA.TEMP.THERMISTOR <32°F/15kΩ, 77°F/5.2kΩ DETECT>		
SW1	SWITCH<MODEL SELECTION>*See Table 1.	R.B	WIRED REMOTE CONTROLLER BOARD		
SW2	SWITCH<CAPACITY CODE>*See Table 2.				
SWE	SWITCH<EMERGENCY OPERATION>				
X4	RELAY<FAN MOTOR>				
BCR	FAN CONTROL ELEMENT				
LED1	POWER SUPPLY<I.B>				
LED2	POWER SUPPLY<R.B>				
LED3	TRANSMISSION<INDOOR-OUTDOOR>				

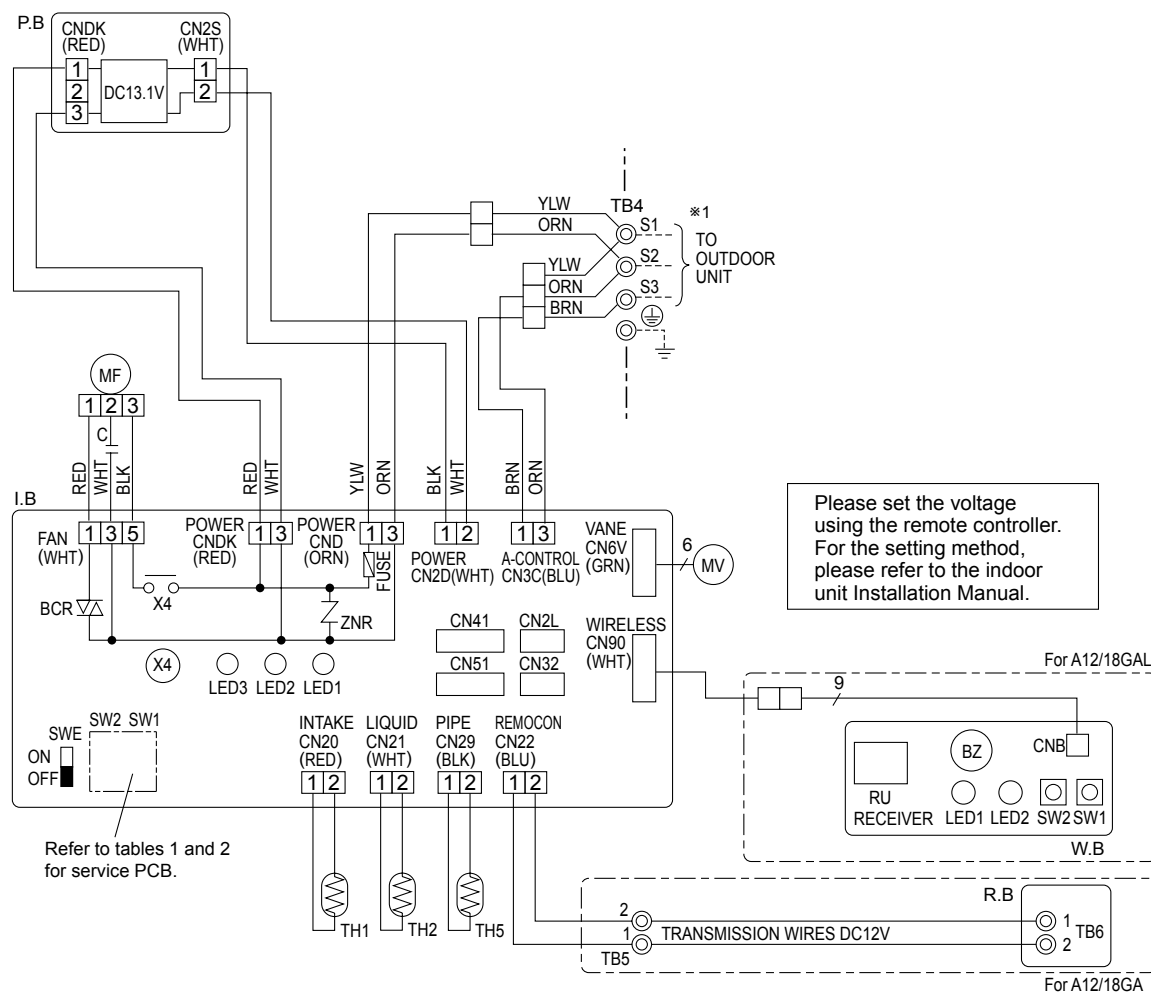


Table 1

SW1				
Service board				
1	2	3	4	5
ON	OFF	ON	OFF	ON

Table 2

SW2				
MODELS	Service board	MODELS	Service board	
PKA-A12GA(L)	1 2 3 4 5	PKA-A18GA(L)	1 2 3 4 5	ON OFF
	ON OFF		ON OFF	

NOTES:

1. Since the outdoor side electric wiring may change, be sure to check the outdoor unit electric wiring for servicing.
2. Indoor and outdoor connecting wires have polarities, make sure to match terminal numbers (S1, S2, S3) for correct wiring.
3. Symbols used in wiring diagram above are, □: Connector, ⊙: Terminal (block).
4. This diagram shows the wiring of Indoor and Outdoor connecting wires (specification of 230V), adopting superimposed system of power and signal.

*1. Use copper supply wires.

PKA-A12GA₂ PKA-A18GA₂ PKA-A12GAL₂ PKA-A18GAL₂

[LEGEND]

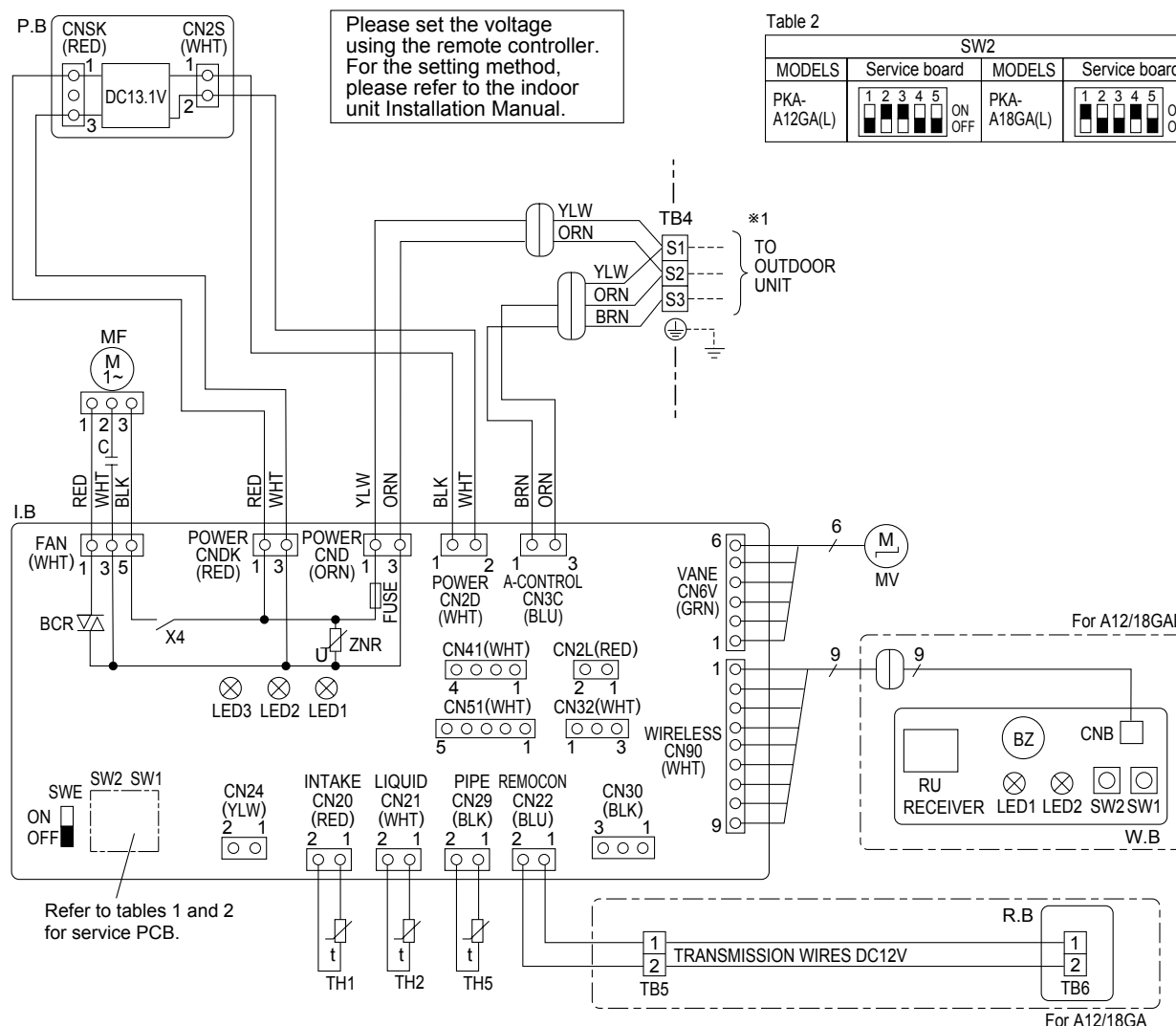
SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
P.B	INDOOR POWER BOARD	LED2	POWER SUPPLY<R.B>	W.B	WIRELESS REMOTE CONTROLLER BOARD
I.B	INDOOR CONTROLLER BOARD	LED3	TRANSMISSION<INDOOR-OUTDOOR>	RU	RECEIVING UNIT
FUSE	FUSE (6.3A/250V)	C	CAPACITOR<FAN MOTOR>	BZ	BUZZER
ZNR	VARIATOR	MF	FAN MOTOR	LED1	LED<RUN INDICATOR>
CN2L	CONNECTOR<LOSSNAY>	MV	VANE MOTOR	LED2	LED<HOT ADJUST>
CN24	CONNECTOR<BACK-UP HEATING>	TB4	TERMINAL BLOCK<INDOOR/OUTDOOR CONNECTING LINE>	SW1	SWITCH<HEATING ON/OFF>
CN30	CONNECTOR<LLC>	TB5,TB6	TERMINAL BLOCK<REMOTE CONTROLLER TRANSMISSION LINE>	SW2	SWITCH<COOLING ON/OFF>
CN32	CONNECTOR<REMOTE SWITCH>				
CN41	CONNECTOR<HA TERMINAL-A>				
CN51	CONNECTOR<CENTRALLY CONTROL>	TH1	ROOM TEMP.THERMISTOR <32°F/15kΩ, 77°F/5.2kΩ DETECT>		
SW1	SWITCH <MODEL SELECTION>*See Table 1.	TH2	PIPE TEMP.THERMISTOR/LIQUID <32°F/15kΩ, 77°F/5.2kΩ DETECT>		
SW2	SWITCH <CAPACITY CODE>*See Table 2.	TH5	COND./EVA.TEMP.THERMISTOR <32°F/15kΩ, 77°F/5.2kΩ DETECT>		
SWE	SWITCH<EMERGENCY OPERATION>				
X4	RELAY<FAN MOTOR>				
BCR	FAN CONTROL ELEMENT	R.B	WIRED REMOTE CONTROLLER BOARD		
LED1	POWER SUPPLY<I.B>				

Table 1

SW1				
Service board				
1	2	3	4	5
ON	OFF	ON	OFF	ON

Table 2

SW2			
MODELS	Service board	MODELS	Service board
PKA-A12GA(L)	1 2 3 4 5 ON OFF	PKA-A18GA(L)	1 2 3 4 5 ON OFF



NOTES:

1. Since the outdoor side electric wiring may change be sure to check the outdoor unit electric wiring for servicing.
2. Indoor and outdoor connecting wires are made with polarities, make wiring matching terminal numbers (S1, S2, S3).
3. Symbols used in wiring diagram above are, : Connector, : Terminal (block).
4. This diagram shows the wiring of Indoor and Outdoor connecting wires (specification of 230V), adopting superimposed system of power and signal.

*1. Use copper supply wires.

[Self-diagnosis]

Please refer to technical manuals etc.

PKA-A24FA PKA-A30FA PKA-A36FA PKA-A24FAL PKA-A30FAL PKA-A36FAL
PKA-A24FA₁ PKA-A30FA₁ PKA-A36FA₁ PKA-A24FAL₁ PKA-A30FAL₁ PKA-A36FAL₁

[LEGEND]

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
P.B	INDOOR POWER BOARD	C	CAPACITOR<FAN MOTOR>	W.B	WIRELESS REMOTE CONTROLLER BOARD
I.B	INDOOR CONTROLLER BOARD	MF	FAN MOTOR	RU	RECEIVING UNIT
FUSE	FUSE (6.3A/250V)	MV	VANE MOTOR	BZ	BUZZER
ZNR	VARISTOR	TB4	TERMINAL BLOCK<INDOOR/OUTDOOR CONNECTING LINE>	LED1	LED<RUN INDICATOR>
CN2L	CONNECTOR<LOSSNAY>	TB5,TB6	TERMINAL BLOCK<REMOTE CONTROLLER TRANSMISSION LINE>	LED2	LED<HOT ADJUST>
CN32	CONNECTOR<REMOTE SWITCH>	TH1	ROOM TEMP.THERMISTOR <32°F/15kΩ, 77°F/5.2kΩ DETECT>	SW1	SWITCH<HEATING ON/OFF>
CN41	CONNECTOR<HA TERMINAL-A>	TH2	PIPE TEMP.THERMISTOR/LIQUID <32°F/15kΩ, 77°F/5.2kΩ DETECT>	SW2	SWITCH<COOLING ON/OFF>
CN51	CONNECTOR<CENTRALLY CONTROL>	TH5	COND./EVA.TEMP.THERMISTOR <32°F/15kΩ, 77°F/5.2kΩ DETECT>		
SW1	SWITCH <MODEL SELECTION>*See Table 1.	R.B	WIRED REMOTE CONTROLLER BOARD		
SW2	SWITCH <CAPACITY CODE>*See Table 2.				
SWE	SWITCH<EMERGENCY OPERATION>				
X4	RELAY<FAN MOTOR>				
BCR	FAN CONTROL ELEMENT				
LED1	POWER SUPPLY<I.B>				
LED2	POWER SUPPLY<R.B>				
LED3	TRANSMISSION<INDOOR-OUTDOOR>				

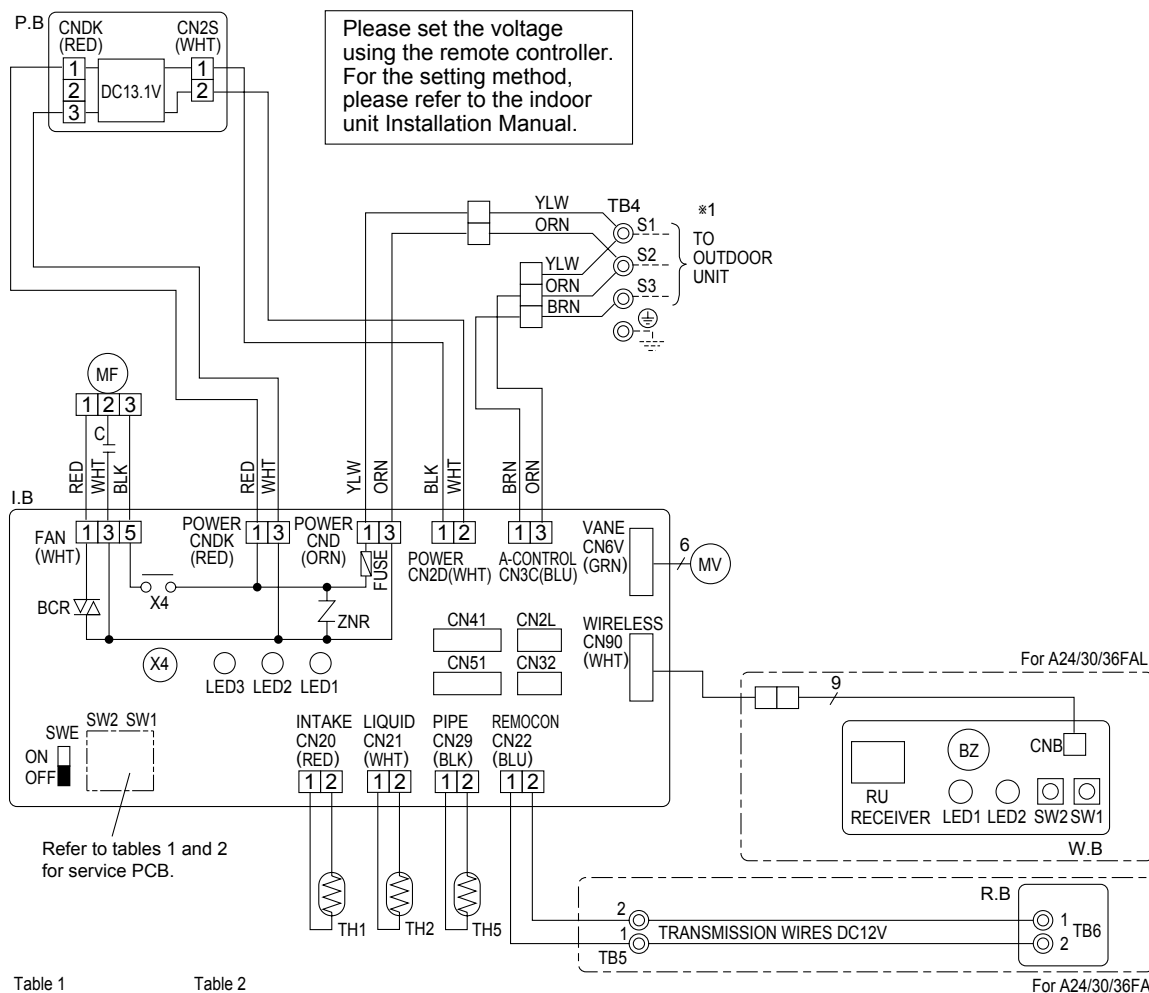


Table 1

SW1
Service board
1 2 3 4 5 ON OFF

Table 2

MODELS	Service board	MODELS	Service board	MODELS	Service board
PKA-A24FA(L)	1 2 3 4 5 ON OFF	PKA-A30FA(L)	1 2 3 4 5 ON OFF	PKA-A36FA(L)	1 2 3 4 5 ON OFF

NOTES:

- Since the outdoor side electric wiring may change be sure to check the outdoor unit electric wiring for servicing.
- Indoor and outdoor connecting wires have polarities, make sure to match terminal numbers (S1, S2, S3) for correct wiring.
- Symbols used in wiring diagram above are, : Connector, : Terminal (block).
- This diagram shows the wiring of Indoor and Outdoor connecting wires (specification of 230V), adopting superimposed system of power and signal.

*1. Use copper supply wires.

PKA-A24FA₂ PKA-A30FA₂ PKA-A36FA₂ PKA-A24FAL₂ PKA-A30FAL₂ PKA-A36FAL₂

[LEGEND]

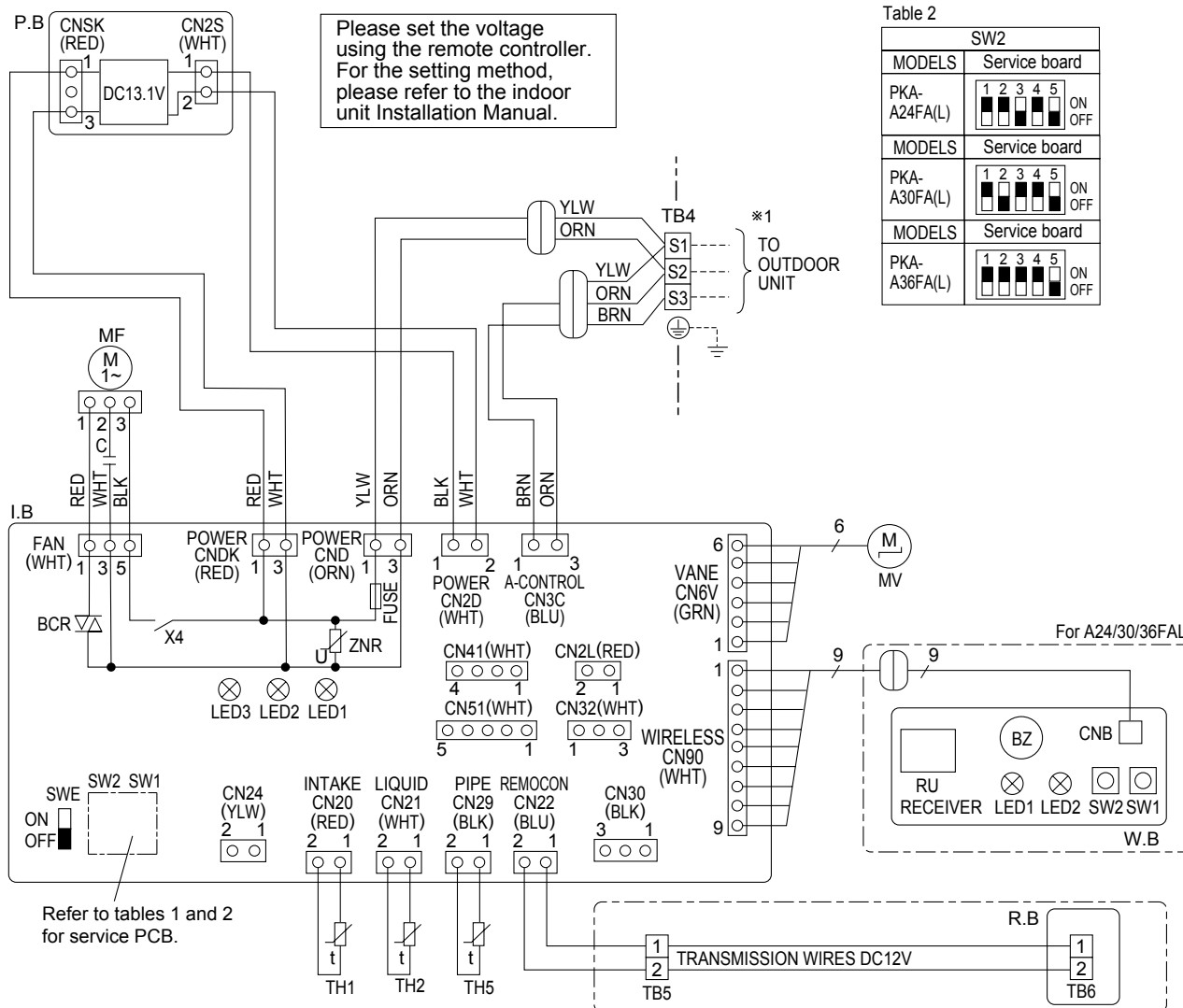
SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
P.B	INDOOR POWER BOARD	LED2	POWER SUPPLY<R.B>	W.B	WIRELESS REMOTE CONTROLLER BOARD
I.B	INDOOR CONTROLLER BOARD	LED3	TRANSMISSION<INDOOR-OUTDOOR>	RU	RECEIVING UNIT
FUSE	FUSE (6.3A/250V)	C	CAPACITOR<FAN MOTOR>	BZ	BUZZER
ZNR	VARIATOR	MF	FAN MOTOR	LED1	LED<RUN INDICATOR >
CN2L	CONNECTOR<LOSSNAY>	MV	VANE MOTOR	LED2	LED<HOT ADJUST>
CN24	CONNECTOR<BACK-UP HEATING>	TB4	TERMINAL BLOCK<INDOOR/OUTDOOR CONNECTING LINE>	SW1	SWITCH<HEATING ON/OFF>
CN30	CONNECTOR<LLC>	TB5,TB6	TERMINAL BLOCK<REMOTE CONTROLLER TRANSMISSION LINE >	SW2	SWITCH<COOLING ON/OFF>
CN32	CONNECTOR<REMOTE SWITCH>	TH1	ROOM TEMP.THERMISTOR <32°F/15kΩ, 77°F/5.2kΩ DETECT>		
CN41	CONNECTOR<HA TERMINAL-A>	TH2	PIPE TEMP.THERMISTOR/LIQUID <32°F/15kΩ, 77°F/5.2kΩ DETECT>		
CN51	CONNECTOR<CENTRALLY CONTROL>	TH5	COND./EVA.TEMP.THERMISTOR <32°F/15kΩ, 77°F/5.2kΩ DETECT>		
SW1	SWITCH <MODEL SELECTION>*See Table 1.	R.B	WIRED REMOTE CONTROLLER BOARD		
SW2	SWITCH <CAPACITY CODE>*See Table 2.				
SWE	SWITCH<EMERGENCY OPERATION>				
X4	RELAY<FAN MOTOR>				
BCR	FAN CONTROL ELEMENT				
LED1	POWER SUPPLY<I.B>				

Table 1

SW1
Service board
1 2 3 4 5 ON OFF

Table 2

MODELS	SW2
Service board	
PKA-A24FA(L)	1 2 3 4 5 ON OFF
PKA-A30FA(L)	1 2 3 4 5 ON OFF
PKA-A36FA(L)	1 2 3 4 5 ON OFF



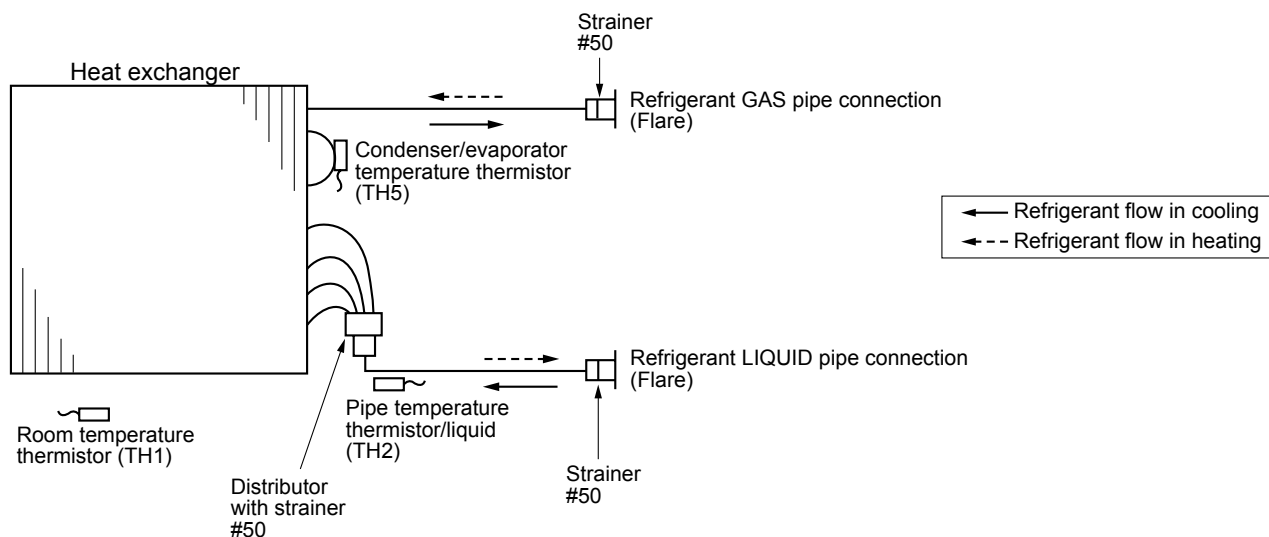
NOTES:

- Since the outdoor side electric wiring may change be sure to check the outdoor unit electric wiring for servicing.
 - Indoor and outdoor connecting wires are made with polarities, make wiring matching terminal numbers (S1, S2, S3).
 - Symbols used in wiring diagram above are, : Connector, : Terminal (block).
 - This diagram shows the wiring of Indoor and Outdoor connecting wires (specification of 230V), adopting superimposed system of power and signal.
- *1. Use copper supply wires.

[Self-diagnosis]

Please refer to technical manuals etc.

PKA-A12GA	PKA-A18GA	PKA-A24FA	PKA-A30FA	PKA-A36FA
PKA-A12GAL	PKA-A18GAL	PKA-A24FAL	PKA-A30FAL	PKA-A36FAL
PKA-A12GA ₁	PKA-A18GA ₁	PKA-A24FA ₁	PKA-A30FA ₁	PKA-A36FA ₁
PKA-A12GAL ₁	PKA-A18GAL ₁	PKA-A24FAL ₁	PKA-A30FAL ₁	PKA-A36FAL ₁
PKA-A12GA ₂	PKA-A18GA ₂	PKA-A24FA ₂	PKA-A30FA ₂	PKA-A36FA ₂
PKA-A12GAL ₂	PKA-A18GAL ₂	PKA-A24FAL ₂	PKA-A30FAL ₂	PKA-A36FAL ₂



10-1. TROUBLESHOOTING

<Error code display by self-diagnosis and actions to be taken for service (summary)>

Present and past error codes are logged and displayed on the wired remote controller or controller board of outdoor unit. Actions to be taken for service and the trouble reoccurrence at field are summarized in the table below. Check the contents below before investigating details.

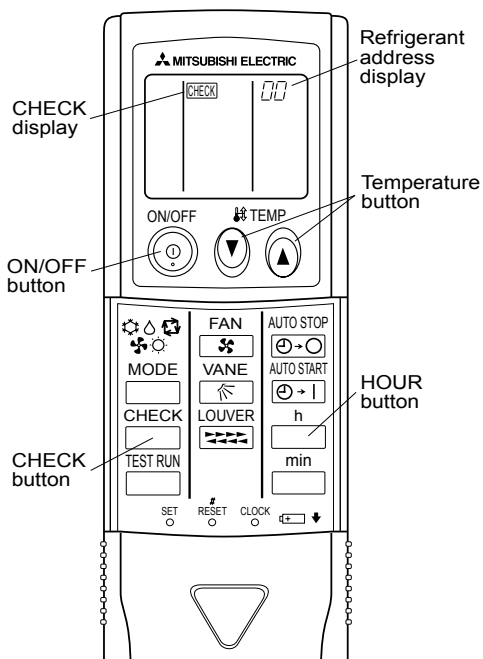
Unit conditions at service	Error code	Actions to be taken for service (summary)
The trouble is reoccurring.	Displayed	Judge what is wrong and take a corrective action according to "SELF-DIAGNOSIS ACTION TABLE" (10-3).
	Not displayed	Identify the cause of the trouble and take a corrective action according to "TROUBLESHOOTING BY INFERIOR PHENOMENA" (10-4).
The trouble is not reoccurring.	Logged	①Consider the temporary defects such as the work of protection devices in the refrigerant circuit including compressor, poor connection of wiring, noise and etc. Re-check the symptom, and check the installation environment, refrigerant amount, weather when the trouble occurred, and wiring related. ②Reset error code logs and restart the unit after finishing service. ③There is no abnormality in electrical components, controller boards, and remote controller.
	Not logged	①Recheck the abnormal symptom. ②Identify the cause of the trouble and take a corrective action according to "TROUBLESHOOTING BY INFERIOR PHENOMENA" (10-4). ③Continue to operate unit for the time being if the cause is not ascertained. ④There is no abnormality in electrical components, controller boards, remote controller etc.

10-2. MALFUNCTION-DIAGNOSIS METHOD BY REMOTE CONTROLLER

<In case of trouble during operation>

When a malfunction occurs to the air conditioner, both indoor unit and outdoor unit will stop and operation lamp blinks to inform unusual stop.

<Malfunction-diagnosis method at maintenance service>



[Procedure]

1. Press the CHECK button twice.

- "CHECK" lights, and refrigerant address "00" blinks.
- Check that the remote controller's display has stopped before continuing.

2. Press the temperature buttons.

- Select the refrigerant address of the indoor unit for the self-diagnosis.
- Note: Set refrigerant address using the outdoor unit's DIP switch (SW1). (For more information, see the outdoor unit installation manual.)

3. Point the remote controller at the sensor on the indoor unit and press the HOUR button.

- If an air conditioner error occurs, the indoor unit's sensor emits an intermittent buzzer sound, the operation lamp blinks, and the error code is output. (It takes 3 seconds at most for error code to appear.)

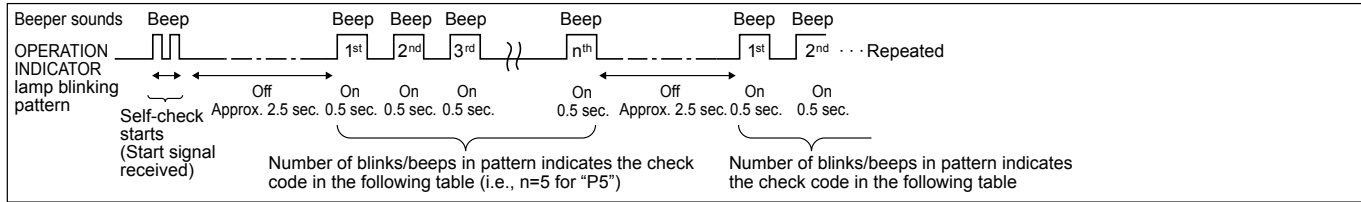
4. Point the remote controller at the sensor on the indoor unit and press the ON/OFF button.

- The check mode is cancelled.

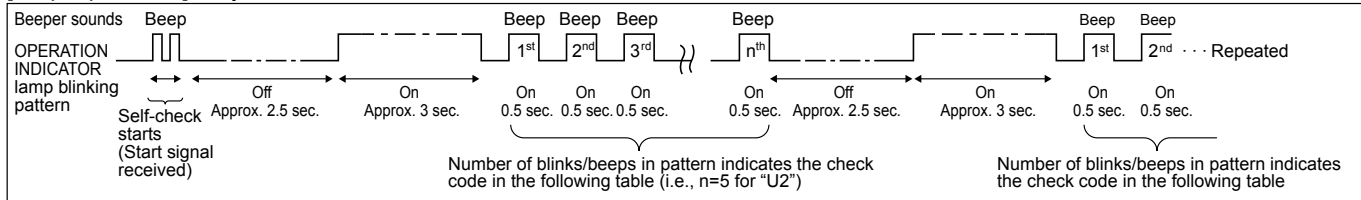
To be continued to the next page.

- Refer to the following tables for details on the check codes.

[Output pattern A]



[Output pattern B] Only A-CONTROL



[Output pattern A] Errors detected by indoor unit

Wireless remote controller	Wired remote controller		
Beep sounds/OPERATION INDICATOR lamp blinks (Number of times)	① Check code	Symptom	Remark
1	P1	Intake sensor error	
2	P2	Pipe (TH2) sensor error	
	P9	Pipe (TH5) sensor error	
3	E6, E7	Indoor/outdoor unit communication error	
4	P4	Drain sensor error	
5	P5	Drain pump error	
	PA	Forced compressor stop(due to water leakage abnormality)	
6	P6	Freezing/Overheating protection operation	
7	EE	Communication error between indoor and outdoor units	
8	P8	Pipe temperature error	
9	E4, E5	Remote controller signal receiving error	
10	—	—	
11	—	—	
12	Fb	Indoor unit control system error (memory error, etc.)	
—	E0, E3	Remote controller transmission error	
—	E1, E2	Remote controller control board error	

[Output pattern B] Errors detected by unit other than indoor unit (outdoor unit, etc.)

Wireless remote controller	Wired remote controller		
Beep sounds/OPERATION INDICATOR lamp blinks (Number of times)	① Check code	Symptom	Remark
1	E9	Indoor/outdoor unit communication error (Transmitting error) (Outdoor unit)	As for outdoor unit, refer to outdoor unit's service manual. For details, check the LED display of the outdoor controller board.
2	UP	Compressor overcurrent interruption	
3	U3, U4	Open/short of outdoor unit thermistors	
4	UF	Compressor overcurrent interruption (When compressor locked)	
5	U2	Abnormal high discharging temperature/49C worked/insufficient refrigerant	
6	U1, Ud	Abnormal high pressure (63H worked)/Overheating protection operation	
7	U5	Abnormal temperature of heatsink	
8	U8	Outdoor unit fan protection stop	
9	U6	Compressor overcurrent interruption/Abnormal of power module	
10	U7	Abnormality of superheat due to low discharge temperature	
11	U9, UH	Abnormality such as overvoltage or voltage shortage and abnormal synchronous signal to main circuit/Current sensor error	
12	—	—	
13	—	—	
14	Others	Other errors (Refer to the technical manual for the outdoor unit.)	

*1 If the beeper does not sound again after the initial 2 beeps to confirm the self-check start signal was received and the OPERATION INDICATOR lamp does not come on, there are no error records.

*2 If the beeper sounds 3 times continuously "beep, beep, beep (0.4 + 0.4 + 0.4 sec.)" after the initial 2 beeps to confirm the self-check start signal was received, the specified refrigerant address is incorrect.

- On wireless remote controller
The continuous buzzer sounds from receiving section of indoor unit.
Blink of operation lamp
 - On wired remote controller
- ① Check code displayed in the LCD.

- If the unit cannot be operated properly after the test run has been performed, refer to the following table to find out the cause.

Symptom			Cause
Wired remote controller		LED 1, 2 (PCB in outdoor unit)	
PLEASE WAIT	For about 2 minutes after power-on	After LED 1, 2 are lighted, LED 2 is turned off, then only LED 1 is lighted. (Correct operation)	•For about 2 minutes after power-on, operation of the remote controller is not possible due to system start-up. (Correct operation)
PLEASE WAIT → Error code	Subsequent to about 2 minutes after power-on	Only LED 1 is lighted. → LED 1, 2 blink.	•Connector for the outdoor unit's protection device is not connected. •Reverse or open phase wiring for the outdoor unit's power terminal block (L1, L2, GR)
Display messages do not appear even when operation switch is turned ON (operation lamp does not light up).		Only LED 1 is lighted. → LED 1 blinks twice, LED 2 blinks once.	•Incorrect wiring between indoor and outdoor units (incorrect polarity of S1, S2, S3) •Remote controller wire short

On the wireless remote controller with condition above, following phenomena take place.

- No signals from the remote controller can be received.
- Operation lamp is blinking.
- The buzzer makes a short ping sound.

Note:

Operation is not possible for about 30 seconds after cancellation of function selection. (Correct operation)

For description of each LED (LED1, 2, 3) provided on the indoor controller, refer to the following table.

LED1 (power for microcomputer)	Indicates whether control power is supplied. Make sure that this LED is always lit.
LED2 (power for remote controller)	Indicates whether power is supplied to the remote controller. This LED lights only in the case of the indoor unit which is connected to the outdoor unit refrigerant address "0".
LED3 (communication between indoor and outdoor units)	Indicates state of communication between the indoor and outdoor units. Make sure that this LED is always blinking.

10-3. SELF-DIAGNOSIS ACTION TABLE

Note: Refer to the manual of outdoor unit for the details of display such as F, U, and other E.

Error Code	Abnormal point and detection method	Cause	Countermeasure
P1	Room temperature thermistor (TH1) ① The unit is in 3-minute resume prevention mode if short/open of thermistor is detected. Abnormal if the unit does not reset normally after 3 minutes. (The unit returns to normal operation, if it has been reset normally.) ② Constantly detected during cooling, drying, and heating operation. Short: -90°C (194°F) or more Open: -40°C (-40°F) or less	① Defective thermistor characteristics ② Contact failure of connector (CN20) on the indoor controller board (Insert failure) ③ Breaking of wire or contact failure of thermistor wiring ④ Defective indoor controller board	①—③ Check resistance value of thermistor. 0°C (32°F)..... 15.0kΩ 10°C (50°F)..... 9.6kΩ 20°C (68°F)..... 6.3kΩ 30°C (86°F)..... 4.3kΩ 40°C (104°F)..... 3.0kΩ If you put force on (draw or bend) the lead wire with measuring resistance value of thermistor breaking of wire or contact failure can be detected. ② Check contact failure of connector (CN20) on the indoor controller board. Refer to 10-7. Turn the power on again and check restart after inserting connector again. ④ Check room temperature display on remote controller. Replace indoor controller board if there is abnormal difference with actual room temperature. Turn the power off, and on again to operate after check.
P2	Pipe temperature thermistor/Liquid (TH2) ① The unit is in 3-minute resume prevention mode if short/open of thermistor is detected. Abnormal if the unit does not reset normally after 3 minutes. (The unit returns to normal operation, if it has been reset normally.) ② Constantly detected during cooling, drying, and heating (except defrosting) operation. Short: 90°C (194°F) or more Open: -40°C (-40°F) or less	① Defective thermistor characteristics ② Contact failure of connector (CN21) on the indoor controller board (Insert failure) ③ Breaking of wire or contact failure of thermistor wiring ④ Defective refrigerant circuit is causing thermistor temperature of 90°C (194°F) or more or -40°C (-40°F) or less. ⑤ Defective indoor controller board	①—③ Check resistance value of thermistor. For characteristics, refer to (P1) above. ② Check contact failure of connector (CN21) on the indoor controller board. Refer to 10-7. Turn the power on and check restart after inserting connector again. ④ Check pipe <liquid> temperature with remote controller in test run mode. If pipe <liquid> temperature is extremely low (in cooling mode) or high (in heating mode), refrigerant circuit may have defect. ⑤ Check pipe <liquid> temperature with remote controller in test run mode. If there is extreme difference with actual pipe <liquid> temperature, replace indoor controller board. Turn the power off, and on again to operate after check.
P4	Drain sensor (DS) ① Suspensive abnormality, if short/open of thermistor is detected for 30 seconds continuously. Turn off compressor and indoor fan. ② Short/open is detected for 30 seconds continuously during suspensive abnormality. (The unit returns to normal operation, if it has been reset normally.) ③ Detect the following condition. • During cooling and drying operation • In case that pipe <liquid> temperature - room temperature <-10deg (Except defrosting) • When pipe <liquid> temperature or room temperature is short/open temperature. • During drain pump operation	① Defective thermistor characteristics ② Contact failure of connector (CN31) on the indoor controller board (Insert failure) ③ Breaking of wire or contact failure of drain sensor wiring ④ Defective indoor controller board	①—③ Check resistance value of thermistor. 0°C (32°F)..... 6.0kΩ 10°C (50°F)..... 3.9kΩ 20°C (68°F)..... 2.6kΩ 30°C (86°F)..... 1.8kΩ 40°C (104°F)..... 1.3kΩ ② Check contact failure of connector (CN31) on the indoor controller board. Refer to 10-7. Turn the power on again and check restart after inserting connector again. ④ Replace indoor controller board if drain pump operates with the line of drain sensor connector CN31-① and ② is short-circuited, and abnormality reappears. Turn the power off, and on again to operate after check.
P5	Malfunction of drain pump (DP) ① Suspensive abnormality, if thermistor of drain sensor heats itself and temperature rises slightly. Turn off compressor and indoor fan. ② Drain pump is abnormal if the condition above is detected during suspensive abnormality. ③ Constantly detected during drain pump operation.	① Malfunction of drain pump ② Defective drain Clogged drain pump Clogged drain pipe ③ Attached drop of water at the drain sensor • Drops of drain trickles from lead wire. • Clogged filter is causing wave of drain. ④ Defective indoor controller board	① Check if drain pump works. ② Check drain function. ③ Check the setting of lead wire of drain sensor and check clogs of the filter. ④ Replace indoor controller board if drain pump operates with the line of drain sensor connector CN31-① and ② is short-circuited and abnormality reappears. Refer to 10-7. Turn the power off, and on again to operate after check.

Error Code	Abnormal point and detection method	Cause	Countermeasure
P6	Freezing/overheating protection is working ① Freezing protection (Cooling mode) The unit is in 6-minute resume prevention mode if pipe <liquid or condenser/evaporator> temperature stays under -15°C (5°F) for 3 minutes, 3 minutes after the compressor started. Abnormal if it stays under -15°C (5°F) for 3 minutes again within 16 minutes after 6-minute resume prevention mode. ② Overheating protection (Heating mode) The units is in 6-minute resume prevention mode if pipe <condenser / evaporator> temperature is detected as over 70°C (158°F) after the compressor started. Abnormal if the temperature of over 70°C (158°F) is detected again within 10 minutes after 6-minute resume prevention mode.	(Cooling or drying mode) ① Clogged filter (reduced airflow) ② Short cycle of air path ③ Low-load (low temperature) operation out of the tolerance range ④ Defective indoor fan motor • Fan motor is defective. • Indoor controller board is defective. ⑤ Defective outdoor fan control ⑥ Overcharge of refrigerant ⑦ Defective refrigerant circuit (clogs) (Heating mode) ① Clogged filter (reduced airflow) ② Short cycle of air path ③ Overload (high temperature) operation beyond the tolerance range ④ Defective indoor fan motor • Fan motor is defective. • Indoor controller board is defective. ⑤ Defective outdoor fan control ⑥ Overcharge of refrigerant ⑦ Defective refrigerant circuit (clogs) ⑧ Bypass circuit of outdoor unit is defective.	(Cooling or drying mode) ① Check clogs of the filter. ② Remove shields. ④ Measure the resistance of fan motor's winding. Measure the output voltage of fan's connector (FAN) on the indoor controller board. *The indoor controller board should be normal when voltage of AC 208/230V is detected while fan motor is connected. Refer to 10-7. ⑤ Check outdoor fan motor. ⑥⑦ Check operating condition of refrigerant circuit. (Heating mode) ① Check clogs of the filter. ② Remove shields. ④ Measure the resistance of fan motor's winding. Measure the output voltage of fan's connector (FAN) on the indoor controller board. *The indoor controller board should be normal when voltage of AC 208/230V is detected while fan motor is connected. Refer to 10-7. ⑤ Check outdoor fan motor. ⑥~⑧ Check operating condition of refrigerant circuit.
P8	Pipe temperature <Cooling mode> Detected as abnormal when the pipe temperature is not in the cooling range 3 minutes after compressor start and 6 minutes after the liquid or condenser/evaporator pipe is out of cooling range. Note 1) It takes at least 9 minutes to detect. Note 2) Abnormality P8 is not detected in drying mode. Cooling range:-3 deg C[-5.4deg F]≥(TH-TH1) TH: Lower temperature between liquid pipe temperature (TH2) and condenser/evaporator temperature (TH5) TH1: Intake temperature <Heating mode> When 10 seconds have passed after the compressor starts operation and the hot adjustment mode has finished, the unit is detected as abnormal when condenser/evaporator pipe temperature is not in heating range within 20 minutes. Note 3) It takes at least 27 minutes to detect abnormality. Note 4) It excludes the period of defrosting (Detection restarts when defrosting mode is over) Heating range:3 deg C[5.4deg F]≤(TH5-TH1)	① Slight temperature difference between indoor room temperature and pipe <liquid or condenser / evaporator> temperature thermistor • Shortage of refrigerant • Disconnected holder of pipe <liquid or condenser / evaporator> thermistor • Defective refrigerant circuit ② Converse connection of extension pipe (on plural units connection) ③ Converse wiring of indoor/outdoor unit connecting wire (on plural units connection) ④ Defective detection of indoor room temperature and pipe <condenser / evaporator> temperature thermistor ⑤ Stop valve is not opened completely.	①~④ Check pipe <liquid or condenser / evaporator> temperature with room temperature display on remote controller and outdoor controller circuit board. Pipe <liquid or condenser / evaporator> temperature display is indicated by setting SW2 of outdoor controller circuit board as follows. (Conduct temperature check with outdoor controller circuit board after connecting 'A-Control Service Tool(PAC-SK52ST)'). ②③ Check converse connection of extension pipe or converse wiring of indoor/outdoor unit connecting wire.

Error Code	Abnormal point and detection method	Cause	Countermeasure
P9	Pipe temperature thermistor / Condenser-Evaporator (TH5) ① The unit is in 3-minute resume protection mode if short/open of thermistor is detected. Abnormal if the unit does not get back to normal within 3 minutes. (The unit returns to normal operation, if it has been reset normally.) ② Constantly detected during cooling, drying, and heating operation (except defrosting) Short: 90°C (194°F) or more Open: -40°C (-40°F) or less	① Defective thermistor characteristics ② Contact failure of connector (CN29) on the indoor controller board (Insert failure) ③ Breaking of wire or contact failure of thermistor wiring ④ Temperature of thermistor is 90°C (194°F) or more or -40°C (-40°F) or less caused by defective refrigerant circuit. ⑤ Defective indoor controller board	①—③ Check resistance value of thermistor. For characteristics, refer to (P1) above. ② Check contact failure of connector (CN29) on the indoor controller board. Refer to 10-7. Turn the power on and check restart after inserting connector again. ④ Operate in test run mode and check pipe <condenser / evaporator> temperature with outdoor controller circuit board. If pipe <condenser / evaporator> temperature is extremely low (in cooling mode) or high (in heating mode), refrigerant circuit may have defect. ⑤ Operate in test run mode and check pipe <condenser / evaporator> temperature with outdoor control circuit board. If there is exclusive difference with actual pipe <condenser / evaporator> temperature replace indoor controller board. There is no abnormality if none of above comes within the unit. Turn the power off and on again to operate. (In case of checking pipe temperature with outdoor controller circuit board, be sure to connect A-control service tool (PAC-SK52ST).)
E0 or E4	Remote controller transmission error(E0)/signal receiving error(E4) ① Abnormal if main or sub remote controller cannot receive any transmission normally from indoor unit of refrigerant address "0" for 3 minutes. (Error code : E0) ② Abnormal if sub-remote controller could not receive for any signal for 2 minutes. (Error code: E0) ① Abnormal if indoor controller board can not receive any data from remote controller board or normally from other indoor controller board for 3 minutes. (Error code: E4) ② Indoor controller board cannot receive any signal from remote controller for 2 minutes. (Error code: E4)	① Contact failure at transmission wire of remote controller ② All remote controllers are set as "sub" remote controller. In this case, E0 is displayed on remote controller, and E4 is displayed at LED (LED1, LED2) on the outdoor controller circuit board. ③ Miswiring of remote controller ④ Defective transmitting receiving circuit of remote controller ⑤ Defective transmitting receiving circuit of indoor controller board of refrigerant address "0" ⑥ Noise has entered into the transmission wire of remote controller.	① Check disconnection or looseness of indoor unit or transmission wire of remote controller. ② Set one of the remote controllers "main" if there is no problem with the action above. ③ Check wiring of remote controller. • Total wiring length: max. 500m (Do not use cable × 3 or more.) • The number of connecting indoor units: max. 16 units • The number of connecting remote controller: max. 2 units When the above-mentioned problem ①—③ are not seen. ④ Diagnose remote controllers. a) When "RC OK" is displayed, remote controllers have no problem. Turn the power off, and on again to check. If abnormality generates again, replace indoor controller board. b) When "RC NG" is displayed, replace remote controller. c) When "RC E3" is displayed, d) When "ERC 00-06" is displayed, [c,d)→Noise may be causing abnormality.] * If the unit is not normal after replacing indoor controller board in group control, the indoor controller board of address "0" may be abnormal.
E3 or E5	Remote controller transmission error(E3)/signal receiving error(E5) ① Abnormal if remote controller could not find blank of transmission path for 6 seconds and could not transmit. (Error code: E3) ② Remote controller receives transmitted data at the same time, compares the data, and when detecting it, judges different data to be abnormal 30 continuous times. (Error code: E3) ① Abnormal if indoor controller board could not find blank of transmission path. (Error code: E5) ② Indoor controller board receives transmitted data at the same time, compares the data, and when detecting it, judges different data to be abnormal 30 continuous times. (Error code: E5)	① 2 remote controller are set as "main." (In case of 2 remote controllers) ② Remote controller is connected with 2 indoor units or more. ③ Repetition of refrigerant address ④ Defective transmitting receiving circuit of remote controller ⑤ Defective transmitting receiving circuit of indoor controller board ⑥ Noise has entered into transmission wire of remote controller.	① Set a remote controller to main, and the other to sub. ② Remote controller is connected with only 1 indoor unit. ③ The address changes to a separate setting. ④~⑥ Diagnose remote controller. a) When "RC OK" is displayed, remote controllers have no problem. Turn the power off, and on again to check. When becoming abnormal again, replace indoor controller board. b) When "RC NG" is displayed, replace remote controller. c) When "RC E3" or "ERC 00-66" is displayed, noise may be causing abnormality.



Error Code	Abnormal point and detection method	Cause	Countermeasure
E6	Indoor/outdoor unit communication error (Signal receiving error) ① Abnormal if indoor controller board cannot receive any signal normally for 6 minutes after turning the power on. ② Abnormal if indoor controller board cannot receive any signal normally for 3 minutes. ③ Consider the unit as abnormal under the following condition: When 2 or more indoor units are connected to 1 outdoor unit, indoor controller board cannot receive a signal for 3 minutes from outdoor controller circuit board, a signal which allows outdoor controller circuit board to transmit signals.	① Contact failure, short circuit or, miswiring (converse wiring) of indoor/outdoor unit connecting wire ② Defective transmitting receiving circuit of indoor controller board ③ Defective transmitting receiving circuit of indoor controller board ④ Noise has entered into indoor/outdoor unit connecting wire.	* Check LED display on the outdoor control circuit board. (Connect A-control service tool, PAC-SK52ST.) For EA-EC item, refer to outdoor unit service manual. ① Check disconnection or looseness of indoor/outdoor unit connecting wire of indoor unit or outdoor unit. Check all the units in case of twin indoor unit system. ②-④ Turn the power off, and on again to check. If abnormality generates again, replace indoor controller board or outdoor controller circuit board. * Other indoor controller board may have defect in case of twin indoor unit system.
E7	Indoor/outdoor unit communication error (Transmitting error) Abnormal if "1" receiving is detected 30 times continuously though indoor controller board has transmitted "0".	① Defective transmitting receiving circuit of indoor controller board ② Noise has entered into power supply. ③ Noise has entered into outdoor control wire.	①-③ Turn the power off, and on again to check. If abnormality generates again, replace indoor controller board.
Fb	Indoor controller board Abnormal if data cannot be read normally from the nonvolatile memory of the indoor controller board.	① Defective indoor controller board	① Replace indoor controller board.
E1 or E2	Remote controller control board ① Abnormal if data cannot be read normally from the nonvolatile memory of the remote controller control board. (Error code: E1) ② Abnormal if the clock function of remote controller cannot be operated normally. (Error code: E2)	① Defective remote controller	① Replace remote controller.
PA (2502) (2500)	Forced compressor stop (due to water leakage abnormality) ① When the intake temperature subtracted with liquid pipe temperature is less than -10°C (14°F), drain sensor detects whether it is soaked in the water or not at the interval of 90 seconds. (Drain pump will start operating when the drain sensor detects to be soaked in the water.) ② The unit has a water leakage abnormality when the following conditions, a and b, are satisfied while the above-mentioned detection is performed. a) The drain sensor detects to be soaked in the water 10 times in a row. b) The intake temperature subtracted with liquid pipe temperature is detected to be less than -10°C (14°F) for a total of 30 minutes. (When the drain sensor detects to be NOT soaked in the water, the detection record of a and b will be cleared.) ③ The drain sensor detection is performed in operations other than cooling. (When the unit stops operating, during heating or fan operation, when the unit stops because of some abnormality) *Once the water leakage abnormality is detected, abnormality state will not be released until the main power is reset.	① Drain pump trouble ② Drain defective · Drain pump clogging · Drain pipe clogging ③ Open circuit of drain sensor side heater ④ Contact failure of drain sensor connector ⑤ Dew condensation on drain sensor · Drain water trickles along lead wire. · Drain water waving due to filter clogging ⑥ Extension piping connection difference at twin system ⑦ Miswiring of indoor/ outdoor connecting at twin system ⑧ Room temperature thermistor / liquid pipe temperature thermistor detection is defective.	① Check the drain pump. ② Check whether water can be drained. ③ Check the resistance of the drain sensor. ④ Check the connector contact failure. ⑤ Check the drain sensor leadwire mounted. Check the filter clogging. ⑥ Check the piping connection. ⑦ Check the indoor/ outdoor connecting wires. ⑧ Check the room temperature display of remote controller. Check the indoor liquid pipe temperature display of outdoor controller board.

10-4. TROUBLESHOOTING BY INFERIOR PHENOMENA

Note: Refer to the manual of outdoor unit for the detail of remote controller.

Phenomena	Cause	Countermeasure
(1) LED2 on indoor controller board is off.	When LED1 on indoor controller board is also off. ① Power supply of rated voltage is not supplied to outdoor unit. ② Defective outdoor controller circuit board ③ Power supply of 208/230V is not supplied to indoor unit. ④ Defective indoor power board ⑤ Defective indoor controller board (For the separate indoor/outdoor unit power supply system) ① Power supply of 208/230V AC is not supplied to indoor unit. ② The connectors of the optional replacement kit are not used. ③ Defective indoor controller board ④ Defective indoor power board	① Check the voltage of outdoor power supply terminal block (L1,L2). - When AC 208/230V is not detected, check the power wiring to outdoor unit and the breaker. - When AC 208/230V is detected, check ② (below). ② Check the voltage between outdoor terminal block S1 and S2. - When AC 208/230V is not detected, —check the fuse on outdoor controller circuit board. —check the wiring connection. - When AC 208/230V is detected, check ③ (below). ③ Check the voltage between indoor terminal block S1 and S2. - When AC 208/230V is not detected, check indoor/outdoor unit connecting wire for miswiring. - When AC 208/230V is detected, check ④ (below). ④ Check voltage output from CN2S on indoor power board (DC13.1V). Refer to 10-7-1. - When no voltage is output, check the wiring connection. - When output voltage is between DC12.5V and DC13.7V, check ⑤ (below). ⑤ Check the wiring connection between indoor controller board and indoor power board. Check the fuse on indoor controller board. If no problems are found, indoor controller board is defective. ① Check the voltage of indoor power supply terminal block (L1,L2). - When AC208/230V is not detected, check the power supply wiring. - When AC208/230V is detected, check ② (below). ② Check that there is no problem in the method of connecting the connectors. - When there are problems in the method of connecting the connectors, connect the connector correctly referring to installation manual of an optional kit. - When there is no problem in the method of connecting the connectors, check ③ (below). ③ Check voltage output from CNDK on indoor controller board. - When AC208/230V is not detected, —check the fuse on indoor controller board. —check the wiring connection between indoor power supply terminal block and CND on indoor controller board. - When AC208/230V is detected, check ④ (below). ④ Check voltage output from CN2S on indoor power board. - When no voltage output, check the wiring connection between CNDK on indoor controller board and CNSK on indoor power board. - If no problem are found, indoor power board is defective. - When DC12.5~13.7V is detected, check the wiring connection between CN2S on indoor power board and CN2D on indoor power board. - If no problem are found, indoor controller board is defective.

Note: Refer to the manual of the outdoor unit for the detail of remote controller.

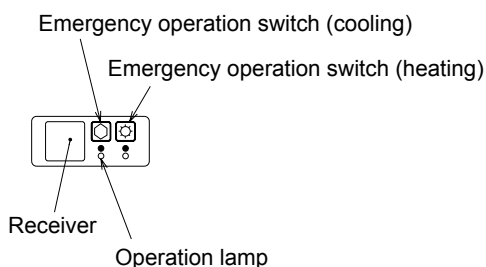
Phenomena	Cause	Countermeasure
(1)LED2 on indoor controller board is off.	When LED1 on indoor controller board is lit. ① Mis-setting of refrigerant address for outdoor unit (There is no unit corresponding to refrigerant address "0".)	① Check again the setting of refrigerant address for outdoor unit. Set the refrigerant address to "0". (For grouping control system under which 2 or more outdoor units are connected, set one of the units to "0".) Set refrigerant address using SW1 (3-6) on outdoor controller circuit board.
(2)LED2 on indoor controller board is blinking.	When LED1 on indoor controller board is also blinking. Connection failure of indoor/outdoor unit connecting wire	Check indoor/outdoor unit connecting wire for connection failure.
	When LED1 is lit. ① Miswiring of remote controller wires Under indoor unit system, 2 indoor units are wired together. ② Refrigerant address for outdoor unit is wrong or not set. Under grouping control system, there are some units whose refrigerant address is 0. ③ Shortcut of remote controller wires ④ Defective remote controller	① Check the connection of remote controller wires in case of twin indoor unit system. When 2 or more indoor units are wired in one refrigerant system, connect remote controller wires to one of those units. ② Check the setting of refrigerant address in case of grouping control system. If there are some units whose refrigerant addresses are 0 in one group, set one of the units to 0 using SW1 (3-6) on outdoor controller circuit board. ③④ Remove remote controller wires and check LED2 on indoor controller board. - When LED2 is blinking, check the short-cut of remote controller wires. - When LED2 is lit, connect remote controller wires again and: if LED2 is blinking, remote controller is defective; if LED2 is lit, connection failure of remote controller terminal block etc. has returned to normal.
(3)Upward/downward vane performance failure	① The vane is not downward during defrosting and heat preparation and when the thermostat is OFF in HEAT mode. (Working of COOL protection function) ② Vane motor does not rotate. - Defective vane motor - Breaking of wire or connection failure of connector - Up/downward vane setting is "No vanes". ③ Upward/downward vane does not work. - The vane is set to fixed position.	① Normal operation (The vane is set to horizontal regardless of remote control.) ② Check ② (left). - Check the vane motor. (Refer to "How to check the parts".) - Check for breaking of wire or connection failure of connector. - Check "Up/down vane setting". (Unit function selection by remote controller). ③ Normal operation (Each connector on vane motor side is disconnected.)
(4)Receiver for wireless remote controller	① Weak batteries of wireless remote controller ② Contact failure of connector (CNB) on wireless remote controller board(Insert failure) ③ Contact failure of connector (CN90) on indoor controller board(Insert failure) ④ Contact failure of connector between wireless remote controller board and indoor controller board	① Replace batteries of the wireless remote controller. ②~④ Check contact failure of each connector. If no problems are found in connector, replace indoor controller board. When the same trouble occurs even if indoor controller board is replaced, replace wireless remote controller board.

10-5. EMERGENCY OPERATION

10-5-1. When wireless remote controller has troubles or its battery is exhausted

- Emergency operation is available in such a case using emergency operation switch equipped next to the receiver of indoor unit.
- To start operation
 - Cooling Operation.....Press  (Cooling) switch.
 - Heating Operation.....Press  (Heating) switch.

※When the unit starts operating, the operation lamp is lit.



※Emergency operation will be performed as follows.

Mode	Cooling	Heating
Set temperature	24°C , 75°F	24°C , 75°F
Fan speed	High	High
Airflow direction	Horizontal (30deg)	Downward (70deg)

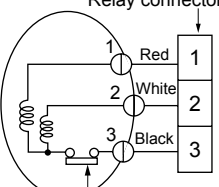
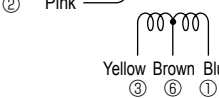
- To stop operation
 - Press either emergency operation switch (cooling/heating).

10-5-2. When wired remote controller or indoor unit microcomputer has troubles

- If other defects are not found when trouble occurs, emergency operation starts as the indoor controller board switch (SWE) is set to ON.
During the emergency operation the indoor unit is as follows;
 - Indoor fan high speed operation
- For emergency operation of cooling or heating
When emergency operation for COOL or HEAT, setting of the switch (SWE) in the indoor controller board and outdoor unit emergency operation are necessary.
- Check items and notices as the emergency operation
 - Emergency operation cannot be used as follows;
 - When the outdoor unit is something wrong
 - When the indoor fan is something wrong
 - When drain over flow protection operation is detected during self-diagnosis (Error code : P5)
 - Emergency operation will be serial operation by the power supply ON/OFF.
ON/OFF or temperature, etc. adjustment is not operated by the remote controller.
 - Do not operate for a long time as cold air is blown when the outdoor unit starts defrosting operation during heat emergency operation.
 - Cool emergency operation must be within 10 hours. Otherwise, heat exchanger of indoor unit may get frosted.
 - After completing the emergency operation, return the switch setting, etc. in former state.
 - Since vane does not work at emergency operation, position the vane slowly by hand.

10-6. HOW TO CHECK THE PARTS

PKA-A12/ 18GA **PKA-A24/ 30/ 36FA** **PKA-A12/ 18GAL** **PKA-A24/ 30/ 36FAL**
PKA-A12/ 18GA₁ **PKA-A24/ 30/ 36FA₁** **PKA-A12/ 18GAL₁** **PKA-A24/ 30/ 36FAL₁**
PKA-A12/ 18GA₂ **PKA-A24/ 30/ 36FA₂** **PKA-A12/ 18GAL₂** **PKA-A24/ 30/ 36FAL₂**

Parts name	Check points				
Room temperature thermistor (TH1) Pipe temperature thermistor (TH2) Condenser/evaporator temperature thermistor (TH5)	Disconnect the connector then measure the resistance with a tester. (At the ambient temperature 10°C (50°F)~30°C (86°F))				
	Normal	Abnormal			
	4.3kΩ~9.6kΩ	Open or short			
	(Refer to Thermistor Characteristic graph.)				
Fan motor (MF) 	Measure the resistance between the terminals with a tester. (Winding temperature 20°C (68°F))				
	Motor terminal or Relay connector	Normal			Abnormal
		PKA-A12, 18GA ₍₁₎₍₂₎ PKA-A12, 18GAL ₍₁₎₍₂₎	PKA-A24, 30FA ₍₁₎₍₂₎ PKA-A24, 30FAL ₍₁₎₍₂₎	PKA-A36FA ₍₁₎₍₂₎ PKA-A36FAL ₍₁₎₍₂₎	Open or short
	Red-Black	141.2Ω	107.4Ω	69.7Ω	
	White-Black	131.5Ω	97.7Ω	95.5Ω	
Vane motor (MV) ④ Orange ⑤ Red ② Pink 	Measure the resistance between the terminals with a tester. (At the ambient temperature 20°C (68°F)~30°C (86°F))				
	Connector	Normal		Abnormal	
	Brown-Yellow	186~214Ω		Open or short	
	Brown-Blue				
	Red-Orange				
	Red-Pink				

<Thermistor characteristic graph>

Thermistor for lower temperature

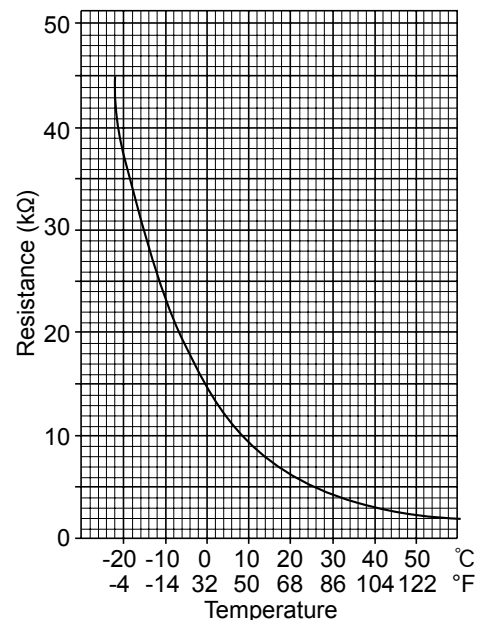
Room temperature thermistor(TH1)
 Pipe temperature thermistor(TH2)
 Condenser/evaporator temperature thermistor(TH5)

Thermistor R₀=15kΩ ± 3%
 Fixed number of B=3480 ± 2%

$$t(^{\circ}\text{C}): R_t = 15 \exp \left\{ 3480 \left(\frac{1}{273+t} - \frac{1}{273} \right) \right\}$$

$$T(^{\circ}\text{F}): R_t = 15 \exp \left\{ 3480 \left(\frac{1}{273 + \frac{T-32}{1.8}} - \frac{1}{273} \right) \right\}$$

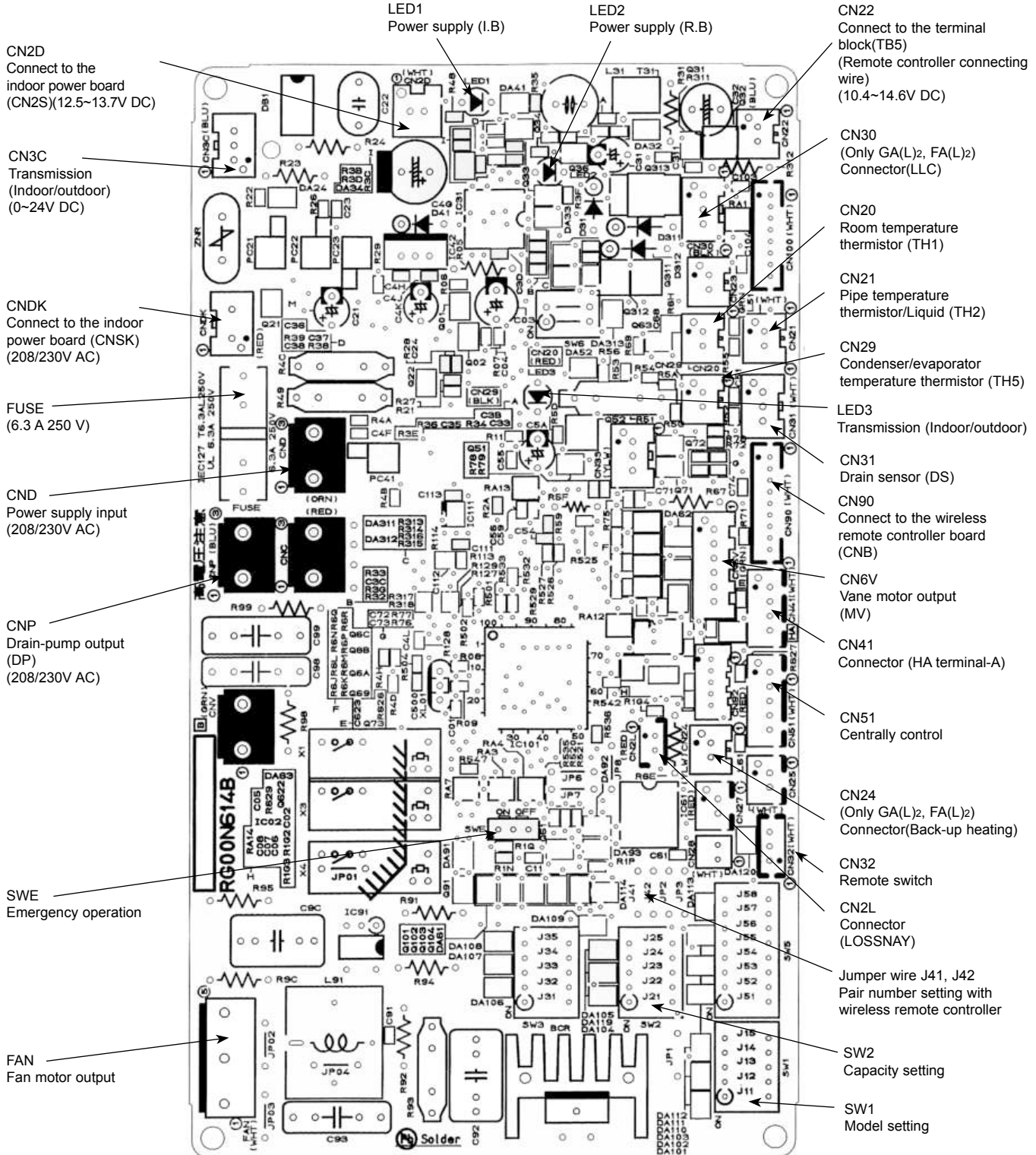
0°C (32°F)	15kΩ
10°C (50°F)	9.6kΩ
20°C (68°F)	6.3kΩ
25°C (77°F)	5.4kΩ
30°C (86°F)	4.3kΩ
40°C (104°F)	3.0kΩ



10-7. TEST POINT DIAGRAM

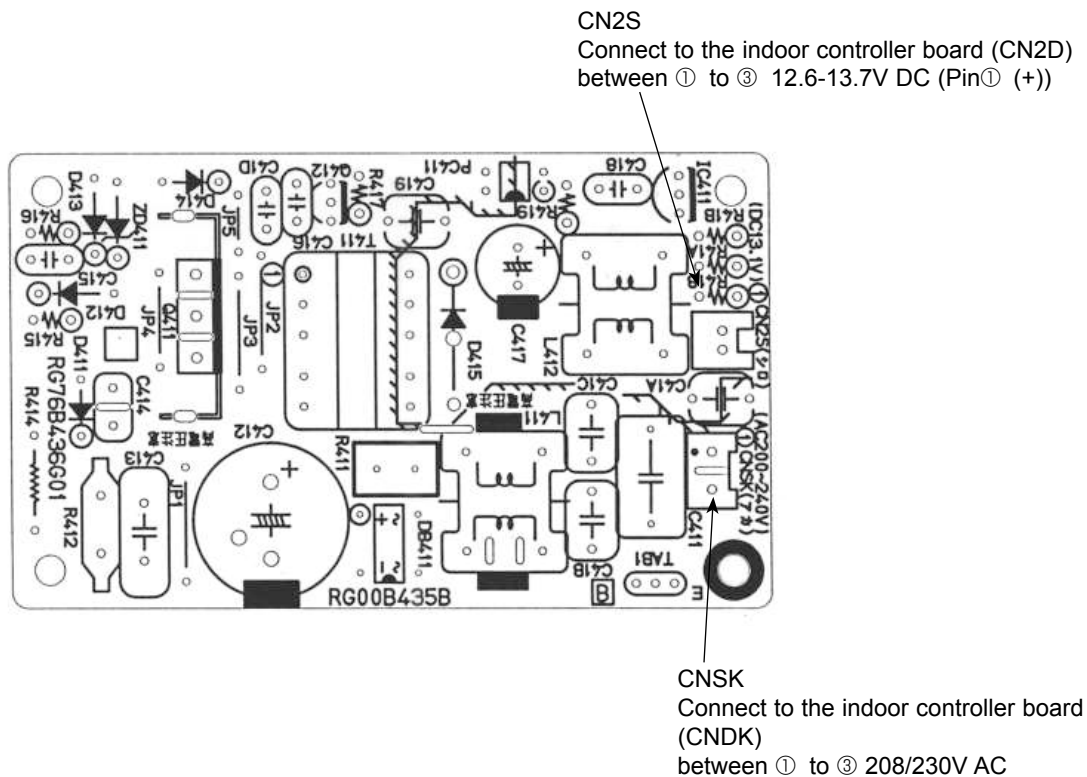
10-7-1. Indoor controller board

PKA-A12GA	PKA-A18GA	PKA-A24FA	PKA-A30FA	PKA-A36FA
PKA-A12GAL	PKA-A18GAL	PKA-A24FAL	PKA-A30FAL	PKA-A36FAL
PKA-A12GA ₁	PKA-A18GA ₁	PKA-A24FA ₁	PKA-A30FA ₁	PKA-A36FA ₁
PKA-A12GAL ₁	PKA-A18GAL ₁	PKA-A24FAL ₁	PKA-A30FAL ₁	PKA-A36FAL ₁
PKA-A12GA ₂	PKA-A18GA ₂	PKA-A24FA ₂	PKA-A30FA ₂	PKA-A36FA ₂
PKA-A12GAL ₂	PKA-A18GAL ₂	PKA-A24FAL ₂	PKA-A30FAL ₂	PKA-A36FAL ₂



10-7-2. Indoor power board

PKA-A12GA	PKA-A12GAL	PKA-A12GA ₁	PKA-A12GAL ₁	PKA-A12GA ₂	PKA-A12GAL ₂
PKA-A18GA	PKA-A18GAL	PKA-A18GA ₁	PKA-A18GAL ₁	PKA-A18GA ₂	PKA-A18GAL ₂
PKA-A24FA	PKA-A24FAL	PKA-A24FA ₁	PKA-A24FAL ₁	PKA-A24FA ₂	PKA-A24FAL ₂
PKA-A30FA	PKA-A30FAL	PKA-A30FA ₁	PKA-A30FAL ₁	PKA-A30FA ₂	PKA-A30FAL ₂
PKA-A36FA	PKA-A36FAL	PKA-A36FA ₁	PKA-A36FAL ₁	PKA-A36FA ₂	PKA-A36FAL ₂



10-8. FUNCTIONS OF DIP SWITCH AND JUMPER WIRE

Each function is controlled by the dip switch and the jumper wire on control P.C. board.

SW1 and SW2 are equipped only for service parts.

Model setting and capacity setting are memorized in the nonvolatile memory of the control P.C. board of the unit.

(Marks in the table below) Jumper wire (○ : Short × : Open)

Jumper wire	Functions	Setting by the dip switch and jumper wire	Remarks																																																																								
SW1	Model settings	For service board <table><tr><td>PKA-A12,18GA₍₁₎₍₂₎ PKA-A12,18GAL₍₁₎₍₂₎</td><td><table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td>OFF</td></tr></table></td></tr><tr><td>PKA-A24,30,36FA₍₁₎₍₂₎ PKA-A24,30,36FAL₍₁₎₍₂₎</td><td><table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td>OFF</td></tr></table></td></tr></table>	PKA-A12,18GA ₍₁₎₍₂₎ PKA-A12,18GAL ₍₁₎₍₂₎	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td>OFF</td></tr></table>	1	2	3	4	5	ON						OFF	PKA-A24,30,36FA ₍₁₎₍₂₎ PKA-A24,30,36FAL ₍₁₎₍₂₎	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td>OFF</td></tr></table>	1	2	3	4	5	ON						OFF																																													
PKA-A12,18GA ₍₁₎₍₂₎ PKA-A12,18GAL ₍₁₎₍₂₎	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td>OFF</td></tr></table>	1	2	3	4	5	ON						OFF																																																														
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1	2	3	4	5	ON																																																																						
					OFF																																																																						
SW2	Capacity settings	<table><tr><th>MODELS</th><th>Service board</th></tr><tr><td>PKA-A12GA₍₁₎₍₂₎ PKA-A12GAL₍₁₎₍₂₎</td><td><table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td>OFF</td></tr></table></td></tr><tr><td>PKA-A18GA₍₁₎₍₂₎ PKA-A18GAL₍₁₎₍₂₎</td><td><table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td>OFF</td></tr></table></td></tr><tr><td>PKA-A24FA₍₁₎₍₂₎ PKA-A24FAL₍₁₎₍₂₎</td><td><table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td>OFF</td></tr></table></td></tr><tr><td>PKA-A30FA₍₁₎₍₂₎ PKA-A30FAL₍₁₎₍₂₎</td><td><table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td>OFF</td></tr></table></td></tr><tr><td>PKA-A36FA₍₁₎₍₂₎ PKA-A36FAL₍₁₎₍₂₎</td><td><table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td>OFF</td></tr></table></td></tr></table>	MODELS	Service board	PKA-A12GA ₍₁₎₍₂₎ PKA-A12GAL ₍₁₎₍₂₎	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td>OFF</td></tr></table>	1	2	3	4	5	ON						OFF	PKA-A18GA ₍₁₎₍₂₎ PKA-A18GAL ₍₁₎₍₂₎	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td>OFF</td></tr></table>	1	2	3	4	5	ON						OFF	PKA-A24FA ₍₁₎₍₂₎ PKA-A24FAL ₍₁₎₍₂₎	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td>OFF</td></tr></table>	1	2	3	4	5	ON						OFF	PKA-A30FA ₍₁₎₍₂₎ PKA-A30FAL ₍₁₎₍₂₎	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td>OFF</td></tr></table>	1	2	3	4	5	ON						OFF	PKA-A36FA ₍₁₎₍₂₎ PKA-A36FAL ₍₁₎₍₂₎	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td>OFF</td></tr></table>	1	2	3	4	5	ON						OFF	
MODELS	Service board																																																																										
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1	2	3	4	5	ON																																																																						
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J41 J42	Pair number setting with wireless remote controller	<table><tr><th>Wireless remote controller setting</th><th colspan="2">Control PCB setting</th></tr><tr><th></th><th>J41</th><th>J42</th></tr><tr><td>0</td><td>○</td><td>○</td></tr><tr><td>1</td><td>×</td><td>○</td></tr><tr><td>2</td><td>○</td><td>×</td></tr><tr><td>3 ~ 9</td><td>×</td><td>×</td></tr></table>	Wireless remote controller setting	Control PCB setting			J41	J42	0	○	○	1	×	○	2	○	×	3 ~ 9	×	×	<Initial setting> Wireless remote controller: 0 Control PCB: ○ (for both J41 and J42) Four pair number settings are supported. The pair number settings of the wireless remote controller and indoor control PCB (J41/J42) are given in the table on the left. ('×' in the table indicates the jumper wire is disconnected.)																																																						
Wireless remote controller setting	Control PCB setting																																																																										
	J41	J42																																																																									
0	○	○																																																																									
1	×	○																																																																									
2	○	×																																																																									
3 ~ 9	×	×																																																																									
JP1	Unit type setting	<table><tr><th>Model</th><th>JP1</th></tr><tr><td>Without TH5</td><td>○</td></tr><tr><td>With TH5</td><td>×</td></tr></table>	Model	JP1	Without TH5	○	With TH5	×	There is no jumper (JP1) because these models have the cond./eva. temperature thermistor (TH5).																																																																		
Model	JP1																																																																										
Without TH5	○																																																																										
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JP3	Indoor controller board type setting	<table><tr><th>Indoor controller board type</th><th>JP3</th></tr><tr><td>For product</td><td>×</td></tr><tr><td>Service parts</td><td>○</td></tr></table>	Indoor controller board type	JP3	For product	×	Service parts	○																																																																			
Indoor controller board type	JP3																																																																										
For product	×																																																																										
Service parts	○																																																																										

11-1. ROTATION FUNCTION(AND BACK-UP FUNCTION, 2ND STAGE CUT-IN FUNCTION)

11-1-1. Operation

(1) Rotation function(and Back-up function)

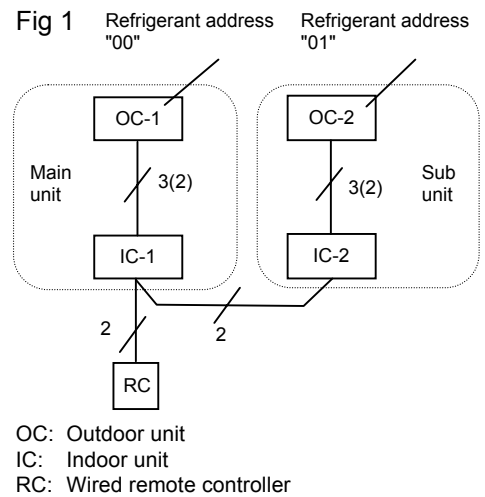
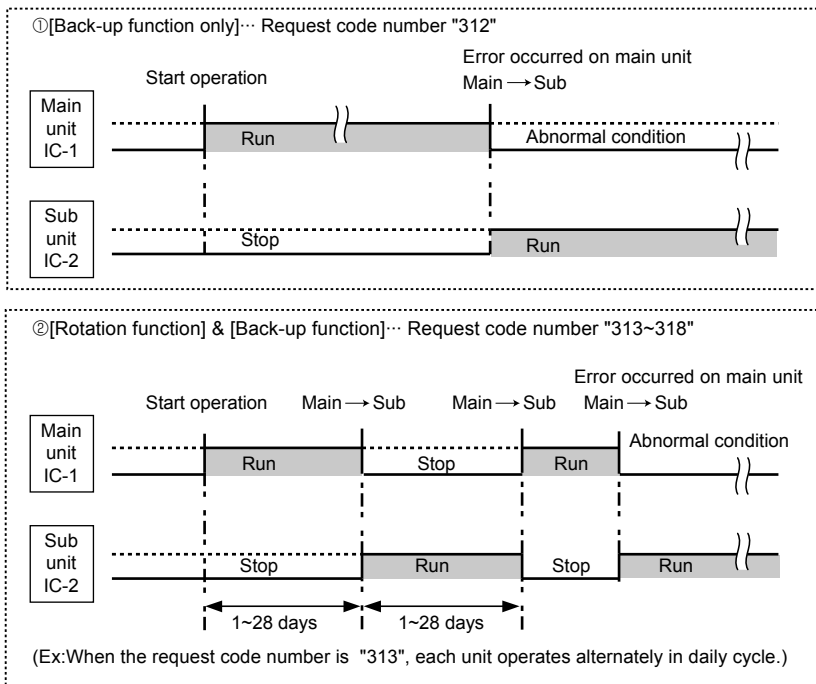
Outline of functions

- Operating the unit of main and sub alternately according to the interval setting. (Rotation function)
- ※The setting of main/sub unit depends on the refrigerant address.(The setting of dip switch on the outdoor unit)
- Refrigerant address"00" → Main unit
- Refrigerant address"01" → Sub unit
- If an error occurs to one unit, the other unit starts.(Back-up function)

System constraint

- This function is available only by the grouping control system(INDOOR UNIT : OUTDOOR UNIT=1:1) of 2 refrigerant group.(Refer to Fig 1)
- It is necessary to connect remote controller crossover wiring to between units(Wireless remote controller is unusable) and to assign refrigerant address to each unit.(Dip switch on the outdoor unit...Refrigerant address 00/01)

Operation pattern



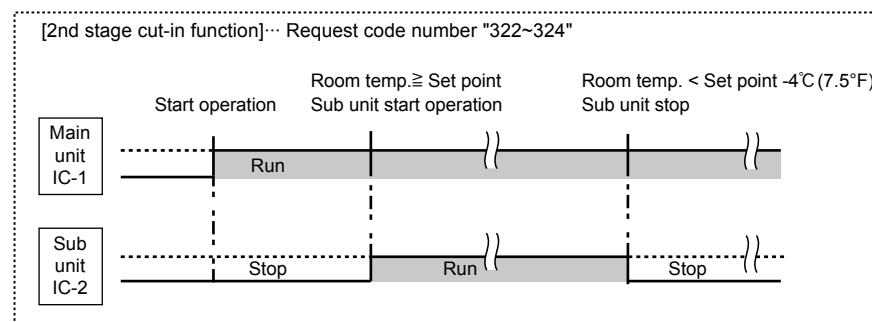
(2) 2nd stage cut-in function

Outline of functions

- Quantity of operating units is controlled according to the room temperature and set point.
- When room temperature becomes more than set point, standby unit starts.(2 units running)
- When room temperature falls below set point -4°C (7.5°F), standby unit stops.(1 unit running)

System constraint

- This function is available only in rotation operation(or back-up) and cooling mode.



11-1-2.How to perform the operation of rotation function(Back-up function, 2nd stage cut-in function)

Set by wired remote controller.(Maintenance monitor)

NOTE

It is necessary to set the same content to both main unit and sub unit.

Every time indoor controller board is replaced for servicing, it is necessary to set each function.

(1) Request Code List

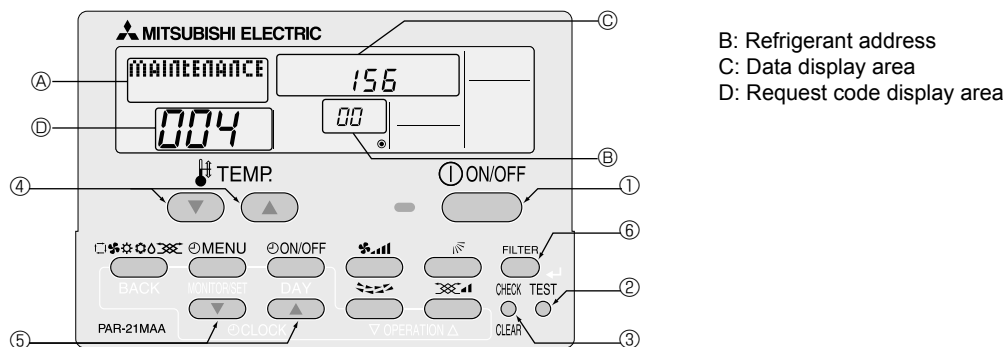
Rotation setting

Setting No. (Request code)	Setting contents	Initial setting
No.1 (310)	Monitoring the request code of current setting.	
No.2 (311)	Rotation and Back-up OFF (Normal group control operation)	☉
No.3 (312)	Back-up function only	
No.4 (313)	Rotation ON (Alternating interval = 1day) and back-up function	
No.5 (314)	Rotation ON (Alternating interval = 3days) and back-up function	
No.6 (315)	Rotation ON (Alternating interval = 5days) and back-up function	
No.7 (316)	Rotation ON (Alternating interval = 7days) and back-up function	
No.8 (317)	Rotation ON (Alternating interval = 14days) and back-up function	
No.9 (318)	Rotation ON (Alternating interval = 28days) and back-up function	

2nd stage cut-in setting

Setting No. (Request code)	Setting contents	Initial setting
No.1 (320)	Monitoring the request code of current setting.	
No.2 (321)	Cut-in function OFF	☉
No.3 (322)	Cut-in function ON (Set point = Set temp. +4°C (7.2°F))	
No.4 (323)	Cut-in function ON (Set point = Set temp. +6°C (10.8°F))	
No.5 (324)	Cut-in function ON (Set point = Set temp. +8°C (14.4°F))	

(2) Setting method of each function by wired remote controller



1. Stop running the air-conditioner(①).
2. Press the **TEST** button (②) for 3 seconds so that [Maintenance mode] appears on the screen (at ①).
→ After a while, [00] appears in the refrigerant address number display area.(at ②)
3. Press the **CHECK** button (③) for 3 seconds to switch to [Maintenance monitor].
Note) It is not possible to switch to [Maintenance monitor] during data request in maintenance mode (i.e., while "----" is blinking) since no buttons are operative.

[----] appears on the screen (at ②) when [Maintenance monitor] is activated.
(The display (at ②) now allows you to set a request code No.)

4. Press the [TEMP (and)] buttons (④) to select the desired refrigerant address.

[Screen②] → ↔ ↔ ↔ ←

5. Press the [CLOCK (and)] buttons (⑤) to set the desired request code No. ("311~318", "321~324", "331~335")
6. Press the **FILTER** button (⑥) to perform function setting.
→ If the above operations are set correctly, request code number will appear in data display area.(at ③)
[Example] When the request code number is "311", [311] appears on the screen.(at ③)]

[Reference]

You can check the request code number of current setting by setting the request code number ("310", "320" or "330") and press the **FILTER** button.(⑥)

[Example] When the current setting is "Setting No.2(Request code 311)", [311] appears on the screen.(at ③)]

7. To return to normal mode, press the **ON/OFF** button (①).

11-2. BACK-UP HEATING FUNCTION(CN24)

11-2-1. Operation

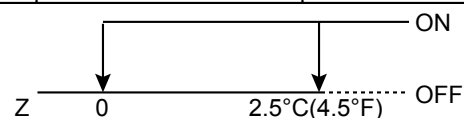
Outline of functions

The back-up heater signal is sent out according to the temperature difference between indoor room temperature and set temperature. This function is available only in heating operation.

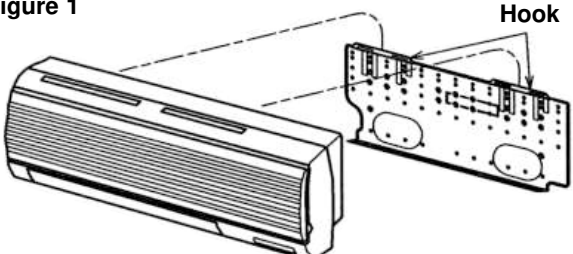
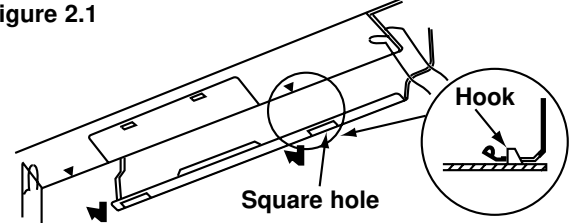
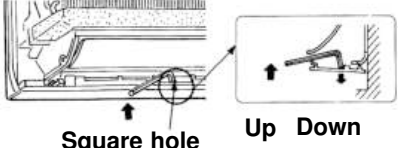
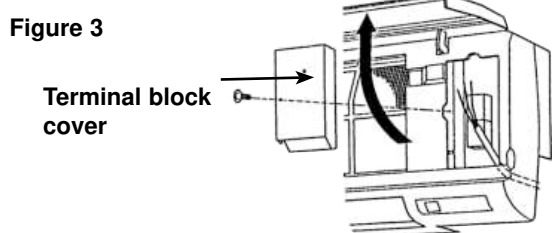
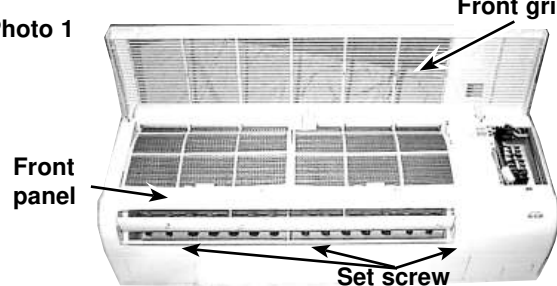
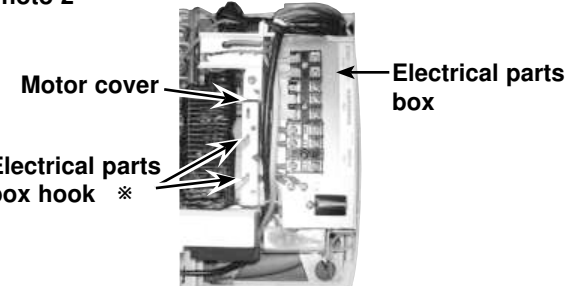
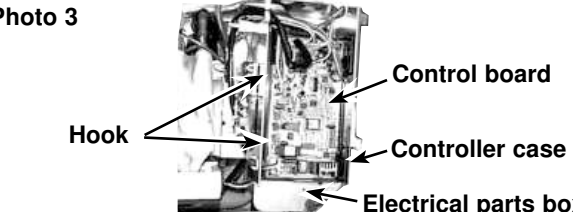
11-2-2. How to connect

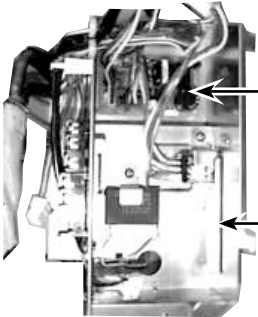
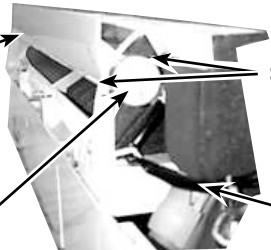
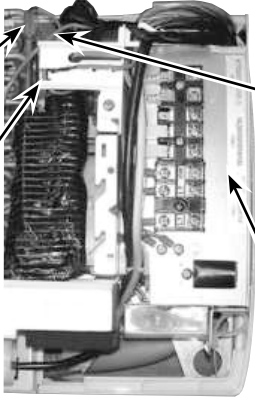
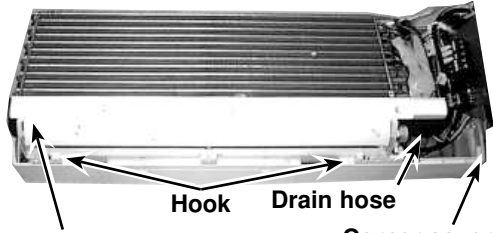
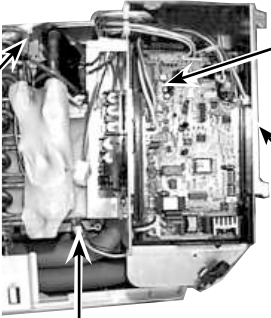
When connecting to the connector CN24 of the indoor unit, use PAC-SE56RA-E(optional parts).

	Temperature difference (Z=Set temp. - Room temp.)	Back-up heater signal output
1	$Z \leq 0^{\circ}\text{C} (^{\circ}\text{F})$	OFF
2	$0 < Z < 2.5^{\circ}\text{C} (4.5^{\circ}\text{F})$	Keeping condition
3	$2.5^{\circ}\text{C} (4.5^{\circ}\text{F}) \leq Z$	ON

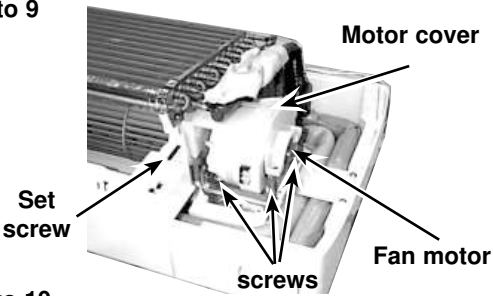
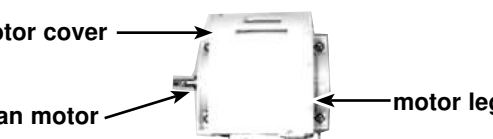
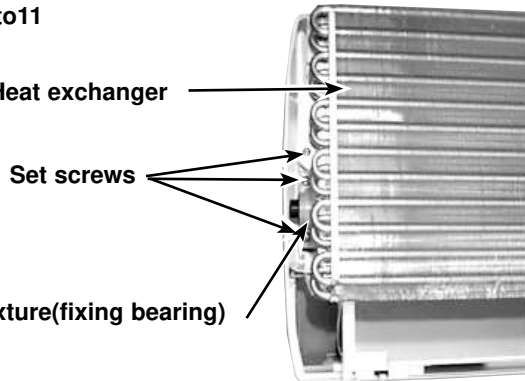
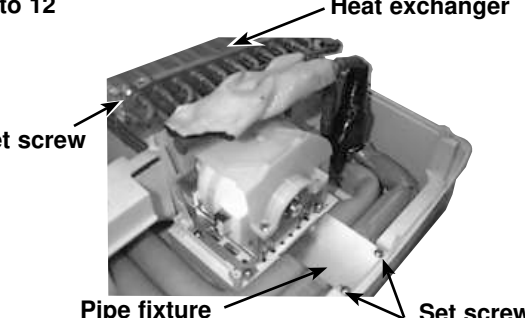
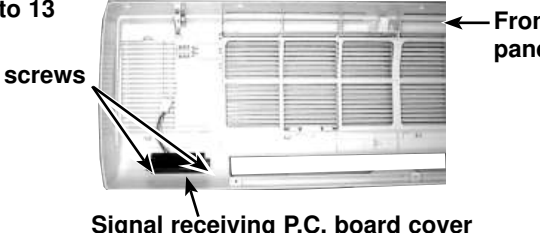
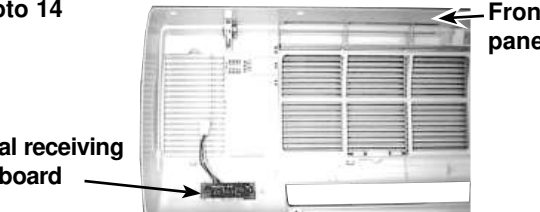


PKA-A12GA PKA-A18GA PKA-A12GA₁ PKA-A18GA₁ PKA-A12GA₂ PKA-A18GA₂
 PKA-A12GAL PKA-A18GAL PKA-A12GAL₁ PKA-A18GAL₁ PKA-A12GAL₂ PKA-A18GAL₂

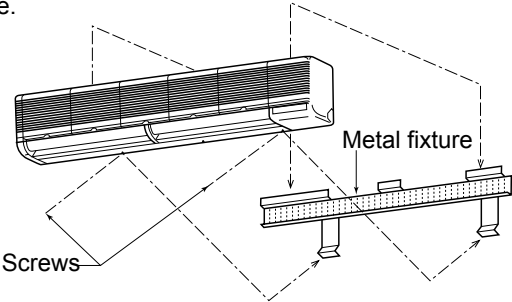
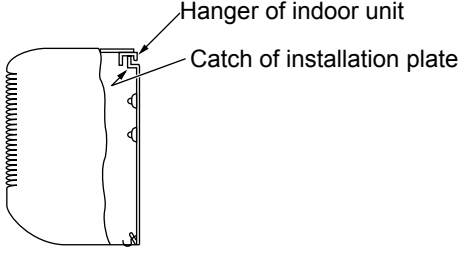
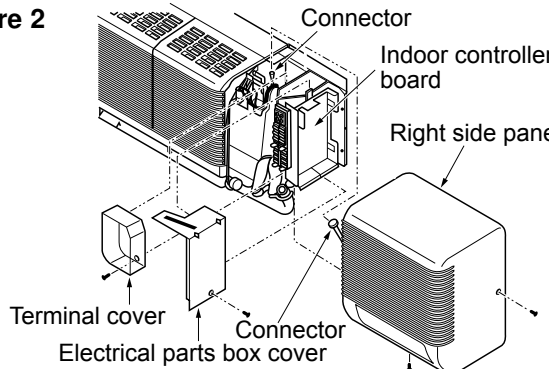
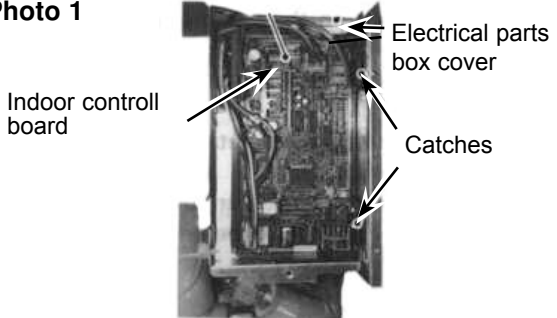
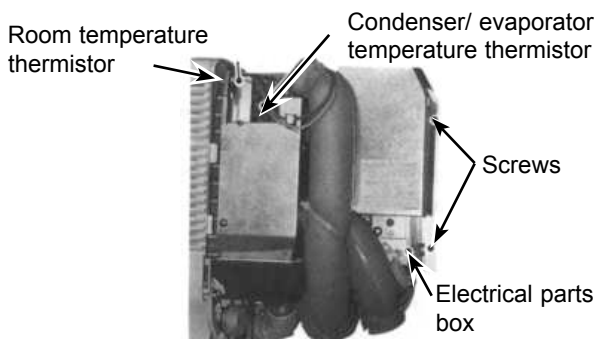
OPERATION PROCEDURE	PHOTOS & ILLUSTRATION
1. REMOVING THE LOWER SIDE OF THE INDOOR UNIT FROM THE INSTALLATION PLATE. (1) Remove the left / right corner box of the indoor unit. (2) Hold and pull down the lower and both ends of the indoor unit, and remove the ▼ section from the square hole. (Refer to the figure 2.1) Or remove the front panel and push the ▼ section down by using hexagonal wrench ,etc. from the front side. (Refer to the figure 2.2). (3) Unhook the top of the indoor unit from the back plate catch.	Figure 1  Figure 2.1 
2. REMOVING THE FRONT PANEL. (1) Open the front grille. (2) Remove the terminal block cover with a screw. (3) Remove the 3 screw caps then remove the 3 set screws. (4) After removing the lower side of the front panel a little, remove it as pulling toward upper.	Figure 2.2  Figure 3  Photo 1 
3. REMOVING THE INDOOR CONTROLLER BOARD. (1) Remove the terminal block cover. (2) Remove the front panel. (see the photo 1) (3) Remove the electrical parts box(2 screws). (4) Remove the electrical parts box cover(1 screw). (5) Disconnect the connector on the controller board and remove the controller board by pulling up the hook of the controller case. *For smooth works, hang the side hooks of the electrical parts box on the hook of the motor cover. (see the photo 3)	Photo 2  Photo 3 

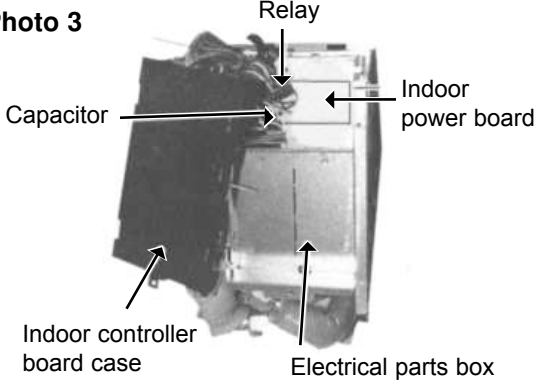
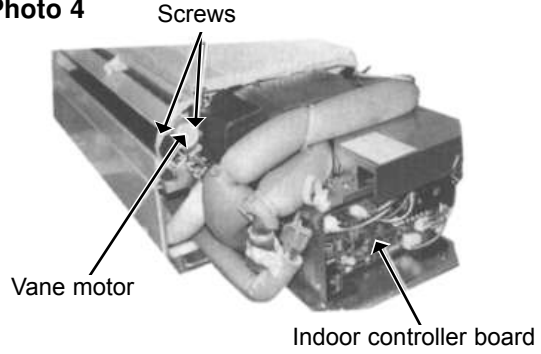
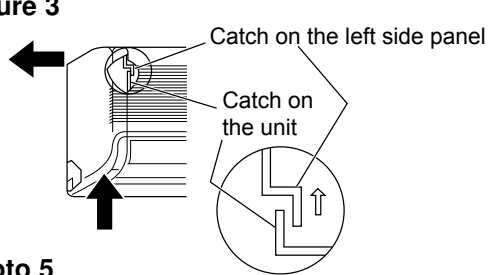
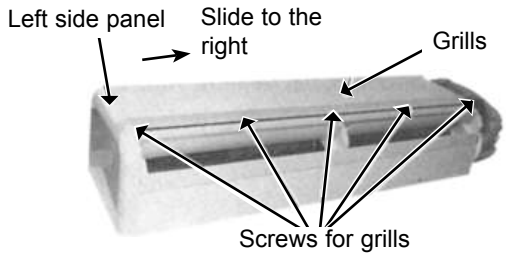
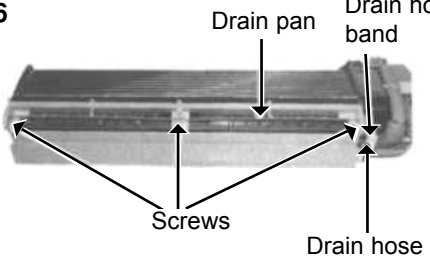
OPERATION PROCEDURE	PHOTOS & ILLUSTRATION
4. REMOVING THE POWER BOARD (1) Remove the front panel. (see the photo 1) (2) Remove the electrical parts box(2 screws). (see the photo 2) (3) Disconnect the whole connector in the control board. (4) After lifting the controller case with pressing its convex section, remove the controller case and the control board simultaneously. (see the photo 3) (5) Disconnect the connector in the power board. (6) Remove the power board.	Photo 4  Power board Electrical parts box
5. REMOVING THE VANE MOTOR (1) Disconnect the connector CN6V on the indoor controller board. (2) Remove the 2 screws of the vane motor, disconnect the lead wire and remove the vane motor from the shaft.	Photo 5  Nozzle assembly Set screws Vane motor Lead wire
6. REMOVING THE THERMISTOR (1) Removing the room temperature thermistor TH1. ①Disconnect the connector CN20<red> on the indoor controller board. ②Remove the room temperature thermistor from the holder. (2) Removing the pipe temperature thermistor TH2. ①Disconnect the connector CN21<white> on the controller board. ②Remove the pipe temperature thermistor set to the pipe. (3) Removing the indoor coil temperature thermistor TH5. ①Disconnect the connector CN29<black> on the indoor controller board. ②Remove the gas pipe thermistor set to the pipe.	Photo 6  Pipe temperature thermistor (TH2) Room temperature thermistor (TH1) Condenser /evaporator temperature thermistor (TH5) Electrical parts box
7. REMOVING THE NOZZLE ASSEMBLY (1) Disconnect the connector CN6V on the controller board. (2) Disconnect the lead wire of the vane motor. (3) Remove the corner cover. (4) Pull the drain hose out from the nozzle assembly. (5) Unhook the hook of the lower nozzle assembly and pull the nozzle assembly toward you, then remove the nozzle assembly by sliding it down.	Photo 7  Hook Drain hose Nozzle assembly Corner cover
8. REMOVING THE ELECTRICAL PARTS BOX (1) Remove the terminal block cover. (2) Disconnect the connector <yellow> of the wireless remote controller board. (3) Remove the front panel. (see the photo 1) (4) Disconnect the vane motor connector. (5) Disconnect the fan motor connector from the fan motor. (6) Disconnect the connector <yellow> of the heater. (only PKH). (7) Remove the liquid(TH2) / gas(TH5) pipe thermistors. (see the photo 6) (8) Remove the electrical parts box (2screws).	Photo 8  Vane motor connector Pipe temperature thermistor Fan motor connector Electrical parts box



OPERATION PROCEDURE	PHOTOS & ILLUSTRATION
9. REMOVING THE FAN MOTOR (1) Remove the terminal block cover. (2) Disconnect the connector <yellow> of the wireless remote controller board. (3) Remove the front panel. (see the photo 1) (4) Remove the electrical parts box. (see the photo 8) (5) Remove the nozzle assemble. (see the photo 7) (6) Remove the fan motor leg fixing 3 screws. (7) Unscrew the set screws by using hexagonal wrench and remove it by sliding the fan motor to right. (8) Remove the 4 screws and remove the motor cover from the fan motor leg.	Photo 9  Photo 10 
10. REMOVING THE LINE FLOW FAN (1) Remove the terminal block cover. (2) Remove the front panel. (see the photo 1) (3) Remove the electrical parts box. (see the photo 8) (4) Remove the nozzle assemble. (see the photo 7) (5) Remove the fan motor. (see the photo 9) (6) Remove the pipe fixture with 2 screws. (see the photo12) (7) Remove the left / right screws of the heat exchanger and pull the left-hand side up. (8) Remove the 2 screws by sliding it toward you remove the fixture(fixing bearing). ※ The fan motor is removable first,when the fan removing is hard. ※ When resetting the fan to the fan motor. Locate and fix the shaft after installing the fan.	Photo11 
11. REMOVING THE HEAT EXCHANGER (1) Remove the terminal block cover. (2) Disconnect the connector <yellow> of the wireless remote controller board. (3) Remove the front panel. (see the photo 1) (4) Remove the electrical parts box. (see the photo 8) (5) Remove the corner box. (6) Remove the nozzle assemble. (see the photo 7) (7) Remove the 2 screws and the pipe fixture. (8) Remove the 2 screws and heat exchanger.	Photo 12 
12. REMOVING THE SIGNAL RECEIVING P.C. BOARD FOR (PKA-A12GAL₍₁₎, PKA-A18GAL₍₁₎) (1) Remove the terminal block cover. (2) Disconnect the connector <yellow> for the wireless remote controller. (3) Remove the front panel. (see the photo 1) (4) Remove the 2 screws and signal receiving P.C. board cover. (5) Remove the signal receiving P.C. board.	Photo 13  Photo 14 

PKA-A24FA	PKA-A30FA	PKA-A24FAL	PKA-A30FAL	PKA-A36FA	PKA-A36FAL
PKA-A24FA₁	PKA-A30FA₁	PKA-A24FAL₁	PKA-A30FAL₁	PKA-A36FA₁	PKA-A36FAL₁
PKA-A24FA₂	PKA-A30FA₂	PKA-A24FAL₂	PKA-A30FAL₂	PKA-A36FA₂	PKA-A36FAL₂

OPERATING PROCEDURE	PHOTOS&ILLUSTRATION
1. Removing the lower side of the indoor unit from the installation plate (1) Remove the 2 screws. Hang the indoor unit hangers to the catches on the installation plate. 	Figure 1 
2. Removing the right side panel (1) Remove the 2 screws of the right side panel: one on the bottom and the other on the upper right-hand side. (2) Disconnect the connector from the adaptor case. (3) Sliding the right side panel to the right, pull it out toward you.	Figure 2 
3. Removing the indoor controller board (1) Remove the right side panel. (2) Remove the screw of the electrical parts box cover, and remove the cover. (3) Disconnect the connectors on the indoor controller board. (4) To unhook the catches on the right-hand side of the indoor controller board, pull the left-hand side toward you and lift up the cover to the right. Then the indoor controller board can be removed.	Photo 1 
4. Removing the electrical parts box (1) Remove the right side panel. (2) Remove the screw of the electrical parts box cover, and remove the cover. (3) Remove the room temperature thermistor and the condenser / evaporator temperature thermistor. (4) Disconnect the vane motor connector on the indoor controller board. (5) Remove the 2 screws of the electrical parts box. (6) Disconnect the connector of the heater lead wire connector. (7) Disconnect the connector of the fan motor lead wire. (8) Remove the electrical parts box.	Photo 2 

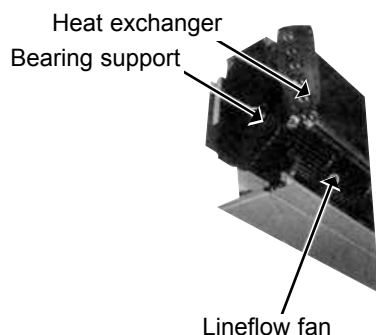
OPERATING PROCEDURE	PHOTOS&ILLUSTRATION
(9) Remove the screws of the indoor controller board case, and pull out the indoor controller board case. Then the indoor power board, the fan motor capacitor and the heater relay can be serviced.	Photo 3 
5. Removing the vane motor (1) Remove the right side panel. (2) Remove the screw of the electrical parts box cover, and remove the cover. (3) Remove the 2 screws of the vane motor, and remove the motor from the shaft. (4) Disconnect the vane motor connector on the indoor controller board.	Photo 4 
6. Removing the intake grilles (1) Remove the right side panel. (2) To remove the left side panel, remove the screw on the bottom and the screw on the upper left-hand side. (See Figure 3.) 1. Press up this side of the left side panel to unhook the catch on the panel from the catch on the unit. 2. Slide the left side panel to the left to remove the panel. Note: Fix the unit to the metal fixture securely. (3) Remove the air filters. (4) Hold and press the centre cover to remove. (5) Remove the screws of the grilles. (6) Pull the lower side of the grille toward you and slide the upper side to the right to remove the grilles.	Figure 3  Photo 5 
7. Removing the drain pan (1) Remove the left and right side panels. (2) Remove the grilles. (3) Remove the electrical parts box cover. (4) Loosen the drain hose band to remove. (5) Remove the 3 screws of the drain pan, and slide the drain pan toward you to remove.	Photo 6 

OPERATING PROCEDURE

8. Removing the line flow fan and the fan motor

- (1) Remove the left and right side panels.
- (2) Remove the grills.
- (3) Remove the electrical parts box.
- (4) Remove the drain pan.
- (5) Loosen the screw that fixes the line flow fan to the fan motor. (See Photo 7.)
- (6) Remove the 4 screws of the motor fixture, and remove the fan motor and the motor fixture at a time (See Photo 8.)
- (7) Remove the screws of the left and right motor supports, and remove the motor supports and the fan motor. (See Photo 9.)
- (8) Remove the 2 screws on the left and right sides of the heat exchanger, and pull the bearing support toward you. (See Photo 11.)
- (9) Remove the screw of the centre support, and remove the support. (See Photo 10.)
- (10) Pull the left-hand side of the heat exchanger toward you, and remove the line flow fan.

Photo 11



PHOTOS

Photo 7

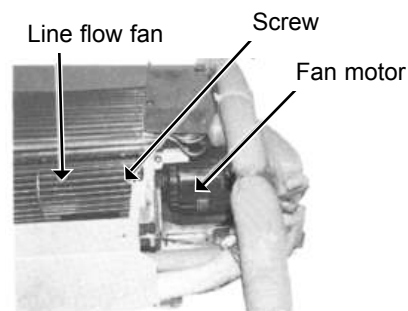


Photo 8

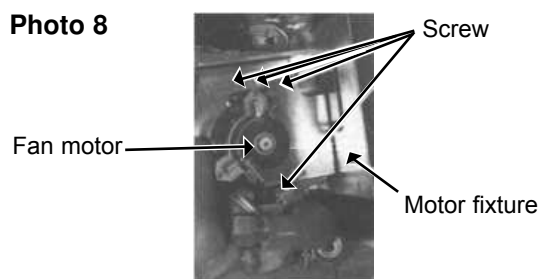


Photo 9

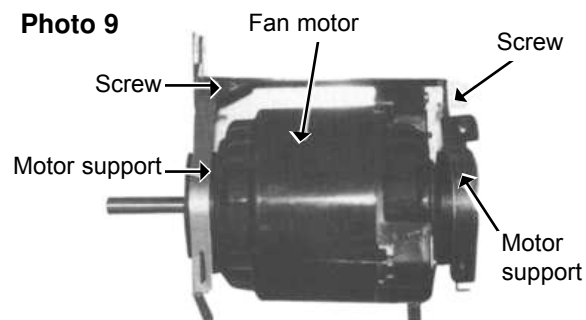


Photo 10

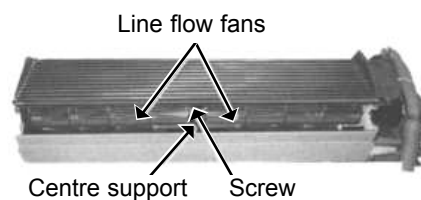
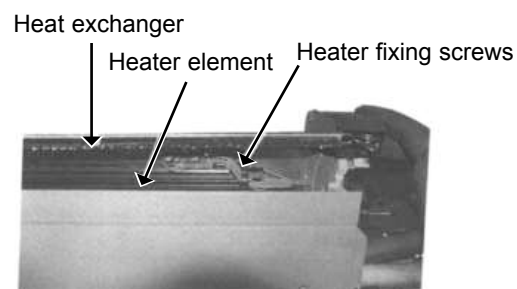
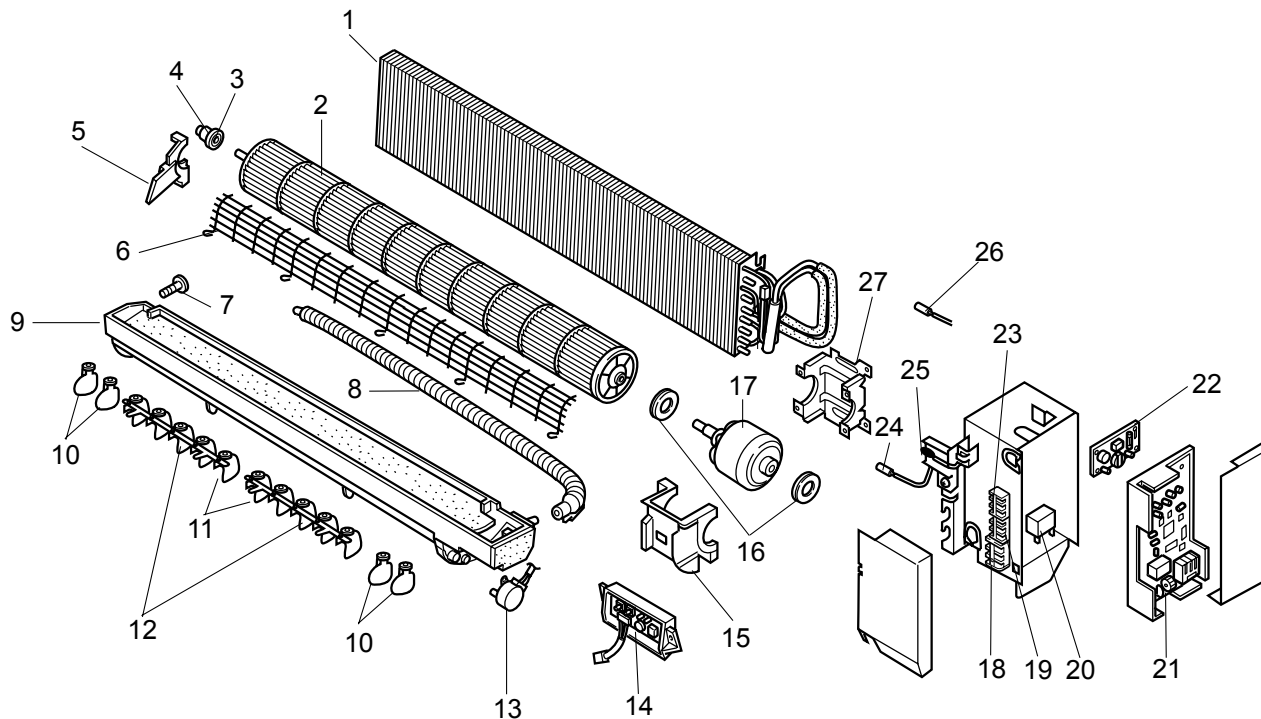


Photo 12



ELECTRICAL PARTS**PKA-A12GA PKA-A12GAL****PKA-A18GA PKA-A18GAL**

No.	Parts No.			Parts Name	Specifications	Q'ty/set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
						PKA-A				
						12,18GA	12, 18GAL			
1	T7W	H28	480	HEAT EXCHANGER		1	1			
2	R01	E22	114	LINE FLOW FAN		1	1			
3	R01	07Y	102	BEARING MOUNT		1	1			
4	R01	005	103	SLEEVE BEARING		1	1			
5	R01	07Y	106	BEARING SUPPORT		1	1			
6	T7W	A00	675	FAN GUARD		1	1			
7	R01	07Y	524	DRAIN PLUG		1	1			
8	R01	07Y	527	DRAIN HOSE		1	1			
9	R01	07Y	530	NOZZLE		1	1			
10	R01	09Y	038	GUIDE VANE		4	4			
11	R01	07Y	038	GUIDE VANE		10	10			
12	R01	07Y	059	ARM		2	2			
13	R01	E04	223	VANE MOTOR		1	1		MV	
14	R01	E03	317	WIRERLESS ADAPTER CONTROLLER BOARD			1		W.B	
15	R01	07Y	135	MOTOR COVER		1	1			
16	R01	07Y	105	RUBBER MOUNT		2	2			
17	T7W	E23	762	FAN MOTOR	PM4V30-K	1	1		MF	

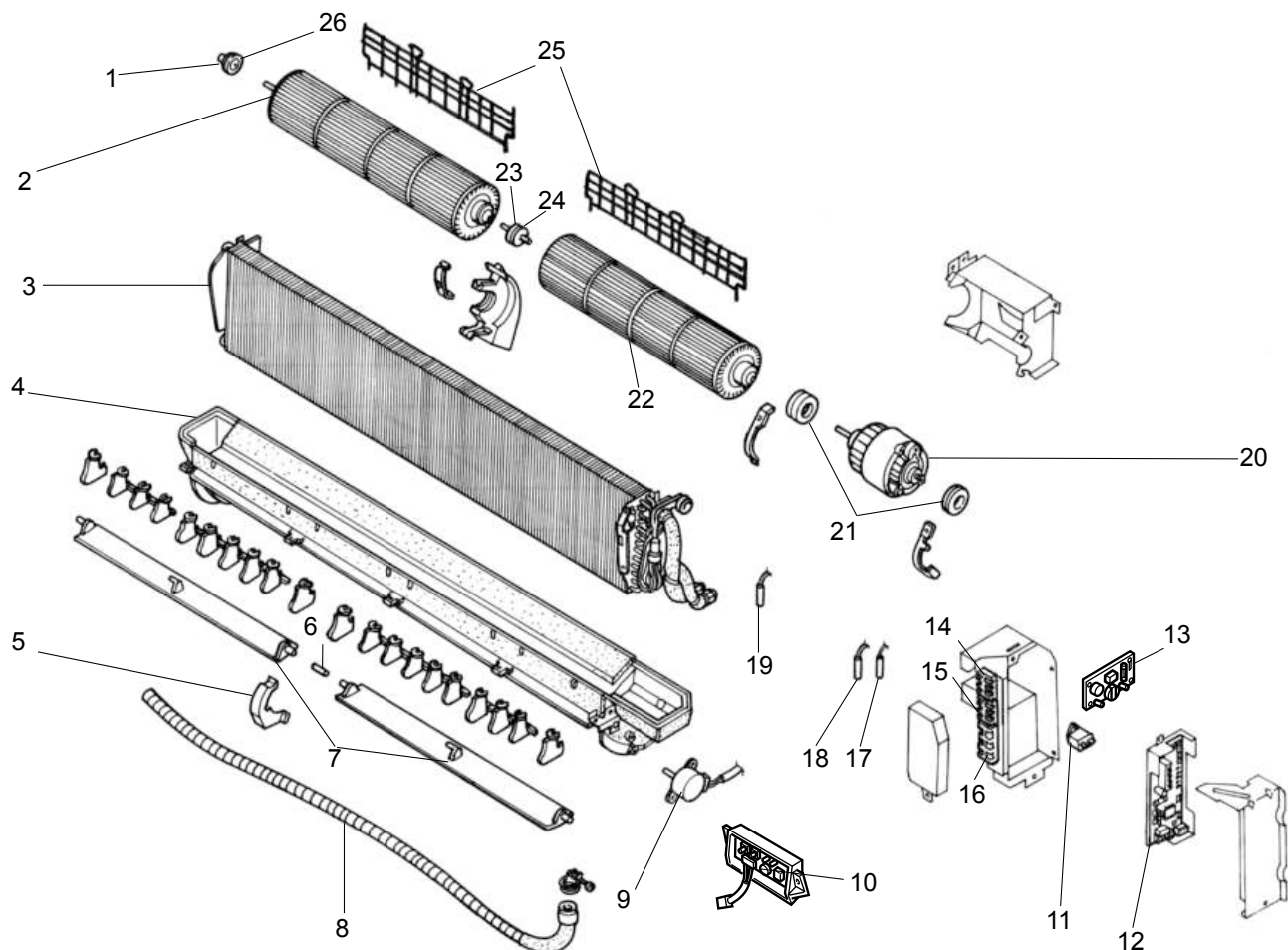
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No.	Parts No.	Parts Name	Specifications	Q'ty/set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
				PKA-A				
				12, 18GA	12, 18GAL			
18	T7W E11 716	TERMINAL BLOCK	3P(L1,L2,GR)	1	1		TB2	
19	R01 E13 246	TERMINAL BLOCK	3P(S1, S2, S3)	1	1		TB4	
20	T7W E11 255	CAPACITOR	2.0 μ F $\times$ 440V	1	1		C	
21	T7W E46 310	INDOOR CONTROLLER BOARD		1	1		I.B	
22	T7W E24 313	POWER BOARD		1	1		P.B	
23	R01 556 246	TERMINAL BLOCK	2P(1,2)	1			TB5	
24	R01 E58 202	CONDENSER / EVAPORATOR TEMPERATURE THERMISTOR		1	1		TH5	
25	T7W E05 202	ROOM TEMPERATURE THERMISTOR		1	1		TH1	
26	R01 E02 202	PIPE TEMPERATURE THERMISTOR		1	1		TH2	
27	T7W E06 130	MOTOR SUPPORT		1	1			

ELECTRICAL PARTS

PKA-A24FA PKA-A30FA PKA-A24FAL PKA-A30FAL



No.	Part No.				Part Name	Specification	Q'ty/set				Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
							PKA-A						
							24FA	30FA	24FAL	30FAL			
1	R01	Z61	102	BEARING MOUNT		1	1	1	1				
2	R01	E23	114	LEFT LINEFLOW FAN		1	1	1	1				
3	T7W	H25	480	HEAT EXCHANGER		1		1					
	T7W	H26	480	HEAT EXCHANGER			1		1				
4	T7W	E13	529	DRAIN PAN		1	1	1	1				
5	R01	12G	621	CENTER COVER		1	1	1	1				
6	R01	12G	063	JOINT SHAFT		1	1	1	1				
7	R01	12G	002	AUTO VANE		2	2	2	2				
8	R01	KV5	527	DRAIN HOSE		1	1	1	1				
9	R01	E02	223	VANE MOTOR		1	1	1	1		MV		
10	R01	E03	317	WIRELESS ADAPTER CONTROLLER BOARD				1	1		W.B		
11	T7W	E03	255	CAPACITOR	2.5μF 440V	1	1	1	1		C		
12	T7W	E46	310	INDOOR CONTROLLER BOARD		1	1	1	1		I.B		

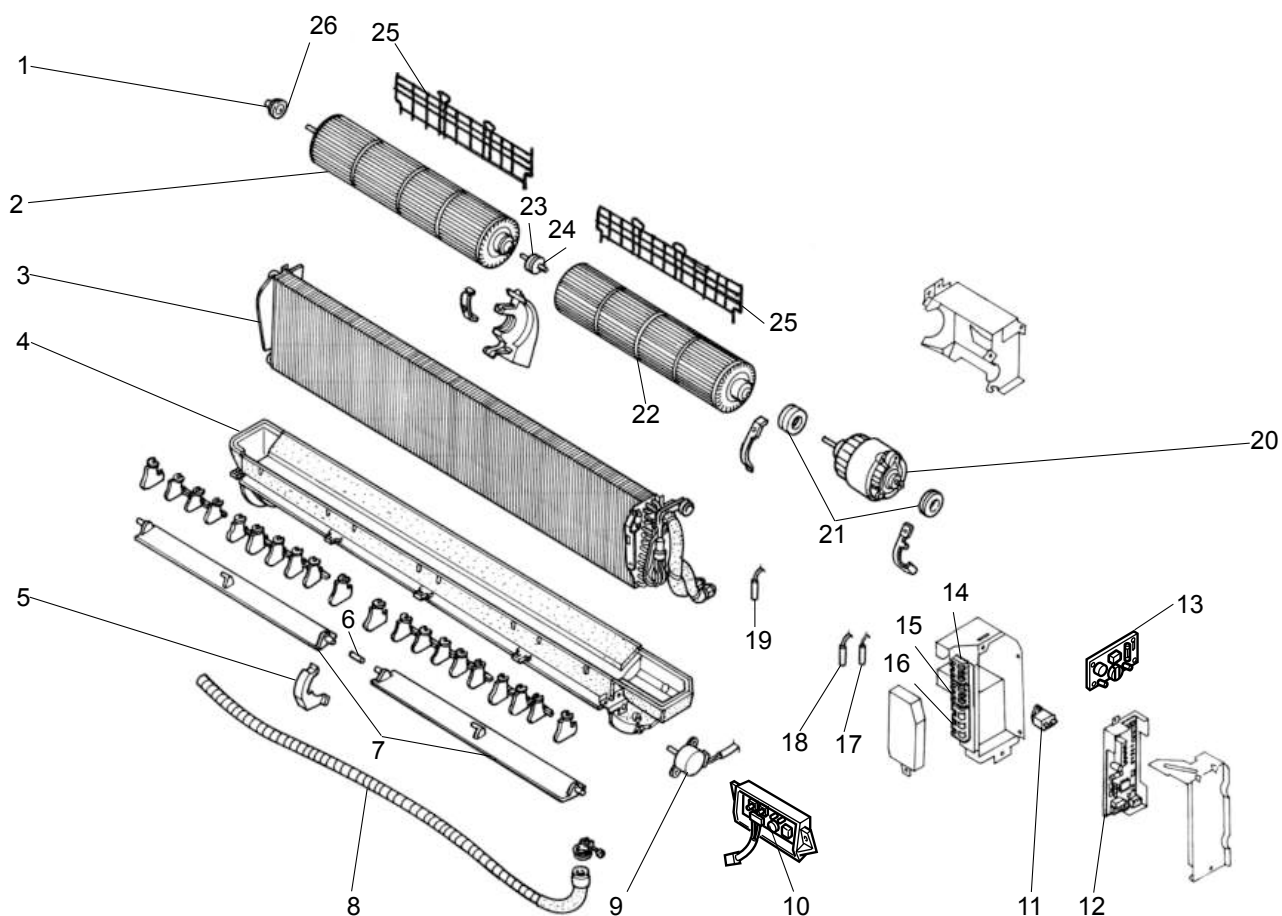
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No.	Part No.			Part Name	Specification	Q'ty/set				Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
						PKA-A						
						24FA	30FA	24FAL	30FAL			
13	T7W	E24	313	INDOOR POWER BOARD		1	1	1	1		P.B	
14	R01	556	246	TERMINAL BLOCK	2P(1, 2)	1	1				TB5	
15	R01	E13	246	TERMINAL BLOCK	3P(S1, S2, S3)	1	1	1	1		TB4	
16	T7W	E11	716	TERMINAL BLOCK	3P(L1, L2, GR)	1	1	1	1		TB2	
17	T7W	E12	202	ROOM TEMPERATURE THERMISTOR		1	1	1	1		TH1	
18	R01	E34	202	CONDENSER / EVAPORATOR TEMPERATURE THERMISTOR		1	1	1	1		TH5	
19	R01	E02	202	PIPE TEMPERATURE THERMISTOR		1	1	1	1		TH2	
20	T7W	B00	762	FAN MOTOR	PN4N45-K	1	1	1	1		MF	
21	R01	12G	105	RUBBER MOUNT		2	2	2	2			
22	R01	E04	115	RIGHT LINEFLOW FAN		1	1	1	1			
23	R01	KV5	102	BEARING MOUNT		1	1	1	1			
24	R01	12G	103	SLEEVE BEARING		1	1	1	1			
25	T7W	B02	675	FAN GUARD		2	2	2	2			
26	R01	005	103	SLEEVE BEARING		1	1	1	1			

ELECTRICAL PARTS

PKA-A36FA PKA-A36FAL



No.	Part No.				Part Name	Specification	Q'ty/set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
							PKA-A				
							36FA	36FAL			
1	R01	Z61	102	BEARING MOUNT		1	1				
2	R01	16G	114	LEFT LINEFLOW FAN		1	1				
3	T7W	H27	480	HEAT EXCHANGER		1	1				
4	T7W	E14	529	DRAIN PAN		1	1				
5	R01	12G	621	CENTER COVER		1	1				
6	R01	12G	063	JOINT SHAFT		1	1				
7	R01	16G	002	AUTO VANE		2	2				
8	R01	KV5	527	DRAIN HOSE		1	1				
9	R01	E05	223	VANE MOTOR		1	1		MV		
10	R01	E03	317	WIRELESS ADAPTER CONTROLLER BOARD			1		W.B		
11	T7W	E03	255	CAPACITOR	2.5F 440V	1	1		C		
12	T7W	E46	310	INDOOR CONTROLLER BOARD		1	1		I.B		

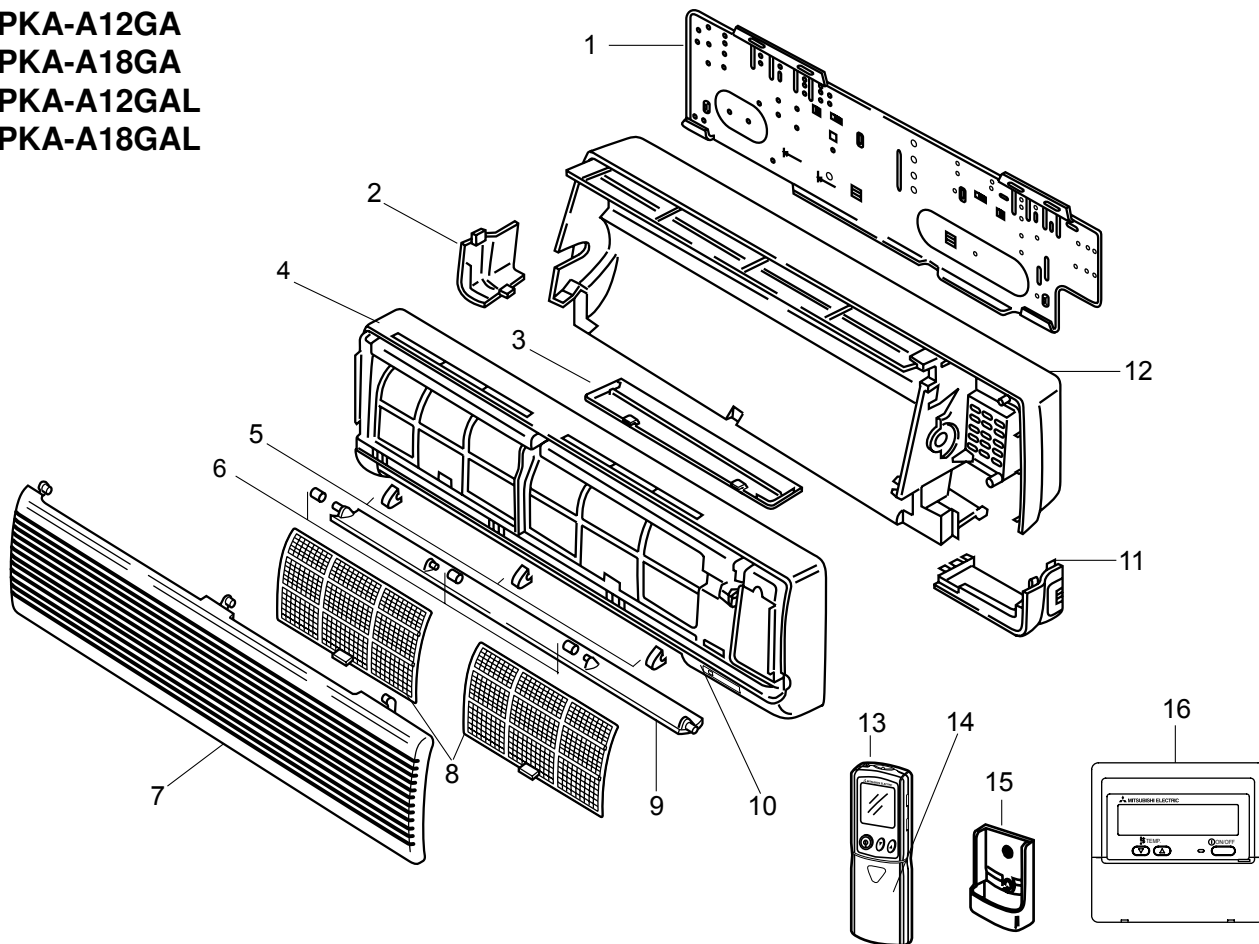
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No.	Part No.	Part Name	Specification	Q'ty/set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
				PKA-A				
				36FA	36FAL			
13	T7W E24 313	INDOOR POWER BOARD		1	1		P.B	
14	R01 556 246	TERMINAL BLOCK	2P(1, 2)	1			TB5	
15	R01 E13 246	TERMINAL BLOCK	3P(S1, S2, S3)	1	1		TB4	
16	T7W E11 716	TERMINAL BLOCK	3P(L1,L2,GR)	1	1		TB2	
17	T7W E12 202	ROOM TEMPERATURE THERMISTOR		1	1		TH1	
18	R01 E34 202	CONDENSER / EVAPORATOR TEMPERATURE THERMISTOR		1	1		TH5	
19	R01 E02 202	PIPE TEMPERATURE THERMISTOR		1	1		TH2	
20	T7W B01 762	FAN MOTOR	PN4N70-K	1	1		MF	
21	R01 16G 105	RUBBER MOUNT		2	2			
22	R01 16G 115	RIGHT LINEFLOW FAN		1	1			
23	R01 KV5 102	BEARING MOUNT		1	1			
24	R01 12G 103	SLEEVE BEARING		1	1			
25	T7W B03 675	FAN GUARD		2	2			
26	R01 005 103	SLEEVE BEARING		1	1			

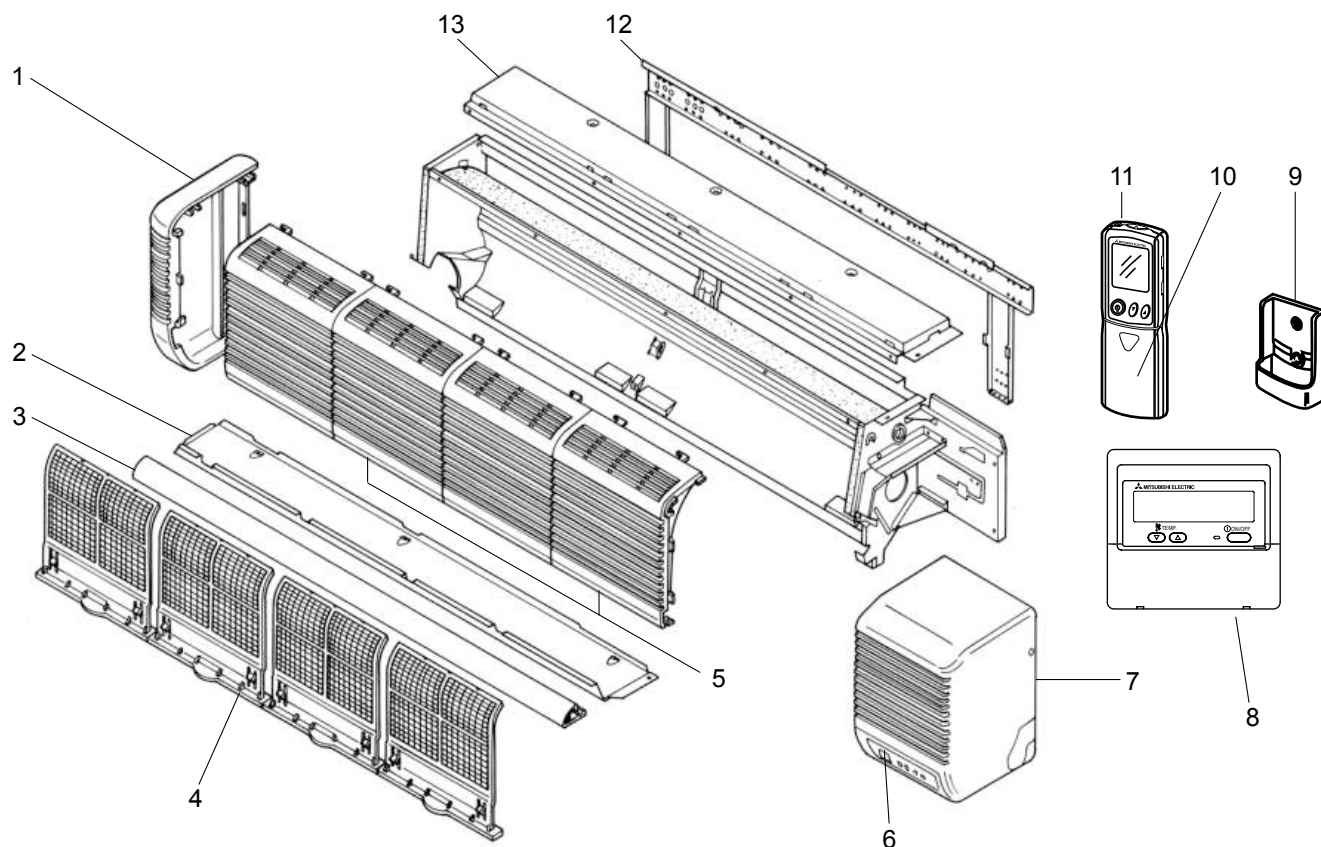
STRUCTURAL PARTS

PKA-A12GA
PKA-A18GA
PKA-A12GAL
PKA-A18GAL



No.	Parts No.			Parts Name	Specifications	Q'ty/set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
						PKA-A				
						12, 18GA	12, 18GAL			
1	R01	07Y	808	BACK PLATE		1	1			
2	R01	09Y	658	CORNER COVER		1	1			
3	R01	07Y	623	UNDER COVER		1	1			
4	R01	E05	651	FRONT PANEL		1	1			
5	R01	07Y	096	SCREW CAP		3	3			
6	R01	07Y	092	VANE SLEEVE		1	1			
7	R01	07Y	691	FRONT GRILLE		1	1			
8	R01	A16	500	AIR FILTER		2	2			
9	R01	07Y	002	AUTO VANE		1	1			
10	R01	24K	658	RECEIVING UNIT			1		RU	
11	R01	07Y	658	CORNER COVER		1	1			
12	R01	07Y	635	BOX ASSEMBLY		1	1			
13	T7W	E09	714	WIRELESS REMOTE CONTROLLER			1			
14	R01	E01	049	WIRELESS REMOTE CONTROLLER DOOR			1			
15	R01	E00	075	WIRELESS REMOTE CONTROLLER HOLDER			1			
16	T7W	E10	713	WIRED REMOTE CONTROLLER		1			R.B	

STRUCTURAL PARTS
PKA-A24FA PKA-A30FA
PKA-A24FAL PKA-A30FAL

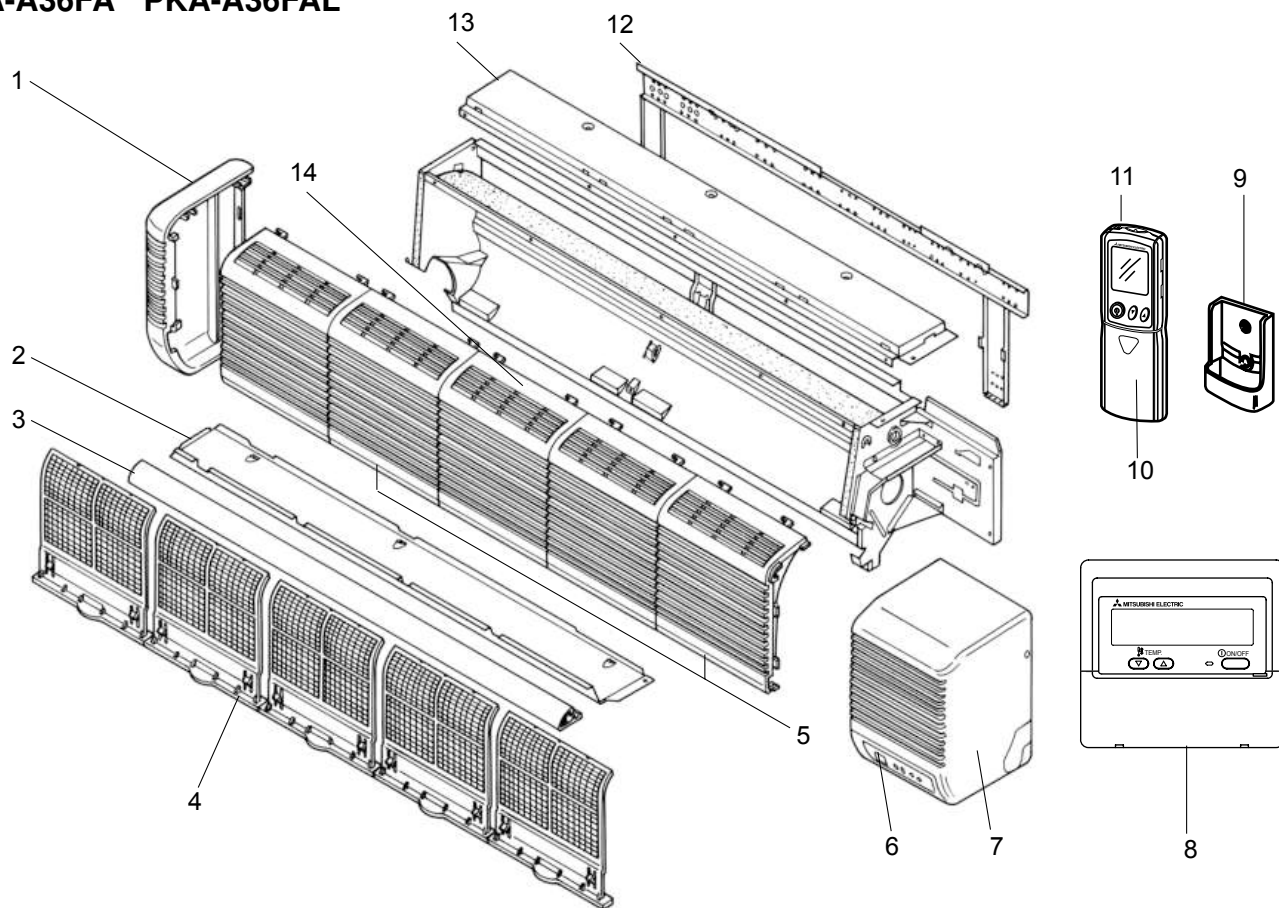


Part number that is circled is not shown in the figure.

No.	Part No.				Part Name	Specifications	Q'ty/set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
							PKA-A				
							24, 30FA	24, 30FAL			
1	R01	12G	662	LEFT SIDE PANEL			1	1			
2	R01	E01	812	UNDER PLATE			1	1			
3	R01	E00	811	NOSE			1	1			
4	R01	A17	500	AIR FILTER			4	4			
5	R01	12G	691	INTAKE GRILLE			2	2			
6	R01	24K	658	RECEIVER				1		RU	
7	R01	12G	661	RIGHT SIDE PANEL			1				
	T7W	E05	661	RIGHT SIDE PANEL				1			
8	T7W	E10	713	WIRED REMOTE CONTROLLER			1			R.B	
9	R01	E00	075	WIRELESS REMOTE CONTROLLER HOLDER				1			
10	R01	E01	049	WIRELESS REMOTE CONTROLLER DOOR				1			
11	T7W	E08	714	WIRELESS REMOTE CONTROLLER				1			
12	R01	12G	808	BACK PLATE			1	1			
13	R01	E01	641	TOP PLATE			1	1			
14	R01	12G	523	DRAIN SOCKET			1	1			

STRUCTURAL PARTS

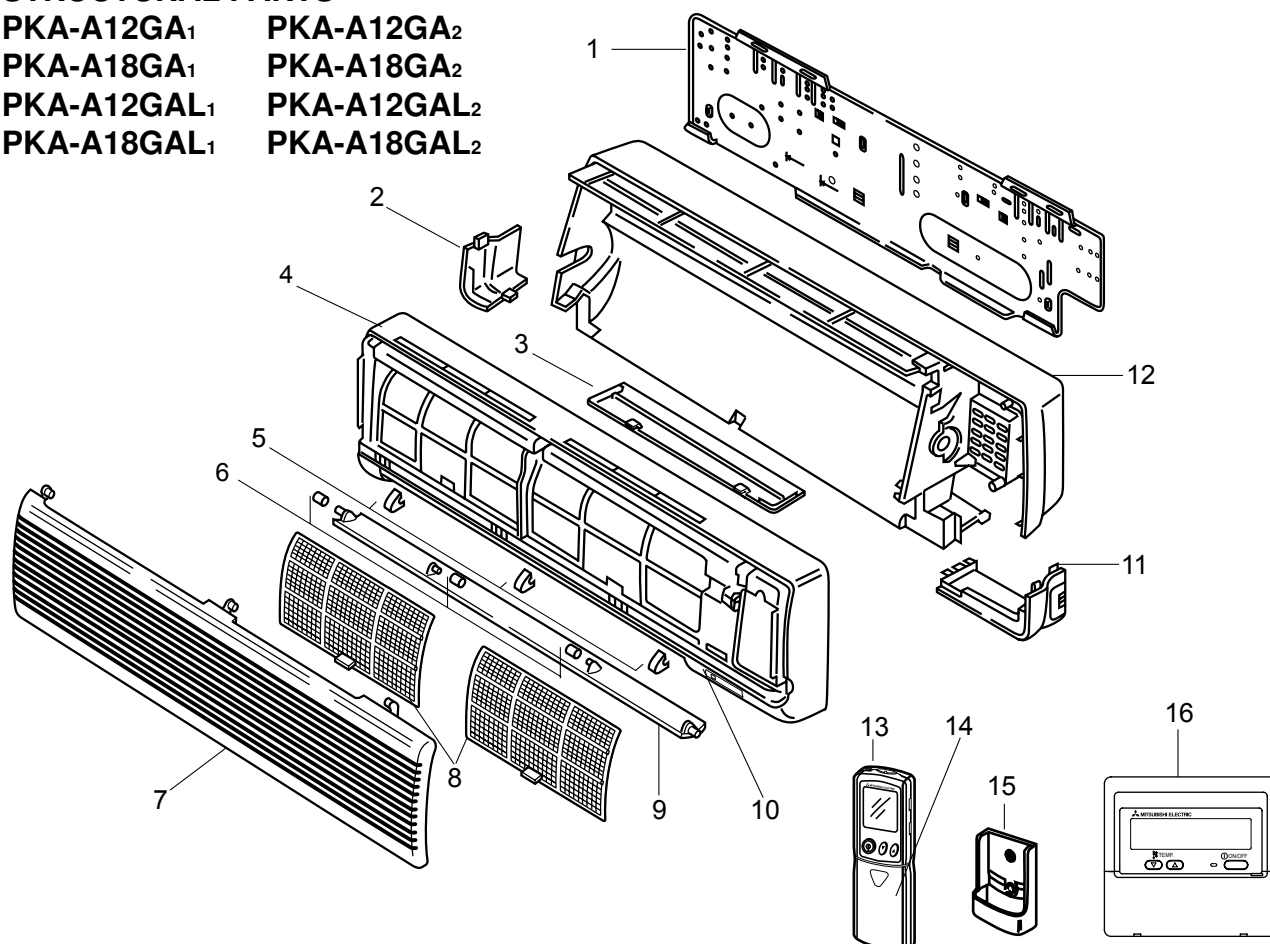
PKA-A36FA PKA-A36FAL



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

No.	Part No.				Part Name	Specification	Q'ty/set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
							PKA-A				
							36FA	36FAL			
1	R01	12G	662	LEFT SIDE PANEL		1	1				
2	R01	E00	812	UNDER PLATE		1	1				
3	R01	E01	811	NOSE		1	1				
4	R01	A17	500	AIR FILTER		5	5				
5	R01	12G	691	INTAKE GRILLE		2	2				
6	R01	24K	658	RECEIVER			1		RU		
7	R01	12G	661	RIGHT SIDE PANEL		1					
	T7W	E05	661	RIGHT SIDE PANEL			1				
8	T7W	E10	713	WIRED REMOTE CONTROLLER		1			R.B		
9	R01	E00	075	WIRELESS REMOTE CONTROLLER HOLDER			1				
10	R01	E01	049	WIRELESS REMOTE CONTROLLER DOOR			1				
11	T7W	E08	714	WIRELESS REMOTE CONTROLLER			1				
12	R01	16G	808	BACK PLATE		1	1				
13	R01	E00	641	TOP PLATE		1	1				
14	R01	16G	692	INTAKE GRILLE		1	1				
⑮	R01	12G	523	DRAIN SOCKET		1	1				

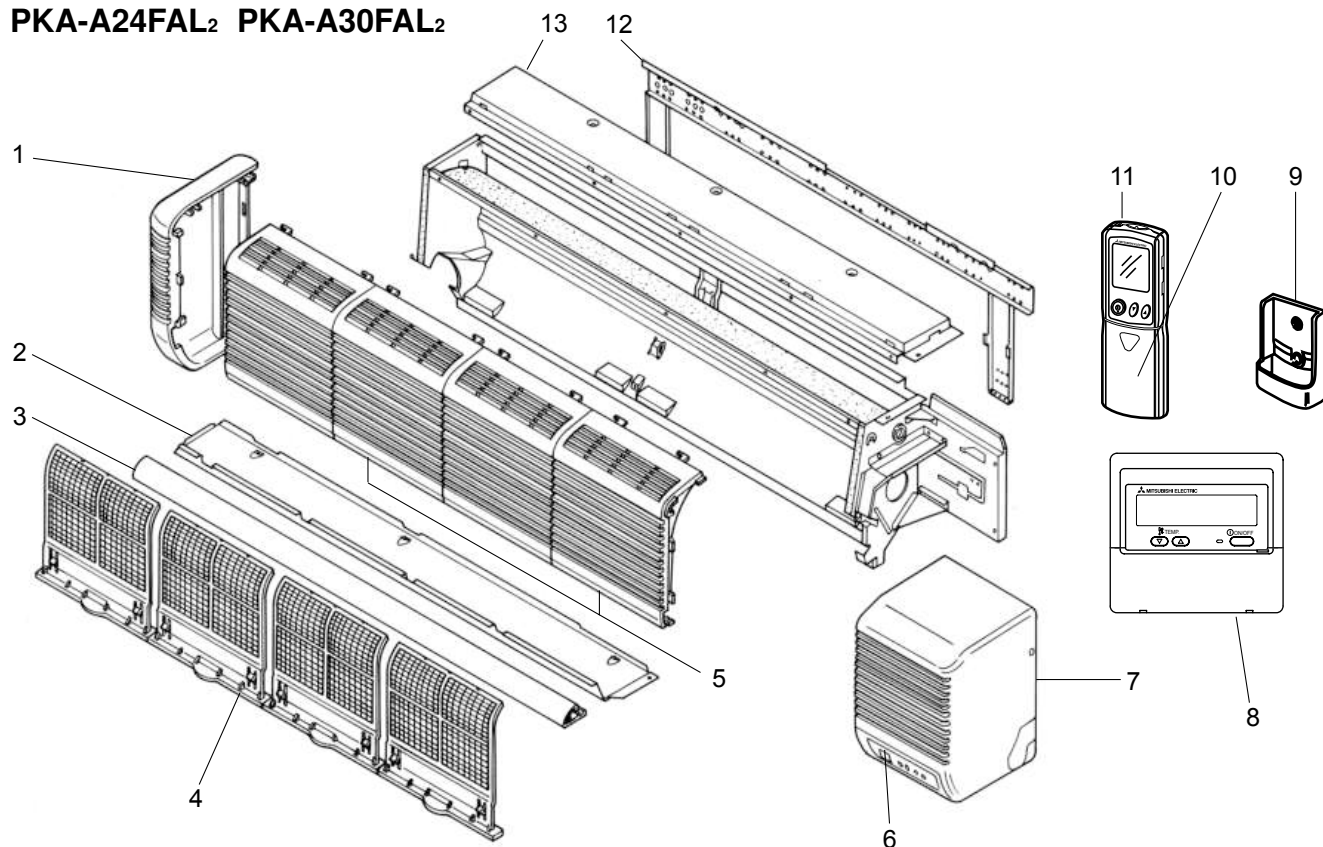
STRUCTURAL PARTS

PKA-A12GA₁ PKA-A12GA₂PKA-A18GA₁ PKA-A18GA₂PKA-A12GAL₁ PKA-A12GAL₂PKA-A18GAL₁ PKA-A18GAL₂

No.	RoHS	Parts No.			Parts Name	Specifications	Q'ty/set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
							PKA-A12/18				
							GA1/GA2	GAL1/GAL2			
1	G	R01	08Y	808	BACK PLATE		1	1			
2	G	R01	08Y	658	CORNER COVER		1	1			
3	G	R01	08Y	623	UNDER COVER		1	1			
4	G	R01	E05	651	FRONT PANEL		1	1			
5	G	R01	08Y	096	SCREW CAP		3	3			
6	G	R01	08Y	092	VANE SLEEVE		1	1			
7	G	R01	08Y	691	FRONT GRILLE		1	1			
8	G	R01	A32	500	AIR FILTER		2	2			
9	G	R01	08Y	002	AUTO VANE		1	1			
10	G	R01	E18	658	RECEIVING UNIT			1		RU	
11	G	R01	10Y	658	CORNER COVER		1	1			
12	G	R01	08Y	635	BOX ASSEMBLY		1	1			
13	G	T7W	E09	714	WIRELESS REMOTE CONTROLLER			1			
14	G	R01	E03	049	WIRELESS REMOTE CONTROLLER DOOR			1			
15	G	R01	E00	075	WIRELESS REMOTE CONTROLLER HOLDER			1			
16	G	T7W	E14	713	WIRED REMOTE CONTROLLER		1			R.B	

STRUCTURAL PARTS

PKA-A24FA₁ PKA-A30FA₁
 PKA-A24FAL₁ PKA-A30FAL₁
 PKA-A24FA₂ PKA-A30FA₂
 PKA-A24FAL₂ PKA-A30FAL₂

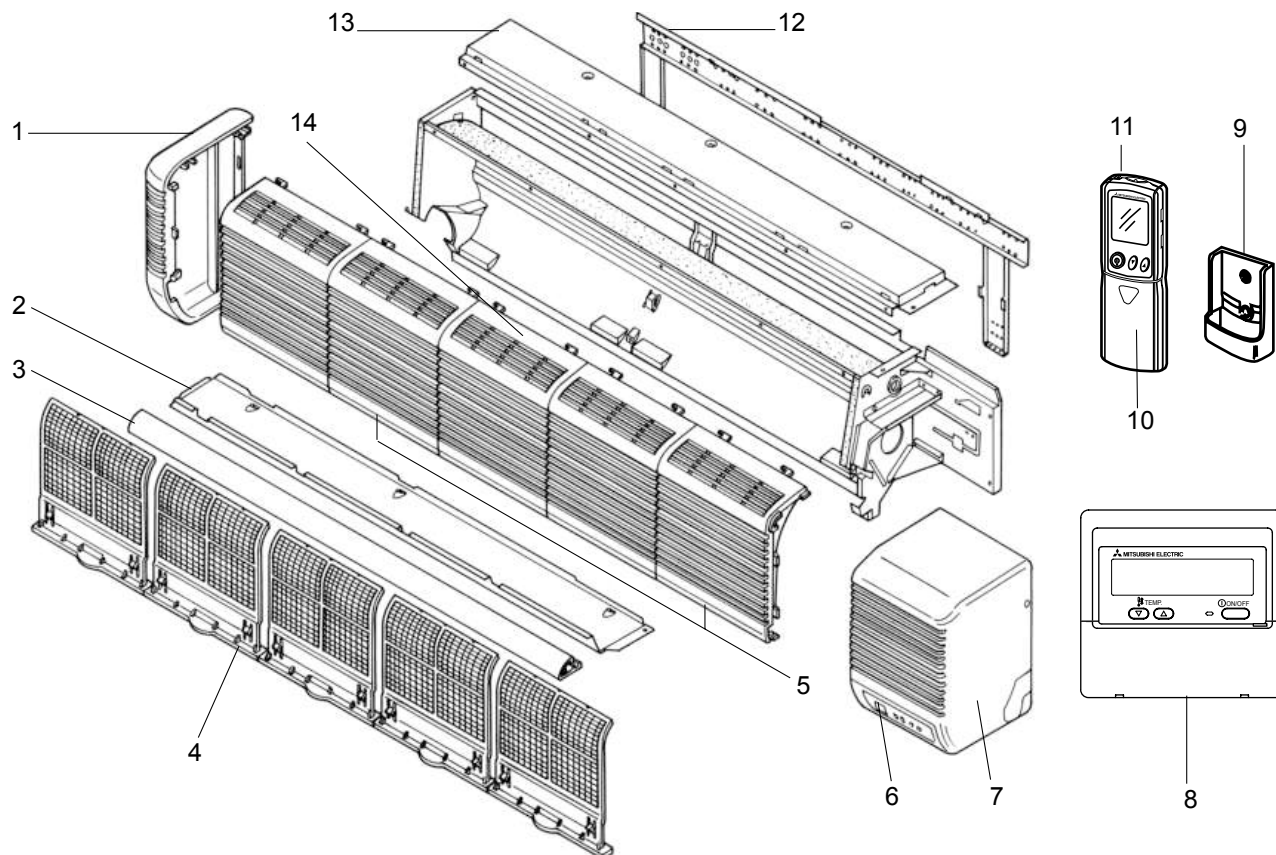


Part number that is circled is not shown in the figure.

No.	RoHS	Part No.	Part Name	Specifications	Q'ty/set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- ended Q'ty
					PKA-A24/30				
					FA ₁ /FA ₂	FAL ₁ /FAL ₂			
1	G	R01 14G 662	LEFT SIDE PANEL		1	1			
2	G	R01 E02 812	UNDER PLATE		1	1			
3	G	R01 E00 811	NOSE		1	1			
4	G	R01 A17 500	AIR FILTER		4	4			
5	G	R01 17G 691	INTAKE GRILLE		2	2			
6	G	R01 E18 658	RECEIVER			1		RU	
7	G	R01 14G 661	RIGHT SIDE PANEL		1				
	G	T7W E18 661	RIGHT SIDE PANEL			1			
8	G	T7W E14 713	WIRED REMOTE CONTROLLER		1			R.B	
9	G	R01 E00 075	WIRELESS REMOTE CONTROLLER HOLDER			1			
10	G	R01 E03 049	WIRELESS REMOTE CONTROLLER DOOR			1			
11	G	T7W E08 714	WIRELESS REMOTE CONTROLLER			1			
12	G	R01 E03 808	BACK PLATE		1	1			
13	G	R01 E19 641	TOP PLATE		1	1			
⑭	G	R01 E02 523	DRAIN SOCKET		1	1			

STRUCTURAL PARTS

PKA-A36FA₁ PKA-A36FAL₁ PKA-A36FA₂ PKA-A36FAL₂



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

No.	RoHS	Part No.			Part Name	Specification	Q'ty/set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
							PKA-A36				
							FA ₁ /FA ₂	FAL ₁ /FAL ₂			
1	G	R01	14G	662	LEFT SIDE PANEL		1	1			
2	G	R01	E03	812	UNDER PLATE		1	1			
3	G	R01	E01	811	NOSE		1	1			
4	G	R01	A17	500	AIR FILTER		5	5			
5	G	R01	17G	691	INTAKE GRILLE		2	2			
6	G	R01	E18	658	RECEIVER			1		RU	
7	G	R01	14G	661	RIGHT SIDE PANEL		1				
	G	T7W	E18	661	RIGHT SIDE PANEL			1			
8	G	T7W	E14	713	WIRED REMOTE CONTROLLER		1			R.B	
9	G	R01	E00	075	WIRELESS REMOTE CONTROLLER HOLDER			1			
10	G	R01	E03	049	WIRELESS REMOTE CONTROLLER DOOR			1			
11	G	T7W	E08	714	WIRELESS REMOTE CONTROLLER			1			
12	G	R01	E04	808	BACK PLATE		1	1			
13	G	R01	E20	641	TOP PLATE		1	1			
14	G	R01	18G	692	INTAKE GRILLE		1	1			
15	G	R01	E02	523	DRAIN SOCKET		1	1			

ELECTRICAL PARTS

PKA-A12GA₁

PKA-A12GAL₁

PKA-A12GA₂

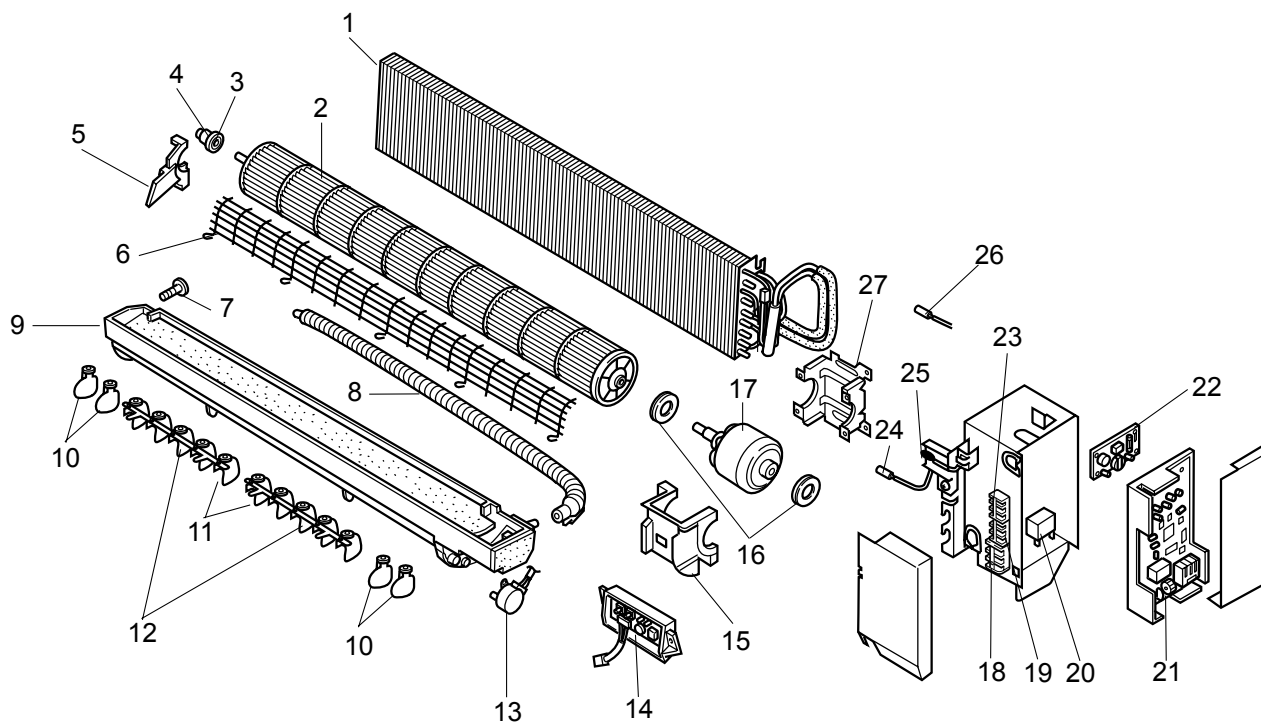
PKA-A12GAL₂

PKA-A18GA₁

PKA-A18GAL₁

PKA-A18GA₂

PKA-A18GAL₂



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

No.	RoHS	Parts No.			Parts Name	Specifications	Q'ty/set				Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
							PKA-A12,18						
							GA ₁	GAL ₁	GA ₂	GAL ₂			
1	G	T7W	H28	480	HEAT EXCHANGER		1	1	1	1			
2	G	R01	E22	114	LINE FLOW FAN		1	1	1	1			
3	G	R01	08Y	102	BEARING MOUNT		1	1	1	1			
4	G	R01	E04	103	SLEEVE BEARING		1	1	1	1			
5	G	R01	08Y	106	BEARING SUPPORT		1	1	1	1			
6	G	T7W	A01	675	FAN GUARD		1	1	1	1			
7	G	R01	08Y	524	DRAIN PLUG		1	1	1	1			
8	G	R01	08Y	527	DRAIN HOSE		1	1	1	1			
9	G	R01	08Y	530	NOZZLE		1	1	1	1			
10	G	R01	10Y	038	GUIDE VANE		4	4	4	4			
11	G	R01	08Y	038	GUIDE VANE		10	10	10	10			
12	G	R01	08Y	059	ARM		2	2	2	2			
13	G	R01	E14	223	VANE MOTOR		1	1	1	1		MV	
14	G	R01	E06	317	WIRERLESS ADAPTER CONTROLLER BOARD			1		1		W.B	
15	G	R01	08Y	135	MOTOR COVER		1	1	1	1			
16	G	R01	08Y	105	RUBBER MOUNT		2	2	2	2			
17	G	T7W	E30	762	FAN MOTOR	PM4V30-K	1	1	1	1		MF	

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From the previous page

No.	RoHS	Parts No.			Parts Name	Specifications	Q'ty/set				Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
							PKA-A12,18						
							GA ₁	GAL ₁	GA ₂	GAL ₂			
18	G	T7W	E41	716	TERMINAL BLOCK	3P(L1, L2, GR)	1	1				TB2	
19	G	R01	E18	246	TERMINAL BLOCK	3P(S1, S2, S3)	1	1	1	1		TB4	
20	G	T7W	E17	255	CAPACITOR	2.0 μ F $\times$ 440V	1	1	1	1		C	
21	G	T7W	E56	310	INDOOR CONTROLLER BOARD		1	1				I.B	
	G	T7W	E70	310	INDOOR CONTROLLER BOARD				1	1		I.B	
22	G	T7W	E35	313	POWER BOARD		1	1	1	1		P.B	
23	G	R01	E21	246	TERMINAL BLOCK	2P(1,2)	1					TB5	
	G	T7W	E46	716	TERMINAL BLOCK	2P(1,2)			1			TB5	
24	G	R01	H11	202	CONDENSER/EVAPORATOR TEMPERATURE THERMISTOR		1	1	1	1		TH5	
25	G	R01	H08	202	ROOM TEMPERATURE THERMISTOR		1	1				TH1	
	G	T7W	E05	202	ROOM TEMPERATURE THERMISTOR				1	1		TH1	
26	G	R01	H05	202	PIPE TEMPERATURE THERMISTOR		1	1	1	1		TH2	
27	G	T7W	E10	130	MOTOR SUPPORT		1	1	1	1			
28	G	R01	E06	239	FUSE	6.3A 250V	1	1	1	1		FUSE	

ELECTRICAL PARTS

PKA-A24FA₁

PKA-A30FA₁

PKA-A24FAL₁

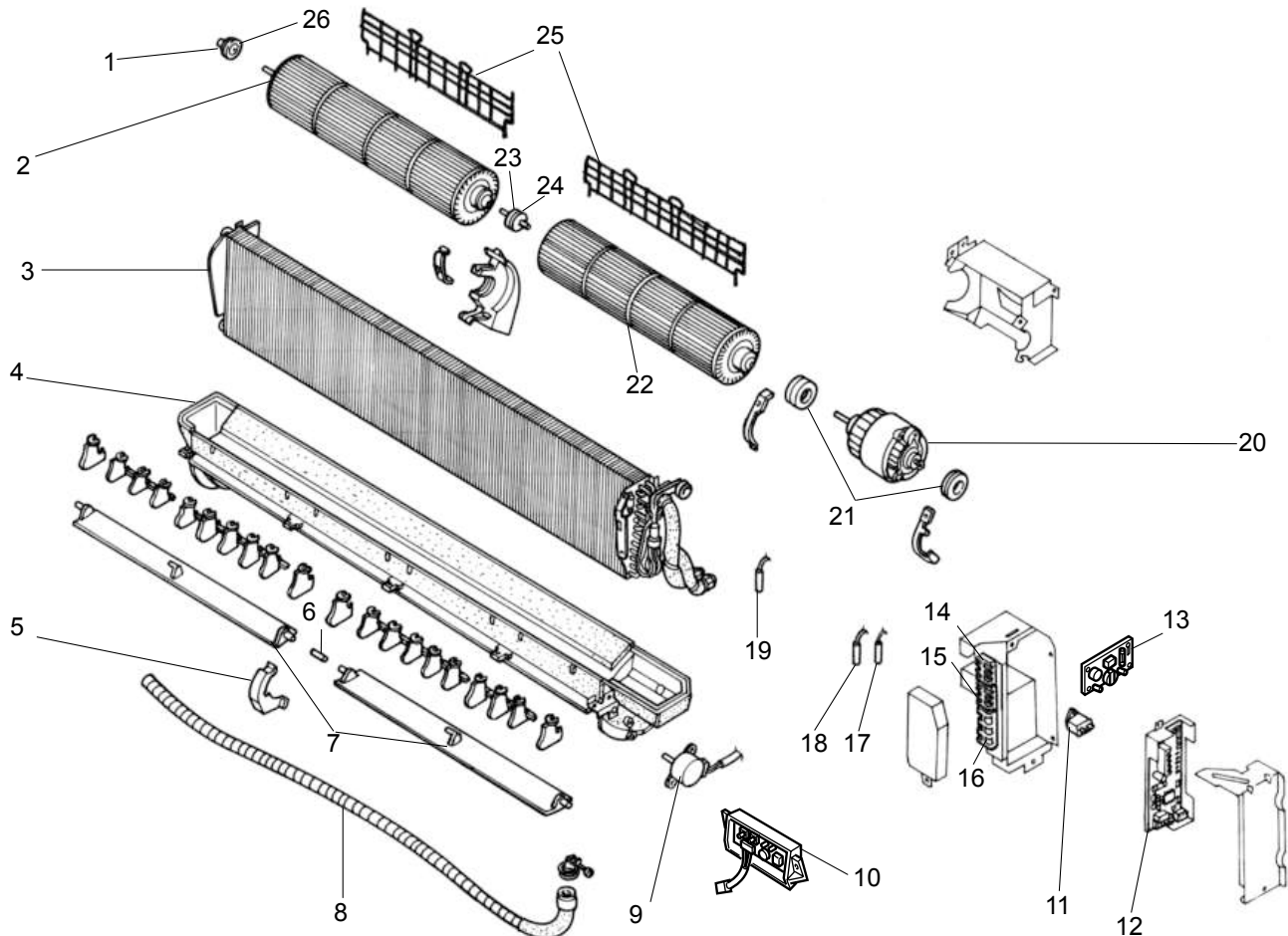
PKA-A30FAL₁

PKA-A24FA₂

PKA-A30FA₂

PKA-A24FAL₂

PKA-A30FAL₂



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

No.	RoHS	Part No.	Part Name	Specification	Q'ty/set								Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
					PKA-A										
					24	30	24	30	24	30	24	30			
					FA ₁	FAL ₁	FA ₂	FAL ₂							
1	G	R01 Z61 102	BEARING MOUNT		1	1	1	1	1	1	1	1			
2	G	R01 E23 114	LEFT LINEFLOW FAN		1	1	1	1	1	1	1	1			
3	G	T7W H25 480	HEAT EXCHANGER		1		1		1		1				
	G	T7W H26 480	HEAT EXCHANGER			1		1		1		1			
4	G	T7W E24 529	DRAIN PAN		1	1	1	1	1	1	1	1			
5	G	R01 14G 621	CENTER COVER		1	1	1	1	1	1	1	1			
6	G	R01 13G 063	JOINT SHAFT		1	1	1	1	1	1	1	1			
7	G	R01 18G 002	AUTO VANE		2	2	2	2	2	2	2	2			
8	G	R01 E04 527	DRAIN HOSE		1	1	1	1	1	1	1	1			
9	G	R01 E15 223	VANE MOTOR		1	1	1	1	1	1	1	1		MV	
10	G	R01 E06 317	WIRELESS ADAPTER CONTROLLER BOARD				1	1			1	1		W.B	
11	G	T7W E16 255	CAPACITOR	2.5μF 440V	1	1	1	1	1	1	1	1		C	
12	G	T7W E56 310	INDOOR CONTROLLER BOARD		1	1	1	1						I.B	
	G	T7W E70 310	INDOOR CONTROLLER BOARD						1	1	1	1		I.B	

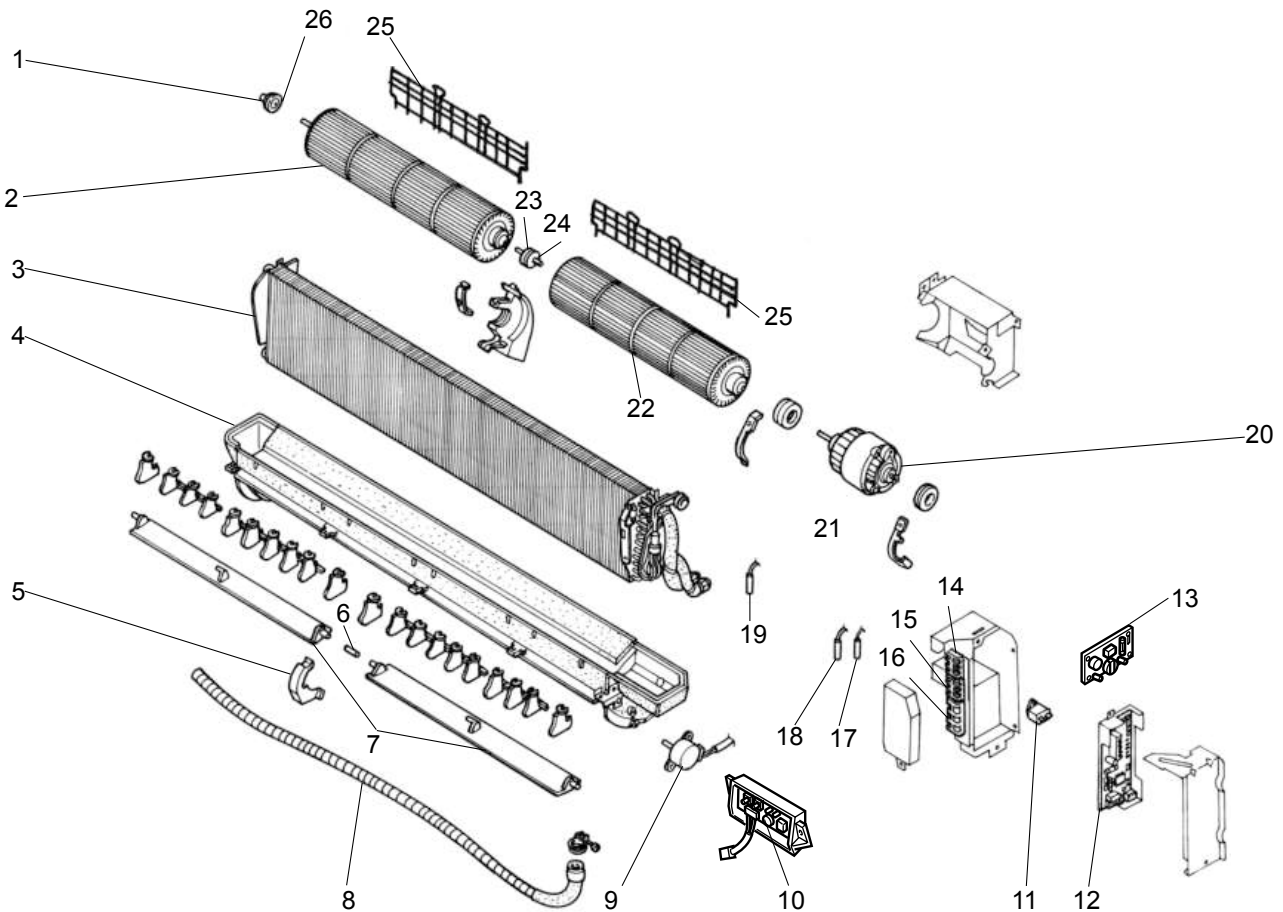
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No.	RoHS	Part No.	Part Name	Specification	Q'ty/set								Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
					PKA-A										
					24	30	24	30	24	30	24	30			
					FA ₁	FAL ₁	FA ₂	FAL ₂							
13	G	T7W E35 313	INDOOR POWER BOARD		1	1	1	1	1	1	1	1		P.B	
14	G	T7W E46 716	TERMINAL BLOCK	2P(1, 2)	1	1			1	1				TB5	
15	G	R01 E18 246	TERMINAL BLOCK	3P(S1, S2, S3)	1	1	1	1	1	1	1	1		TB4	
16	G	T7W E41 716	TERMINAL BLOCK	3P(L1, L2, GR)	1	1	1	1						TB2	
17	G	R01 H06 202	ROOM TEMPERATURE THERMISTOR		1	1	1	1	1	1	1	1		TH1	
18	G	R01 H07 202	CONDENSER / EVAPORATOR TEMPERATURE THERMISTOR		1	1	1	1	1	1	1	1		TH5	
19	G	R01 H05 202	PIPE TEMPERATURE THERMISTOR	PN4N45-K	1	1	1	1	1	1	1	1		TH2	
20	G	T7W B05 762	FAN MOTOR		1	1	1	1	1	1	1	1		MF	
21	G	R01 12G 105	RUBBER MOUNT		2	2	2	2	2	2	2	2			
22	G	R01 E04 115	RIGHT LINEFLOW FAN		1	1	1	1	1	1	1	1			
23	G	R01 KV5 102	BEARING MOUNT		1	1	1	1	1	1	1	1			
24	G	R01 E03 103	SLEEVE BEARING		1	1	1	1	1	1	1	1			
25	G	T7W E15 675	FAN GUARD		2	2	2	2	2	2	2	2			
26	G	R01 E04 103	SLEEVE BEARING		1	1	1	1	1	1	1	1			
27	G	R01 E06 239	FUSE	6.3A 250V	1	1	1	1	1	1	1	1		FUSE	

ELECTRICAL PARTS

PKA-A36FA₁ PKA-A36FAL₁ PKA-A36FA₂ PKA-A36FAL₂



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

No.	ROHS	Part No.			Part Name	Specification	Q'ty/set				Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
							PKA-A36						
							FA ₁	FAL ₁	FA ₂	FAL ₂			
1	G	R01	Z61	102	BEARING MOUNT		1	1	1	1			
2	G	R01	19G	114	LEFT LINEFLOW FAN		1	1	1	1			
3	G	T7W	H27	480	HEAT EXCHANGER		1	1	1	1			
4	G	T7W	E25	529	DRAIN PAN		1	1	1	1			
5	G	R01	14G	621	CENTER COVER		1	1	1	1			
6	G	R01	13G	063	JOINT SHAFT		1	1	1	1			
7	G	R01	19G	002	AUTO VANE		2	2	2	2			
8	G	R01	E04	527	DRAIN HOSE		1	1	1	1			
9	G	R01	E15	223	VANE MOTOR		1	1	1	1		MV	
10	G	R01	E06	317	WIRELESS ADAPTER CONTROLLER BOARD			1		1		W.B	
11	G	T7W	E16	255	CAPACITOR	2.5F 440V	1	1	1	1		C	
12	G	T7W	E56	310	INDOOR CONTROLLER BOARD		1	1				I.B	
	G	T7W	E70	310	INDOOR CONTROLLER BOARD				1	1		I.B	

From the previous page

No.	RoHS	Part No.	Part Name	Specification	Q'ty/set				Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty
					PKA-A36						
					FA ₁	FAL ₁	FA ₂	FAL ₂			
13	G	T7W E35 313	INDOOR POWER BOARD		1	1	1	1		P.B	
14	G	T7W E46 716	TERMINAL BLOCK	2P(1, 2)	1		1			TB5	
15	G	R01 E18 246	TERMINAL BLOCK	3P(S1, S2, S3)	1	1	1	1		TB4	
16	G	T7W E41 716	TERMINAL BLOCK	3P(L1,L2,GR)	1	1				TB2	
17	G	R01 H06 202	ROOM TEMPERATURE THERMISTOR		1	1	1	1		TH1	
18	G	R01 H07 202	CONDENSER / EVAPORATOR TEMPERATURE THERMISTOR		1	1	1	1		TH5	
19	G	R01 H05 202	PIPE TEMPERATURE THERMISTOR		1	1	1	1		TH2	
20	G	T7W B06 762	FAN MOTOR	PN4N70-K	1	1	1	1		MF	
21	G	R01 16G 105	RUBBER MOUNT		2	2	2	2			
22	G	R01 19G 115	RIGHT LINEFLOW FAN		1	1	1	1			
23	G	R01 KV5 102	BEARING MOUNT		1	1	1	1			
24	G	R01 E03 103	SLEEVE BEARING		1	1	1	1			
25	G	T7W E16 675	FAN GUARD		2	2	2	2			
26	G	R01 E04 103	SLEEVE BEARING		1	1	1	1			
27	G	R01 E06 239	FUSE	6.3A 250V	1	1	1	1		FUSE	





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